FREQUENTLY ASKED QUESTIONS ON LIVER DISEASE

South Asian Association for the Study of the Liver

SAASL

Women in Hepatology Forum

FREQUENTLY ASKED QUESTIONS (FAQS) ON LIVER DISEASE

AN INITIATIVE OF SAASL WOMEN IN HEPATOLOGY FORUM.

These FAQs were formulated for educating the patients regarding the nature of their liver disease, its symptoms, prognosis, treatment options. Eminent and renowned hepatologists from Bangladesh, India and Pakistan came together under the auspices of SAASL Women in Hepatology Forum to prepare them. Patients with liver disease have also contributed to the FAQs by giving us suggestions and making figures/pictures for the FAQs. The main focus was to provide patients and their families with authentic and easy to understand information on liver disease to alleviate the misconceptions and anxiety that may arise due to accessing information available online which may be biased or irrelevant to local conditions. The aim was to provide information from a South Asian perspective. We hope that these FAQs empower patients with the knowledge about their disease. We appeal to our colleagues to use them freely in their clinical practice, translate them into local languages and give us feedback. We would however request that the source (SAASL Women in Hepatology Forum) be acknowledged.

Delvin Specialities
Destiny for Innovation

We acknowledge Delvin for providing an educational grant to publish the FAQs

Cover page artist **Sukhada Thorat**

CORE COMMITTEE

Aabha Nagral
Conception and Coordination of FAQS

Samriddhi Poyekar
Coordinator of FAQs

REVIEWERS FOR THE FAQS

Aabha Nagral | **Ashish Kumar** | **C.E.Eapen** | **Madhumita Premkumar**

Malathi Sathiyasekaran | **Shalimar** | **Sanjiv Saigal**

SAASL WOMEN IN HEPATOLOGY FORUM

Aabha Nagral
Chairperson

Lubna Kamani
Co-Chairperson

Most. Rokshana Begum
Member Secretary

SOUTH ASIAN ASSOCIATION FOR STUDY OF LIVER DISEASE

Shivram Prasad Singh
President

Mamun Al Mahtab
Secretery

CONTRIBUTORS

Aabha Nagral
Director, Department of Gastroenterology and Transplant Hepatologist, Jaslok Hospital and Consultant Hepatologist and Liver Transplant Physician Apollo Hospital, Mumbai, India.

Aathira Ravindranath
Consultant Pediatric Gastroenterology and Hepatology Apollo BGS Hospitals, Mysore, India.

Abraham Koshy
Director Research & Hepatology, VPS Lakeshore Hospital, Kochi, India.

Aditya Kale
Associate Professor Department of Digestive Diseases and Clinical Nutrition, Advanced Centre for Treatment, Research and Education in Cancer, Kharghar and Tata Memorial Hospital, Mumbai, India.

Ajay Duseja
Professor & Head Department of Hepatology Post Graduate Institute of Medical Education and Research, Chandigarh, India.

Akash Roy
Consultant Hepatologist and Liver Transplant Physician Apollo Hospitals, Kolkata, India.

Alisha Chaubal
Consultant Hepatologist Global Hospital, Mumbai, India.

Ameet Mandot
Head - Department of Hepatology and LICU Global Hospital, Mumbai, India.

Anand Kulkarni
Consultant, Hepatology and Liver Transplantation, Asian Institute of Gastroenterology, Hyderabad, India.

Anil Arora
Chairman, Institute Of Liver Gastroenterology & Pancreatico Biliary Sciences Sir Ganga Ram hospital, New Delhi, India.

Anshu Srivastava
Professor, Department of Pediatric Gastroenterology SGPGIMS, Lucknow, India.

Arifa Tasnim
Assistant Registrar, Sheikh Russel National Gastroliver Institute and Hospital, Dhaka, Bangladesh.

Ashish Bavdekar
Acting Director of Pediatrics & Pediatric Gastroenterologist, KEM Hospital, Pune, India.

Ashish Kumar
Professor & Senior Consultant of Gastroenterology & Hepatology, Sir Ganga Ram Hospital, New Delhi, India.

Ashok Choudhury
Professor (Additional),Hepatology and Liver Transplant ILBS, New Delhi, India.

C.E. Eapen
Professor Department of Hepatology, Christian Medical College, Vellore, India.

CONTRIBUTORS

Chetan Kalal

Program Director - Hepatology & Transplant Medicine, Nanavati Max Super Speciality Hospital, Mumbai, India.

Cyriac Abby Philips

Specialist in Clinical and Translational Hepatology, The Liver Institute, Center of Excellence in GI Sciences, Rajagiri Hospital, Aluva, India.

Deepika Kedia

Consultant Hepatologist & Gastroenterologist, Department of Gastroenterology AMRI Hospital, Dhakuria, India.

Dharmesh Kapoor

Consultant Hepatologist, Yashoda Hospital, Hyderabad, India.

Farhana Kayani

Assistant Professor Department of Gastroenterology and hepatology Bolan university of medical and health sciences and Sheikh Khalifa bin Zayed hospital, Balochistan, Pakistan.

Geeta Mammayil

Senior Pediatric Gastroenterologist Aster Medcity, Cochin, India.

Gayathri Gopalkrishnan

Senior Consultant Dept of Medical Gastroenterology NH Mazumdar Shaw Medical Center, Bengaluru, India.

Geeta Billa

Consultant Gastroenterologist and Hepatologist Dr. LH Hiranandani Hospital, Powai, Mumbai, India.

Gomathy Narasimhan

Sr. Consultant Liver and Renal Transplant Surgeon, Dr.Rela Institute and Medical Center, Chennai, India.

Harshad Devarbhavi

Professor of Gastroenterology & Hepatology, St. John's Medical College Hospital, Bangalore, India.

Hemamala Ilango

Lead Hepatologist Department of Liver Diseases and Transplant Medicine MIOT Hospital, Chennai, India.

Jayanthi Shastri

Chair- Professor Centre of Excellence in Research & Training in Infectious Diseases Maharashtra University of Health Sciences Regional Centre, Mumbai, India.

Jhumur Ghosh

Associate Professor (Current Charge), MH Samorita Medical College and Hospital, Dhaka, Bangladesh.

Joy Varghese

Director - Department of Hepatology & Transplant Hepatology, Gleneagles Global Health City, Chennai, India.

Kalpana Panda

(Paediatric Hepatology) Associate Professor, Pediatric Gastroenterology, IMS & SUM Hospital, Bhubaneswar, India.

Kaushal Madan

Principal Director & Head, Clinical Hepatology, Max Super Speciality Hospital Saket, New Delhi, India.

CONTRIBUTORS

Kavya Dendukuri
Lead Consultant Hepatologist and liver Transplant Physician
Kamineni Hospitals,
Hyderabad, India.

Lata Prasad
Consultant Gastroenterologist & Hepatologist at
Virinchi Hospitals (Banjara Hills),
Hyderabad, India.

Lubna Kamani
Professor
Department of Gastroenterology,
Liaquat National Hospital, Karachi, Pakistan.

L. Venkatakrishnan
Professor and Head of the Department of Gastroenterology & Hepatology, PSG Institute of Medical Sciences & Research
Coimbatore, India.

Madhumita Premkumar
Associate Professor
Department of Hepatology, PGIMER,
Chandigarh, India.

Mala Kaneria
Professor and Unit Head
T.N Medical College and B.Y.L. Nair Charitable Hospital,
Kasturba Hospital for Infectious Diseases,Consultant, Infectious Diseases and HIV Medicine, Jaslok Hospital and Research Centre,
Mumbai, India.

Malathi Sathiyasekaran
Senior Consultant Pediatric Gastroenterologist; MGM Health Care, Rainbow Children's Hospitals, Chennai, India.

Mallika Bhattacharyya
Associate Professor,
Department of Gastroenterology
Gauhati Medical College and Hospital, Guwahati, India.

Mamun Al Mahtab
Head, Interventional Hepatology Division, Bangabandhu Sheikh Mujib Medical University, Dhaka,
Bangladesh.

Manav Wadhawan
Senior Director
Institute of Liver & Digestive Diseases
Head - Hepatology & Liver Transplant (Medicine)
BLK Super Speciality Hospital,
Delhi, India.

Md. Jahangir Alam Sharker
Associate Professor & Head
Department of Hepatology
Shaheed Suhrawardy Medical College, Dhaka, Bangladesh.

Mithra Prasad
Consultant Hepatologist,VGM hospital, Coimbatore, India.

Moinak Sen Sharma
Associate Professor
Dept. of Pediatric Gastroenterology
Sanjay Gandhi Postgraduate Institute of Medical Sciences,
Lucknow, India.

Molina Khanna
Consultant Gastroenterologist
Karuna Hospital, Suvarna Hospital and Lancelot kidney and GI centre,
Mumbai, India.

Most. Rokshana Begum
Assistant Professor
Department of Hepatology
ShSMC Sher-e-Bangla Nagar,
Dhaka, Bangladesh.

Mukta Bapat
Consultant Gastroenterologist and endoscopist
Jupiter Hospital, Thane, India.

CONTRIBUTORS

Narwana Khaleque
Medical officer,Sheikh Russel National Gastroliver Institute and hospital, Dhaka, Bangladesh.

Naveen Ganjoo
Senior Consultant Hepatologist and Transplant Physician, Sparsh Hospitals, Bengaluru, India.

Nazish Butt
Consultant Gastroenterologist & Hepatologist at Jinnah Postgraduate Medical Centre, National Medical Centre, Karachi, Pakistan.

Nutan Desai
Consultant Gastroenterologist Fortis Hospital Mulund, Mumbai, India.

Pallavi Garg
Senior consultant gastroenterology and hepatology max super speciality hospital Saket, New Delhi, India.

Pankaj Puri
Director of Gastroenterology and Hepatology at the Fortis Escorts Liver and Digestive Diseases Institute, Okhla, New Delhi, India.

Parijat Gupte
Gastroenterologist
Jupiter Hospital
Thane, India.

Partho Pratik Roy
Registrar Department of Hepatology
Shaheed Suhrawardy Medical College, Dhaka, Bangladesh.

Pathik Parikh
Consultant Hepatologist at Apollo Hospitals, Ahmedabad, India.

Pettarusp Wadia
Consultant Neurologist and Movement disorders specialist Jaslok Hospital and Research Centre, Mumbai, India.

Prabha Sawant
Professor and Head Department of Gastroenterology Global Hospital, Former Professor and Head Department of Gastroenterology LTMC,Mumbai,India.

Prachi Patil
Professor, Department of Digestive Diseases and Clinical Nutrition, Tata Memorial Hospital, Homi Bhabha National Institute (HBNI), Mumbai, India

Prashant Bhangui
Associate Director, Senior Hepatobiliary and Liver Transplant Surgeon, Institute of Liver Transplantation and Regenerative Medicine Medanta - The Medicity Gurugram - Delhi NCR, India.

Pravin Rathi
Prof. and head Department of Gastro T.N.Medical College B.Y.L.Nair Hospital, Mumbai, India.

Ponkaj Kumar Naha
Medical Officer
Department of Hepatology
Shaheed Suhrawardy Medical College, Dhaka, Bangladesh.

Pooja Lakhani
MSc, RD, CNSC - Founder & Consultant Dietitian, Poshan Mantra Pvt. Ltd, India.

CONTRIBUTORS

Rakhi Maiwall
Professor of Hepatology
Institute of Liver and Biliary Sciences, New Delhi, India.

Rajeev Khanna
Associate Professor, Pediatric Hepatology, ILBS, New Delhi, India.

Rajiv Mehta
Consultant Gastroenterologist, SIDS Hospital, Surat, India.

Randhir Sud
Chairman Institute of Digestive & Hepatobiliary Sciences,Medanta Hospital, Gurgaon, India.

Reshu Khandelwal
DM Gastroenterology, Advanced Endoscopy clinical fellow, Royal Liverpool University Hospital, LUHFT, United Kingdom.

Rimjhim Srivastava
Consultant, Pediatric Gastroenterology and Hepatology, Ekta Institute of Child Health, Swapnil Nursing Home, Petals Children's Hospital, Raipur, India.

Sarojini Parameswaran
Consultant Gastroenterologist and Hepatologist, Apollo Hospitals, Chennai, India.

Sanjay Chandnani
Assistant Professor, Department of Gastroenterology, TNMC & BYL Nair Charitable Hospital, Mumbai, India.

Samriddhi Poyekar
Assistant Professor, Department of Gastroenterology; B.J. Wadia Hospital, Mumbai, India.

Sanjay Nagral
Director, Dept of Surgical Gastroenterology, Jaslok Hospital and Research Centre, Mumbai, India.

Sanjiv Saigal
Principal Director & Head
Liver Transplant and Biliary Sciences, Gastroenterology, Hepatology & Endoscopy
Max Super Speciality Hospital, Saket, Max Hospital, Gurgaon, India.

Saurabh Mukewar
Consultant Gastroenterologist, Midas Hospital, Nagpur, India.

Seema Alam
Professor and HOD, Department of Pediatric Hepatology, Institute of Liver and Biliary sciences, New Delhi, India.

Sethu Babu
HOD Gastroenterology
krishna institute of medical sciences (KIMS), Hyderabad, India.

Shailesh Sable
Consultant Hepatobiliary, Pancreatic & Liver Transplantation Surgery, Apollo Hospital, Navi Mumbai, India.

Shalimar
Professor,
Dept of Gastroenterology, All India Institute of Medical Sciences, New Delhi, India.

CONTRIBUTORS

Shaji Marar
Consultant Vascular and Interventional Radiologist, Jaslok Hospital and research Centre, Mumbai, India.

Shamsher Chauhan
Assistant Professor
Department of Gastroenterology
Lokmanya Tilak Municipal Medical College and General Hospital, Mumbai, India.

Sheetal Mahajani
Director Hepatology,Transplant Hepatology, Sahyadri hospital, Pune, India.

Sheila Pillai
Associate Professor
Department of Obstetrics and Gynaecology
Sri Ramachandra Institute of Higher Education and Research, Chennai, India.

Shivani Deswal
Senior Consultant & Clinical Lead Pediatric Gastroenterology, Narayana Superspeciality Hospital, Gurgaon, India.

Shobna Bhatia
Professor and Head
Department of Gastroenterology
National Institute of Medical Sciences, Jaipur, India.

Showkat Ali Zargar
Director, Gastroenterologist. Bismillah Medical center, Srinagar, India.

S.P.Singh
Chairman
Kalinga Gastroenterology Foundation, Cuttack, India.

Srijaya S.
Professor
Dept of Gastroenterology
Medical College,
Thiruvananthapuram,
India.

Sunil Taneja
Professor (Associate) ,Department of Hepatology, Postgraduate Institute of Medical Education and Research, Chandigarh, India.

Swati Narurkar
Consultant Histopathologist & Cytologist, HFC Lab, Chembur. Special interest - GI & Liver pathology, Mumbai, India.

Swati Raju
Hepatologist and Liver Transplant Physician
Kauvery Hospital,
Vadapalani, Chennai, India.

Umadevi Malladi
Professor of Gastroenterology
Osmania Medical College,
Hyderabad, India.

Usha Dutta
Head,
Department of Gastroenterology
PGIMER
Chandigar, India.

Vaishali Solao
Head of Critical Care , Fortis Hospital, Mulund, Mumbai, India.

V. Jayanthi
Prof of Hepatology,
Sri Ramachandra Institute of Higher Education & Research (SRIHER), Chennai, India.

CONTRIBUTORS

Vibha Verma
Associate Director
Consultant Liver Transplant & HPB Surgeon, Max Super Specialty Hospital, Saket, New Delhi, India.

Vivek Saraswat
Professor and Head
Department of Hepatology, Pancreatobiliary Sciences and Liver Transplantation,
Mahatma Gandhi University of Medical Sciences and Technology, Jaipur, India.

Vineeta Bansal
Associate Professor & Head
Dept of Clinical Nutrition and Dietetics
Mahatma Gandhi Medical College & Hospital, Jaipur, India.

Yogesh Chawla
Former Director PGIMER Chandigarh, Former HOD, Department of Hepatology, PGIMER, Chandigarh, India.

Zaigham Abbas
Head, Department of Hepatogastroenterology, Dr. Ziauddin University Hospital, Clifton Karachi, Pakistan.

ARTISTS

SUKHADA THORAT
Patient coordinator, Children's Liver Foundation, Mumbai, India.

TANVI PALANDE
Patient

NIKITA SHAH
Patient

DALVINDER SINGH
Patient

NEERAJA P.S.
Young Artist

MOINAK SEN SHARMA
Pediatric Gastroenterologist, SGPGI, Lucknow, India

INDEX

FREQUENTLY ASKED QUESTIONS

ACUTE LIVER FAILURE

CONVENOR:

Madhumita Premkumar

MEMBERS:

Chetan Kalal
Swati Raju
Vaishali Solao

FAQs on Acute Liver Failure

1. What is Acute Liver Failure and how is it different from Acute Hepatitis ?
2. What are the Causes of Acute Liver Failure?
3. What are the symptoms of acute liver failure?
4. How is acute liver failure diagnosed?
5. What are the other conditions which can mimic acute liver failure?
6. How is acute liver failure treated?
7. Are there other specialised treatments in management of Acute Liver Failure?
8. When does the patient require a liver transplant?
9. Can acute liver failure be prevented?

SHIVRAM PRASAD SINGH
PRESIDENT

MAMUN-AL-MAHTAB
SECRETARY GENERAL

UNDER THE AUSPICES OF SAASL WOMEN IN HEPATOLOGY FORUM

AABHA NAGRAL
CHAIRPERSON

LUBNA KAMANI
CO-CHAIRPERSON

ROKSHANA BEGUM
MEMBER SECRETARY

SAMRIDDHI POYEKAR
FAQ's CO-ORDINATOR

Q What is Acute Liver Failure and how is it different from Acute Hepatitis?

A

- Acute liver failure (ALF) is a rare condition where a previously normal liver rapidly loses its ability to function following some injury The injury could be from infections like viral infections, drug or herb related.
- The liver rapidly fails and the patient presents with jaundice, bleeding tendency and change in mental status. These patients are not known to have previous liver disease. In contrast, chronic liver failure happens over a long period in patients with a known liver disease.
- Acute hepatitis is a condition in which there is swelling of the liver without affecting liver function presenting as loss of appetite, jaundice and pain in the belly.

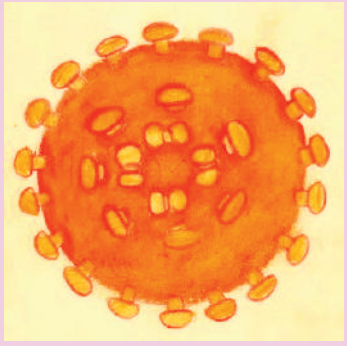
Q What are the Causes of Acute Liver Failure?

A

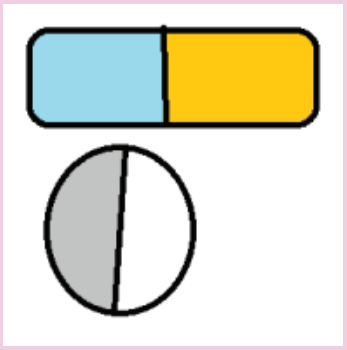
- Acute liver failure can be caused by viral hepatitis such as Hepatitis A virus (HAV), Hepatitis E virus (HEV), Hepatitis B virus infection (HBV) infection among other infectious agents.
- It can also be caused by taking medicines such as antitubercular drugs (medicines given to treat tuberculosis), antiepileptic drugs (medicines to treat seizure disorder), etc.
- Poisons like yellow phosphorus and rodenticide (rat poison) have been reported as a frequent cause of ALF in some parts of India.
- Autoimmune disease and Wilson's disease (occurs due to excessive copper accumulation in liver due to a genetic defect) can also cause acute liver failure.
- Some pregnant women who develop acute fatty liver of pregnancy or viral hepatitis can also present as ALF.

  In some cases, the cause for the disease is unknown.

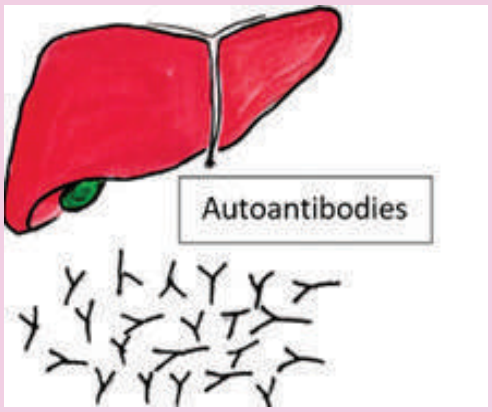
CAUSES OF ACUTE LIVER FAILURE

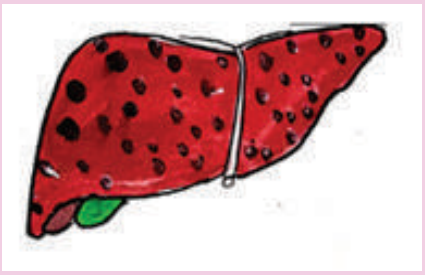


Hepatitis A,B,E

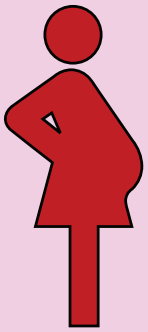


Medications like anti TB drugs, antiseizure drugs





Autoimmune hepatitis



Acute fatty liver of pregnancy

Poisons like rat poison

Q What are the symptoms of acute liver failure?

A If you have acute liver failure, you may have symptoms such as:

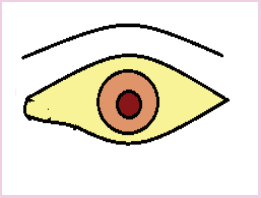
- Discomfort on your right side, just below your ribs
- Fatigue
- Loss of appetite
- Nausea, Vomiting
- Yellow discoloration of eyes and urine (Jaundice)
- Diarrhoea

As the disease gets worse, however, you may also become confused and extremely sleepy by which time you will be admitted in intensive care.

SYMPTOMS OF ACUTE LIVER FAILURE

Pain in abdomen

Nausea and Vomiting



Jaundice

Confusion, Disorientation and Coma

Q How is acute liver failure diagnosed?

A

- Acute liver failure is diagnosed based on history and examination and certain blood tests.
- Patients have jaundice, fatigue, and abdominal pain and change in mental alertness from subtle changes to coma.
- Liver function tests (LFTs) and prothrombin time are important tests of liver function. Prothrombin time measures your blood's ability to thicken (coagulate) and is very prolonged in patients of liver failure.
- Blood ammonia levels are raised.
- A CT or MRI of the brain may be done to look for brain swelling and checking the raised pressures in the eyes.

Q What are the other conditions which can mimic acute liver failure?

A

- In tropical countries like India, viral hepatitis due to hepatitis A and hepatitis E virus remain top causes for acute liver failure.
- In addition there are some other conditions which involve the liver and can mimic acute liver failure, but require different treatment.
- Examples of such diseases are Malaria, Dengue haemorrhagic fever, Leptospirosis, Scrub typhus etc.

Therefore jaundice simply means yellow eyes, urine and skin and there could be several liver diseases which cause jaundice.

Q How is acute liver failure treated?

A

Treatment for ALF depends on the underlying cause.

- If a drug has caused liver failure, it needs to be promptly withdrawn. An antidote called N-acetyl cysteine (NAC) has been used in overdose of paracetamol causing liver failure . It is also sometimes helpful to people with acute liver failure due to other causes.
- If autoimmune hepatitis is causing liver failure, steroids may be used to treat it.
- In general, people with acute liver failure are often treated in the intensive care unit of a hospital in a facility that can perform a liver transplant, if necessary.
- In all cases, supportive care and monitoring are essential for ALF. This may include medication to manage symptoms like low sugars, bleeding, infections, brain swelling etc. Intravenous fluids and nutrition, and vital signs and liver functions are closely monitored until recovery is achieved.

Q Are there other specialised treatments in management of Acute Liver Failure?

A

- Plasma exchange, also known as plasmapheresis, is a procedure used in the management of some patients of ALF.
- It involves the removal of waste products, and substances responsible for causing inflammation. These are responsible for altered function of various organs (Multi-organ dysfunction). Fresh plasma (blood component which contains clotting factors) is used to replace the blood removed.
- The decision to use plasma exchange in ALF patients is made on a case-by-case basis by a multidisciplinary team of physicians and critical care specialists.
- Liver transplantation is considered the best treatment option for patients with ALF who fail to respond to medical treatment with a good success rate.

Q When does the patient require a liver transplant?

A

- Liver transplantation is a potential treatment for acute liver failure (ALF) in cases where other medical interventions have failed and chances of survival are low without a transplant
- A liver transplant can replace the failing liver with a healthy liver from a deceased (a brain dead person) or living donor. In some cases, a living donor may donate a portion of their liver to the recipient, which can grow back to full size in both the donor and recipient over time.It is a complex surgery with risks, but it can be life-saving for those who qualify for the procedure.

Q Can acute liver failure be prevented?

A

- You can prevent some of the underlying causes of acute liver failure. To avoid drug overdose, always follow the directions on the label when taking a medication. Talk with your healthcare provider if you have any questions.
- Avoid over the counter medications like pain killers or excess paracetamol.
- Avoid self medication with ‘health or fitness supplements’. Read product labels for constituents carefully. Please be careful about ‘liver tonics’ or ‘blood purifiers’, as they may interact with other medications and may not be safe for you.
- Discuss safety and use of medications like herbal medicines, especially if you are already taking some medications to avoid interactions and inadvertent liver damage.
- You can reduce your risk of getting hepatitis B and C by ensuring safe practices while receiving injections, tattooing, shaving and following barrier contraception if the partner is infected with hepatitis B or C.
- Ensuring use of clean water, clean hands and food hygiene can prevent food borne viral hepatitis.
- Vaccines are available to prevent hepatitis A and B.

FREQUENTLY ASKED QUESTIONS

ACUTE VIRAL HEPATITIS A & E

CONVENOR:
Sethu Babu

MEMBERS:
Gayathri Gopalakrishnan
Pravin Rathi

FAQs on Acute Viral Hepatits A & E

1. What is viral hepatitis? What are the common viruses causing viral hepatitis in India? Does jaundice and viral hepatitis mean the same?
2. What are the two types of viral hepatitis? Is it necessary to differentiate the illness caused by these viruses?
3. What is the difference between acute viral hepatitis A and E?
4. How does one get infected with the hepatitis A and E virus?
5. What symptoms would I have if I am suffering from viral hepatitis?
6. How will my hepatitis be diagnosed?
7. What is the treatment for viral hepatitis? Do all patients with acute viralhepatitis need hospitalization, If so when?
8. What are the most important complications of acute viral hepatitis and management ?
9. How can I protect myself from hepatitis A and E without vaccine?
10. Are vaccines available to prevent these viruses?

SHIVRAM PRASAD SINGH
PRESIDENT

MAMUN-AL-MAHTAB
SECRETARY GENERAL

UNDER THE AUSPICES OF SAASL WOMEN IN HEPATOLOGY FORUM

AABHA NAGRAL
CHAIRPERSON

LUBNA KAMANI
CO-CHAIRPERSON

ROKSHANA BEGUM
MEMBER SECRETARY

SAMRIDDHI POYEKAR
FAQ's CO-ORDINATOR

Q What is viral hepatitis? What are the common viruses causing viral hepatitis in India? Does jaundice and viral hepatitis mean the same?

A

- Hepatitis is inflammation (swelling) of the liver which can occur from various causes like infections (viruses, bacteria, spirochete, protozoa), medications, alcohol use, drugs, toxins.
- Several viruses can cause viral hepatitis. In India, the most common causes of viral hepatitis are Hepatitis A and E due to food and water contamination and Hepatitis B virus and Hepatitis C virus due to blood contamination.
- Jaundice is a symptom (eg running nose in respiratory infection) which may be present in viral hepatitis and only means yellowish discoloration of the eyes whereas viral hepatitis is a disease.
- Neither all patients with jaundice have viral hepatitis nor is jaundice seen in all patients with viral hepatitis.

Q What are the two types of viral hepatitis? Is it necessary to differentiate the illness caused by these viruses?

A

- Viral hepatitis may be either
  - ✓ Acute when the symptoms are abrupt and usually last for 3 -6 months
  - ✓ Chronic when the illness lasts for more than 6 months
- It is definitely necessary to differentiate the disease caused by the different viruses because the transmission, clinical presentation, complications, prognosis and prevention are different.
- Hepatitis A is usually a short-term infection, more in children. Adults are usually immune and it does not become chronic.
- In India E virus infection causes epidemics (affects large number of people in short period of time) and has more serious effect in pregnant women. India has less severe disease.
- Both do not really require specific treatment.

Q What is the difference between viral hepatitis A and E?

A

PARAMETRS	HEPATITIS A	HEPATITIS E
Incubation Period (duration between exposure and illness).	Short 20-50 days	Short 20-50 days
Mode of spread	Feco-oral	Feco-oral
Duration of Illness	2-3 weeks	2-3 weeks
Chronicity	No	Usually not but may occur in some
Acute and Acute on Chronic liver failure	Yes	Yes
Prevention	Childhood vaccination	No effective vaccine

Q How does one get infected with the Hepatitis A and E virus?

A

- Hepatitis A can be spread with contaminated food, from close contact with an infected person, and can even become focal or large epidemics within a community with food and water contamination.
- Hepatitis A is in a way contagious, and the virus can even spread before the patient actually reports sick.
- Contamination of food with the hepatitis A virus can happen at any point: growing, harvesting, processing, handling, and even after cooking. Contamination of food and water happens more often in countries with inadequate sanitation and hygiene.

- Foodborne outbreaks have occurred due to people eating contaminated fresh and frozen imported food products.
- Epidemics are also reported when water supply gets contaminated.
- Hepatitis E virus also has similar routes of spread and is responsible for epidemics.

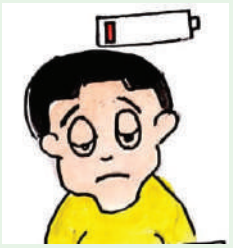
Q What symptoms would I have if I am suffering from viral hepatitis?

A

- Not everyone with hepatitis A and E has symptoms. Many patients have no symptoms or have very mild symptoms which may not be noticed by the patient as seen in many epidemics.
- Adults are more likely to have symptoms than children.
- Symptoms usually appear 2 to 4 weeks after getting infected. Symptoms usually last less than 6 to 8 weeks although some can remain ill for as long as 6 months.
- The symptoms of acute Hepatitis A and E include:
  - ✓ Prodromal illness (Tiredness, malaise) with fever
  - ✓ Nausea, vomiting, loss of appetite followed by yellow urine and eyes
  - ✓ Discomfort/ pain in abdomen
  - ✓ As time progresses you may develop itching and clay-coloured stools.

SYMPTOMS OF ACUTE VIRAL HEPATITIS A AND E

Fever



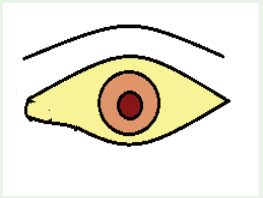
Fatigue

Loss of Appetite

Nausea and vomiting

Dark urine, pale stools, diarrhea

Pain in belly



Jaundice

Q How will my hepatitis be diagnosed?

A

- Diagnosis often can be made easily based on symptoms and examination of the patient. But it is preferable to do certain tests and the doctor will advice the following:

	INVESTIGATIONS	REMARKS
Blood Tests	Complete blood count	To check for anemia
	Liver function tests, prothrombin time	To check liver function and severity of liver injury. May require serial testing
	Renal function tests	To check for complications
	Viral Markers: Anti HAV IgM, anti HEV IgM	Antibody to the specific virus indicates etiology
Imaging	Ultrasound of abdomen	To exclude gall bladder disease, gall stones, liver abscess

Q What is the treatment for viral hepatitis Do all patients with acute viral hepatitis need hospitalization, If so when?

A

- Interestingly no treatment is required in most patients as it is a self limiting disease. Treatment is suggested for symptoms such as nausea, vomiting, belly pain.
- Treating with other forms of medicine called as "Complementary Alternative Medicine" may do more harm than good. Avoid unnecessary medications including paracetamol, antibiotics
- There is no role of any anti - viral therapy except in special situations which will be decided by doctors.
- Rarely intravenous fluids are administered for temporary support. Vitamins may be prescribed as a supportive medicine.
- Hepatitis in a pregnant woman can turn serious and hence needs immediate and close monitoring by both your Gastroenterologist and Obstetrician.
- Dietary advice to consider adequate calorie intake despite the presence of anorexia, is recommended
- Regular home cooked food that is palatable should be eaten. There is no need to restrict oil or turmeric or milk as long as these food are palatable. Sugarcane juice is a good source of calories and is popularly used in the treatment of hepatitis. It is often not clean as house flies are often seen in the vicinity and is therefore avoided.
- All patients with acute viral hepatitis need not be hospitalized and can be managed at home.
- The reasons for hospitalization include:
  - ✓ persistent vomiting
  - ✓ fever
  - ✓ gastrointestinal bleed
  - ✓ prolonged poor appetie
  - ✓ decreased urine output
  - ✓ abdominal distension and swelling of legs
  - ✓ altered sensorium
  - ✓ deepening jaundice and severe itching

Q What are the most important complications of acute viral hepatitis and management?

A

- In Hepatitis A and E virus infection the majority will recover completely.
- About 1 % of HAV and HEV may progress to acute liver failure or liver failure in a patient with pre existing liver disease (acute on chronic liver failure) and may require intensive care and Liver Transplantation.

Q How can I protect myself from hepatitis A and E without vaccines?

A

- Practicing good hand hygiene — including thoroughly washing hands after using the toilet, changing diapers, and before preparing or eating food plays an important role in preventing the spread of hepatitis A.
- Consuming food and water in a hygienic way (washing vegetables and fruits, cooking food in clean containers, drinking boiled water) and from hygienic places is paramount to preventing these infections.
- You can lower your risk for HEV infection by drinking only purified/ clean water when visiting countries where hepatitis E is common and by avoiding raw or undercooked meat. In South Asian countries where Hepatitis E is common, drinking boiled and cooled water is the safest.

PREVENTION OF HEPATITIS A AND E

Washing fruits and vegetables

Drinking clean water

Clean dishes

Hand washing

Q Are vaccines available to prevent these viruses?

A Hepatitis A can be prevented by vaccination. Currently the vaccine against Hepatitis E is not available for public use.

The following people should be vaccinated against hepatitis A:

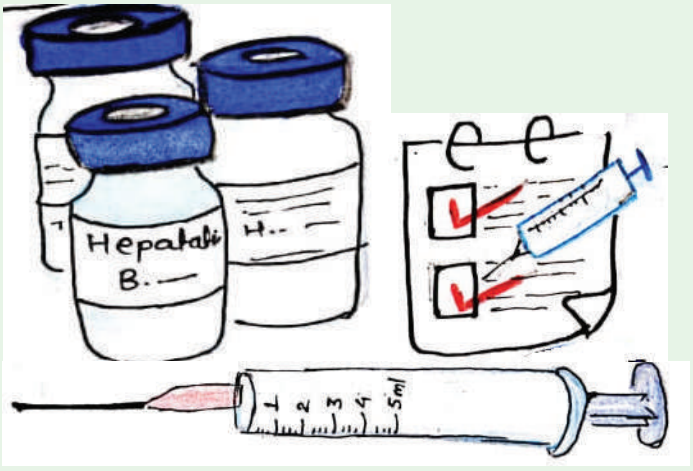
- Children
  - ✓ All children aged 12-23 months
  - ✓ All children and adolescents 2-18 years of age who have not previously received hepatitis A vaccine (known as "catch up" vaccination)

- Adult
  - ✓ Pregnant women at risk for hepatitis A or at risk for severe outcome from hepatitis A infection
  - ✓ Any person who requests vaccination (VISA requirement in some countries)
  - ✓ People with chronic diseases like liver disease

There are two types of hepatitis A vaccines:

- The first type, the single-dose hepatitis A vaccine, is given as two shots, 6 months apart, and both shots are needed for long-term protection against hepatitis A.

- The second is a combination vaccine that protects people against both hepatitis A and hepatitis B. It can be given to anyone 18 years of age and older. It is given as three shots over 6 months. All three shots are needed for long-term protection for both hepatitis A and hepatitis B.



FREQUENTLY ASKED QUESTIONS

ALCOHOL RELATED LIVER DISEASE

CONVENOR:

Shobna Bhatia

MEMBERS:

Aditya Kale
Samriddhi Poyekar
Umadevi Malladi

FAQs on Alcohol Related Liver Disease

1. What is alcohol related liver disease?
2. How does alcohol affect my liver?
3. What is the safe amount of alcohol which I can consume? Can I consume toddy instead of beer or whiskey to prevent alcohol related liver disease?
4. What are my chances of developing alcohol related liver disease if I consume alcohol in excess? How can I reduce the risk of developing Alcohol related liver disease?
5. What are the symptoms of alcohol related liver damage?
6. How is alcohol related liver disease diagnosed by my doctor?
7. I have alcohol related liver disease, what complications I can develop?
8. I have been diagnosed with alcoholic cirrhosis. What are the emergency situations when I should contact my doctor immediately.
9. What are the available treatment options for patients with alcohol related liver disease? Can my liver disease reverse?
10. Can alcohol related liver disease be prevented? How do I maintain alcohol abstinence? Are there any support groups which may help in stopping alcohol?

SHIVRAM PRASAD SINGH
PRESIDENT

MAMUN-AL-MAHTAB
SECRETARY GENERAL

UNDER THE AUSPICES OF SAASL WOMEN IN HEPATOLOGY FORUM

AABHA NAGRAL
CHAIRPERSON

LUBNA KAMANI
CO-CHAIRPERSON

ROKSHANA BEGUM
MEMBER SECRETARY

SAMRIDDHI POYEKAR
FAQ's CO-ORDINATOR

Q What is alcohol related liver disease?

A It is the damage to the liver and its function caused by consumption of alcohol. The chances of developing liver damage depend on how long and how much quantity of alcohol one consumes.

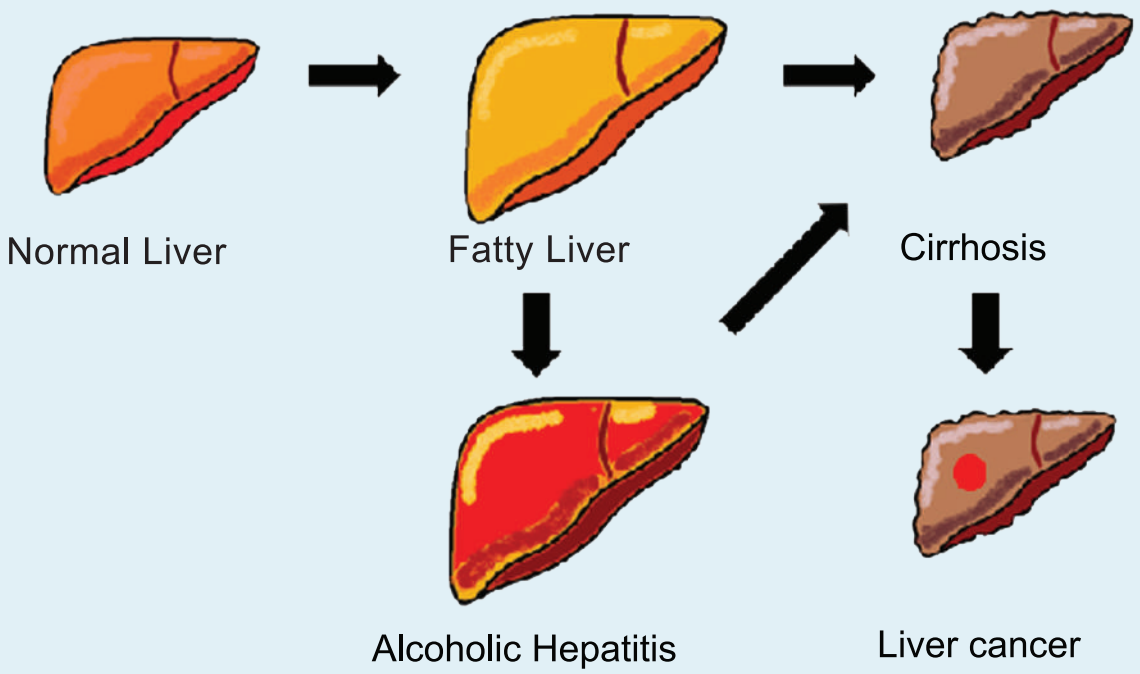
Q How does alcohol affect my liver?

A The alcohol consumed by you is broken down by the liver and in the process your liver can undergo swelling and scarring. It can get damaged if excessive alcohol is consumed for prolonged period of time.
Alcohol consumption results in following types of liver diseases:

- **Fatty liver:** It occurs due to accumulation of fat in liver cells. Almost everyone who drinks alcohol even in small quantities develop fat deposition in their liver cells. This is called fatty liver and is reversible on stopping alcohol. If the alcohol consumption is continued after development of fatty liver, one develops further liver damage called liver cirrhosis.

- **Liver cirrhosis:** Prolonged and repeated consumption of alcohol results in irreversible liver damage called cirrhosis in which the normal liver gets replaced by scarred tissue. This scarring of liver is permanent. In the initial stages cirrhosis can be silent but it is progressive and can develop complications as the liver damage continuous from alcohol consumption.

- **Alcoholic hepatitis:** It is severe damage to liver where the liver cells become swollen and are destroyed. It is caused by binge drinking but can also be seen in prolonged heavy drinkers. Not everyone who consumes alcohol develops alcoholic hepatitis but it is a very serious condition and can be life threatening also. This condition may not reverse even after alcohol consumption stops.



Q What is the safe amount of alcohol which I can consume? Can I consume toddy instead of beer or whiskey to prevent alcohol related liver disease?

A 1 unit of alcohol is equivalent to 10 gm of alcohol which is equivalent to 30ml of hard liquor (whisky, vodka, gin, rum, tequila), 150ml of wine and 350 ml of beer.

1 Standard drink = 10 gm = 350 ml of Beer = 150ml of wine = 30ml of Spirits

There is no minimal amount of alcohol which can be consumed safely without any health-related side effects. Alcohol consumption less than 14units/week for men and less than 7 units/week for women is associated with low risk of developing liver disease.

However, alcohol consumption even in low amount for long duration of time puts you at risk for liver damage. Alcohol intake also increases the risk of various cancers in the body and this risk begins at consumption of as low as 1 unit or 10gm/day.

Locally prepared alcohol beverages such as toddy, lugdi, urak, apo, mahua etc are also injurious to the liver. They are also likely to be adulterated with toxic alcoholic preparations and making them even more dangerous for consumption.

Q What are my chances of developing alcohol related liver disease if I consume alcohol in excess? How can I reduce the risk of developing Alcohol associated liver disease?

A Alcohol associated liver disease may not be seen in all heavy drinkers. The risk of developing alcohol induced liver disease depends on various factors which are:

- The amount and duration for which one consumes alcoho are the most important risk factors. Prolonged and heavy alcohol consumption is associated with highest risk for developing liver damage.
- Binge drinking (intake of more than 4-5 drinks in 2 hours) also increases the risk of liver damage.
- Women are more likely to develop liver damage compared to men at same amount of alcohol consumed.
- Certain genes in your body also puts you at increased risk of liver damage due to alcohol.
- If you are overweight, diabetic, or have increased blood cholesterol level, the chances of fat accumulation in your liver (fatty liver) increases. Drinking alcohol when you have a pre-existing fatty liver further increases the damage to your liver.
- Infections of liver like Hepatitis B and C and presence of other liver diseases increases the risk of liver damage wit alcohol intake.

Q What are the symptoms of alcohol related liver damage?

A

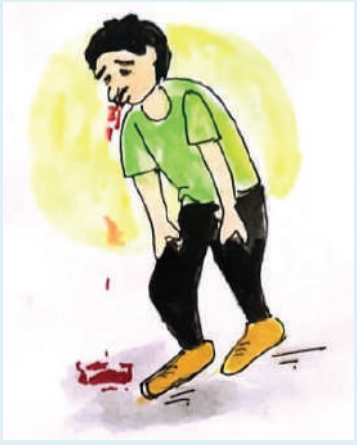
- Symptoms of Alcohol associated liver disease depend upon the degree of liver damage.
- In the early stages of fatty liver one can be asymptomatic and can also have normal blood tests. Pain/discomfort below the right rib cage, tiredness, loss of appetite, decreased food intake, nausea can be present in those with fatty liver.
- In the early stages of cirrhosis, you may have no symptoms but your doctor can detect the liver damage based on abnormal liver function tests and ultrasonography of abdomen.
- Symptoms of severe and advanced liver damage (alcoholic hepatitis and cirrhosis) include:
  - ✓ Weakness and tiredness, reduced food intake and aversion to food.
  - ✓ Yellow eyes and urine – Jaundice.
  - ✓ Fluid accumulation in your tummy.
  - ✓ Swelling of feet.
  - ✓ Blood in vomitus or black coloured stools.
  - ✓ Altered sleep, confusion, inappropriate behaviour, disorientation and coma.
  - ✓ Malnutrition with deficiency of various vitamins and minerals.
  - ✓ Infections due to weakened immunity.

Jaundice

Pain in abdomen

Weight loss

Fatigue



Blood in vomitus

Ascite
(fluid in belly)

Q How is alcohol related liver disease diagnosed by my doctor?

A Your doctor will ask history regarding the amount and duration of alcohol intake and perform physical examination. Your family members may also be enquired about your drinking habits.

Your doctor will then advise following tests:

- Blood tests called liver function tests/ INR which give information regarding the functional capacity of your liver.
- Ultrasonography/ CT or MRI scan of abdomen which shows the change in shape (enlarged in early stages and small sized with advanced liver damage) and appearance (nodular) of liver due to damage from alcohol. It can also detect complications of severe liver damage like fluid in your belly, liver cancer.
- Liver biopsy- It is not done in all those who have alcohol related liver disease. Your doctor may advise you a liver biopsy if any other coexisting or alternative cause of liver damage is suspected.

Q I have alcohol related liver disease, what complications can I develop?

A As the liver gets progressively damaged by prolonged alcohol intake, it undergoes permanent scarring. This reduces the ability of liver to function to its full capacity causing various complications. The complication seen are:

- **Portal hypertension and varices** - When the liver undergoes severe scarring, it makes the blood to move through it difficult. This causes increase in the pressure of blood in the vein which carries blood from intestine to liver (portal vein) causing portal hypertension. This eventually leads to formation of dilated veins (varices) in your food pipe which may burst and cause vomiting of blood or black coloured stools.

- **Ascites** - build-up of fluid in your tummy. This may also be associated with swelling of feet and decrease in urine output.

- **Hepatic encephalopathy** – The liver normally works to remove toxic substances from your body. In severe liver damage, your liver is unable to remove the toxins which then enter the brain and can cause increased sleepiness, confusion, anxiety, inappropriate behaviour, disorientation and even coma.
- **Liver cancer**- Liver damage over many years also increases the risk of developing liver cancer. Your doctor will advise you regular check-up in the form blood test (Alpha feto protein – a tumor marker) and ultrasonography of abdomen for timely detection of liver cancer. These tests need to be done every six months irrespective of symptoms.

- **Malnutrition** – Calories from alcohol are empty as they do not have any nutritive value. You can therefore develop protein, vitamin and mineral deficiency. This causes you to lose your muscle mass, muscle strength.

- **Infection** - Damage to the liver can weaken your immune system. This can make your body more vulnerable to various infection. You need to take vaccines for Hepatitis B and Hepatitis A to protect your liver from damage due to these infections.

Q I have been diagnosed with alcoholic cirrhosis. What are the emergency situations when I should contact my doctor immediately?

A Patients with alcoholic related hepatitis and liver cirrhosis are likely to develop few complications when they need to contact their doctor immediately. These complications include:

- Occurrence of abdominal distension due to fluid accumulation in the tummy for the first time or worsening of pre-existing abdominal distension.

- Reduced urine output due to kidney damage.
- Blood in vomitus (hematemesis) or black tarry stools (melena).
- Increased sleepiness, confusion, anxiety, inappropriate behaviour, disorientation.
- Symptoms like tremors, excessive sweating, agitation if alcohol has been stopped recently.

Q What are the available treatment options for patients with alcohol related liver disease Can my liver disease reverse?

A

- The treatment depends on the degree of liver damage. The most important and foremost treatment is to stop alcohol intake as it will prevent further liver damage. Stopping alcohol reverses fatty liver and may improve function of liver in those with cirrhosis.
- In fatty liver stopping alcohol, a healthy nutritious diet and exercise reverses the liver damage.
- Some patients with alcoholic hepatitis and complications of cirrhosis will be advised admission to hospital and even in intensive care unit (ICU). In case of severe damage to liver in alcoholic hepatitis the risk of dying is around 50% at the end of 1 month. In some cases, the severe liver damage may not improve with medicines and you may be advised liver transplantation.
- Those with cirrhosis need to follow up with your doctor regularly. Your doctor will monitor you for development of any complications of cirrhosis and treat you for the same. If there is fluid in your belly, your doctor will advise you salt restriction to less than 5gm/day.

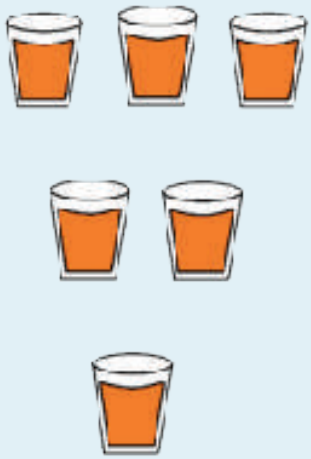
- In addition, for complications of liver disease your doctor will prescribe you medicines (diuretics) to help remove this excess fluid through your urine. You may also be advised removal of this fluid with the help of a small needle if the medicines fail to reduce it. Your doctor will also advise endoscopy at regular intervals to keep a check on dilated veins in your food pipe and ultrasound of abdomen to detect complications of liver damage including liver cancer. Your doctor will examine you regularly to see for development of hepatic encephalopathy and advise you to avoid constipation.

- In all stages of alcoholic liver disease ensuring eating of clean, freshly prepared calorie and protein rich food with regular exercise is essential. You also need to avoid any over the counter medication, alternative medication (herbal/ayurvedic) as they may further damage your liver. Please consult your doctor before taking any painkiller/ antibiotics/sleeping medication.

Q Can alcohol related liver disease be prevented? How do I maintain alcohol abstinence?Are there any support groups which may help in stopping alcohol?

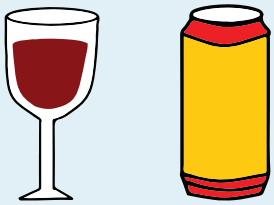
A The only way to prevent developing alcohol associated liver disease is to avoid alcohol completely. Drinking less than 2 units/day for males and less than 1 unit/day for females is considered low risk for liver damage. However, consumption of even this small amount of alcohol for prolonged periods can cause liver damage in few individuals and also increase the risk for cancer of various organs in the body.

STRATEGIES FOR TAPERING ALCOHOL



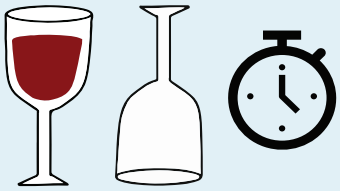
Gradually reducing the number of your drinks

Make weaker drinks with less quantity of alcohol



Change from your preferred alcoholic drink to one you don't like

Substitute a glass of water between alcoholic drinks



Space out the length of time between each drink

If you are finding difficulty in stopping alcohol intake, you may consult your doctor who can prescribe you medicines to decrease the craving for alcohol. In addition, your doctor may advise to consult a psychologist or join alcohol support groups like alcoholic anonymous which are widely available to help you stop alcohol.

ALCOHOLIC ANONYMOUS

FREQUENTLY ASKED QUESTIONS

ASCITES IN LIVER CIRRHOSIS

CONVENOR:

Anil Arora

MEMBERS:

Ashok Choudhury
Lata Prasad
Rajiv Mehta

FAQs on Ascites in Liver Cirrhosis

1. What is cirrhosis of the liver and why does it occur? What is ascites?
2. What are the symptoms of ascites?
3. What are other complications with ascites?
4. Is it always necessary to take out this fluid and do tests? If the fluid is taken out once, will it be required repeatedly?
5. How will my ascites be treated?
6. How can I monitor response to treatment?
7. What is spontaneous bacterial peritonitis (Infection in ascites)? How do I know that I have this infection?
8. Can ascites be permanently cured? What are the options if my ascites is not responding to medicines?

SHIVRAM PRASAD SINGH
PRESIDENT

MAMUN-AL-MAHTAB
SECRETARY GENERAL

UNDER THE AUSPICES OF SAASL WOMEN IN HEPATOLOGY FORUM

AABHA NAGRAL
CHAIRPERSON

LUBNA KAMANI
CO-CHAIRPERSON

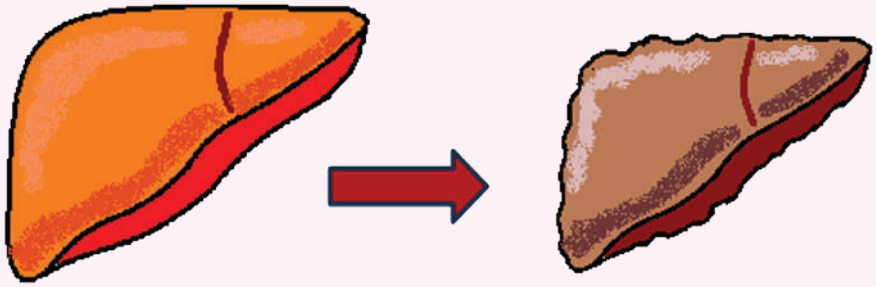
ROKSHANA BEGUM
MEMBER SECRETARY

SAMRIDDHI POYEKAR
FAQ's CO-ORDINATOR

Q What is cirrhosis of the liver and why does it occur? What is ascites?

A

- Cirrhosis is scarring of normal liver also called end stage liver disease. Liver cirrhosis is irreversible (Permanent). This irreversible damage is a result of slow and long-term injury of liver. The common disease-causing liver cirrhosis are long term alcohol use, Hepatitis B, Hepatitis C, Nonalcoholic fatty liver disease. The other less common disease includes autoimmune hepatitis, Wilson's disease. These diseases injure normal liver cells, leads to cell death and inflammation and repair by fibrosis (Scarring).



Normal Liver **Cirrhotic liver**

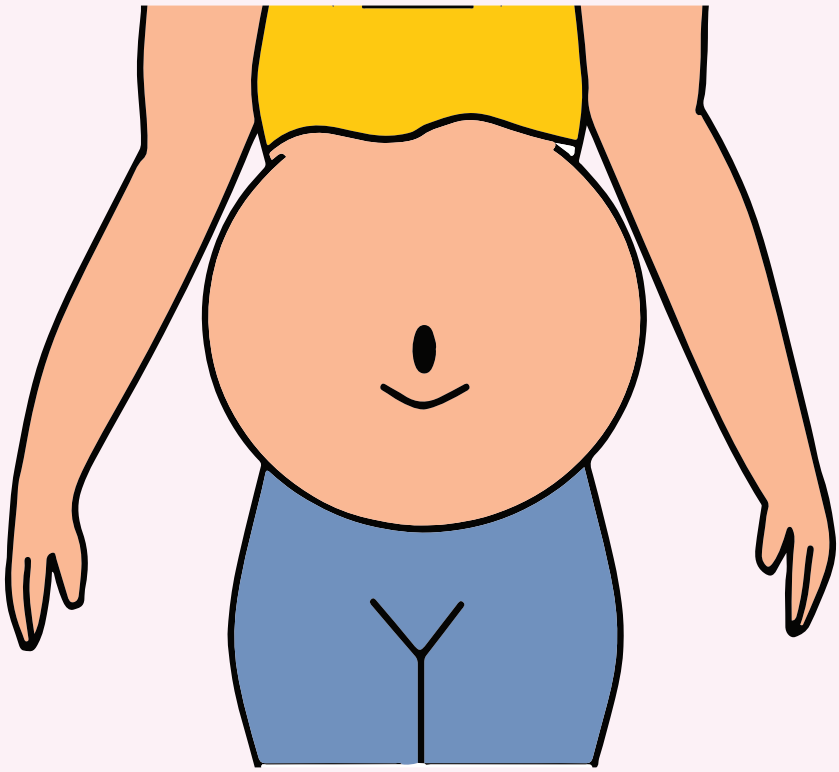
- Scarring of liver tissue decreases blood flow through liver and leads to increase pressure in portal vein (Blood vessel carrying blood from intestine to liver to process nutrients, drugs and toxins). This liver damage and increase in portal vein pressure ultimately result in fluid accumulation in abdomen called ascites. Initially fluid gets collected in spaces between abdominal organs.

- Conditions other than cirrhosis, that can lead to ascites include:
  - ✓ Congestive heart failure
  - ✓ Kidney failure
  - ✓ Cancers of the other organs
  - ✓ Infections like tuberculosis

Q What are the symptoms of ascites?

A The main symptoms of ascites are a large belly and rapid weight gain. Other symptoms include:

- Swelling in your ankles
- Difficulty in breathing
- Digestive issues, such as bloating, abdominal pain, loss of appetite, indigestion and constipation
- Back pain
- Difficulty sitting
- Fatigue

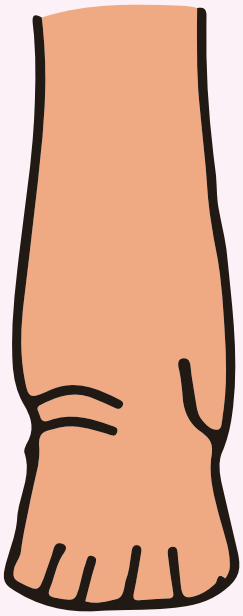


Ascites (build up of fluid belly)

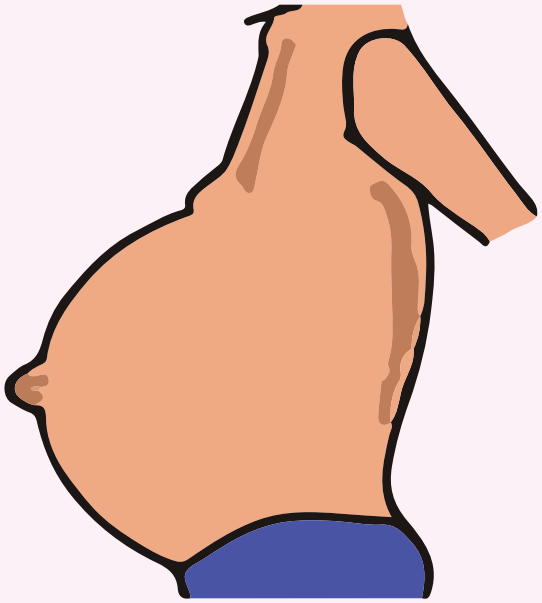
Q What are other complications with ascites?

A Frequent complications noted with ascites are:

- Swelling of foot (pedal edema)
- Kidney injury (decrease urine output, rise in serum creatinine)
- Migration of fluid in chest (Hydrothorax)
- Umbilical hernia (protubing belly button)
- Low sodium (hyponatremia)
- Infection in ascitic fluid (spontaneous bacterial peritonitis)



Swelling of leg



Umbilical hernia

Q Is it always necessary to take out this fluid and do tests. If fluid is taken out once, will it be required repeatedly?

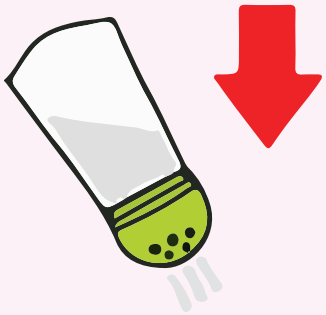
A

- Yes, it is necessary to take out fluid with a small needle and send it to the laboratory when diagnosed for the first time. It will confirm that the fluid is due to liver cirrhosis only and if there is infection in the fluid.
- Fluid removal may be required when your doctor suspect infection in fluid or if the fluid is not decreasing with medicines given by your doctor.

Q How will my ascites be treated ?

A

- Treatment of ascites includes salt restriction in diet, Diuretics (medicines removing excess fluid and salt by increasing urine output) and treatment of disease-causing liver injury like stopping of alcohol use, drugs for hepatitis B and C.
- Salt restriction is important. It usually is recommended to take 2 gm of sodium which is equal to 5 gm of table salt. The patient is asked to keep the salt aside and to not use any salt while cooking. Normal food contains enough salt and even a complete no salt diet is an option. Salt substitutes in the form of sugar
(for non-diabetics) black pepper, lemon juice, tamarind juice can be used to improve the taste of food.



RESTRICT YOUR SALT INTAKE TO 5GM OF TABLE SALT EVERYDAY

- Avoid highly salted food like pickles, papad, bakery products, ketchups, chips, salted biscuits, cheese, canned, processed and packed food.
- Diuretics drugs frequently used are furosemide or torsemide in combination with spironolactone. These drugs affect balance of sodium and potassium and kidney function. So, while being on these drugs monitoring of sodium, potassium and kidney function is need. These drugs can also cause dehydration, confusion, muscle cramps and hence regular follow up with your doctor to monitor these side effects is essential.
- Some time other medication like Midodrine may be added for better response, in difficult to treat ascites

Q How can I monitor response to treatment?

A

- To know treatment response one can, monitor weight once or twice a week. If you are losing more than two kg weight in a week, it is appropriate. If your weight loss is less than two kg in week, you need to check on your salt intake and consult your doctor to modify your diuretics medicine.
- If ascites is not improving with medicines then periodic removal of large amount of fluid along with albumin injection may be required.

Q What is spontaneous bacterial peritonitis (Infection in ascites)? How do I know that I have this infection?

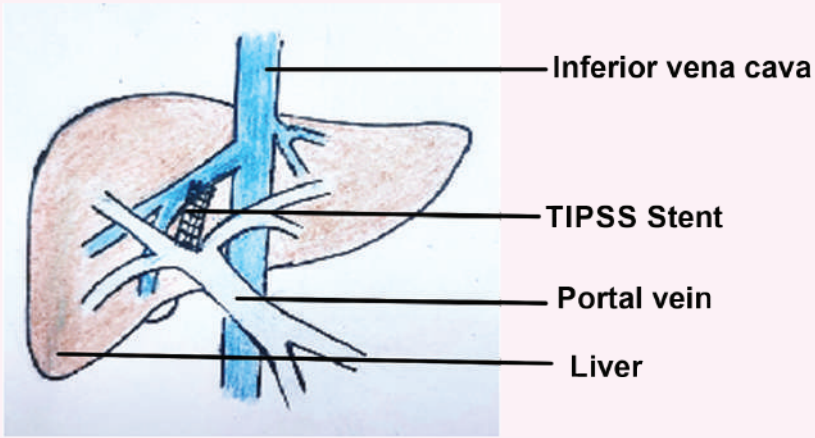
A

- It is a bacterial infection in accumulated fluid. It is seen in 3% of outdoor patients and up to 20% of hospitalized patient with ascites and cirrhosis.
- You may have symptoms like fever, fatigability, malaise or pain in the belly or loose motions. Sometimes it can be totally without any symptoms or is suspected by your doctor on the basis of worsening of laboratory reports like rise in creatinine or abnormalities in liver function test.

Q Can ascites be permanently cured? What are the options if my ascites is not responding to medicines?

A

- The only permanent cure is liver transplantation. Here the damaged liver is replaced with healthy liver either from live donor or deceased (brain dead) donor.
- Other possible treatment for ascites which is not improving with medications is TIPS (Trans jugular Intrahepatic Portosystemic Shunt). A stent is placed across the liver, which allow normal blood flow from portal vein to the heart. So, pressure in portal vein will decrease and hence fluid accumulation will also go down but medications still can be required. This can be offered to only selective patients.
- If none of the above is possible, a repeated large volume fluid removal (usually once in two weeks) with albumin infusion is required.
- It is recommended to consult a centre with facility for liver transplant once ascites becomes difficult to treat.



TIPSS PROCEDURE

FREQUENTLY ASKED QUESTIONS

AUTOIMMUNE HEPATITIS

CONVENOR:
Prabha Sawant

MEMBERS:
Alisha Chaubal
Shamsher Chauhan
Sheetal Mahajani

FAQs on Autoimmune Hepatitis

1. What is Autoimmune hepatitis? What are the symptoms of auto immune hepatitis?
2. How do I know that I have autoimmune hepatitis? Is it necessary to do a liver biopsy?
3. I have been diagnosed with autoimmune hepatitis? How will I be treated?
4. What medications will I be given for treatment of this disease.? Do they have any sideeffects?
5. Do I need any regular tests to monitor side effects of the medicines?
6. How long do i need to take the medicines?
7. Can this disease come back (relapse) if medicines are stopped?
8. What can I eat if I have this disease?
9. What complications of autoimmune hepatitis am I likely to face?
10. I have been diagnosed with autoimmune hepatitis. Am I likely to suffer from other autoimmune diseases?

SHIVRAM PRASAD SINGH
PRESIDENT

MAMUN-AL-MAHTAB
SECRETARY GENERAL

UNDER THE AUSPICES OF SAASL WOMEN IN HEPATOLOGY FORUM

AABHA NAGRAL
CHAIRPERSON

LUBNA KAMANI
CO-CHAIRPERSON

ROKSHANA BEGUM
MEMBER SECRETARY

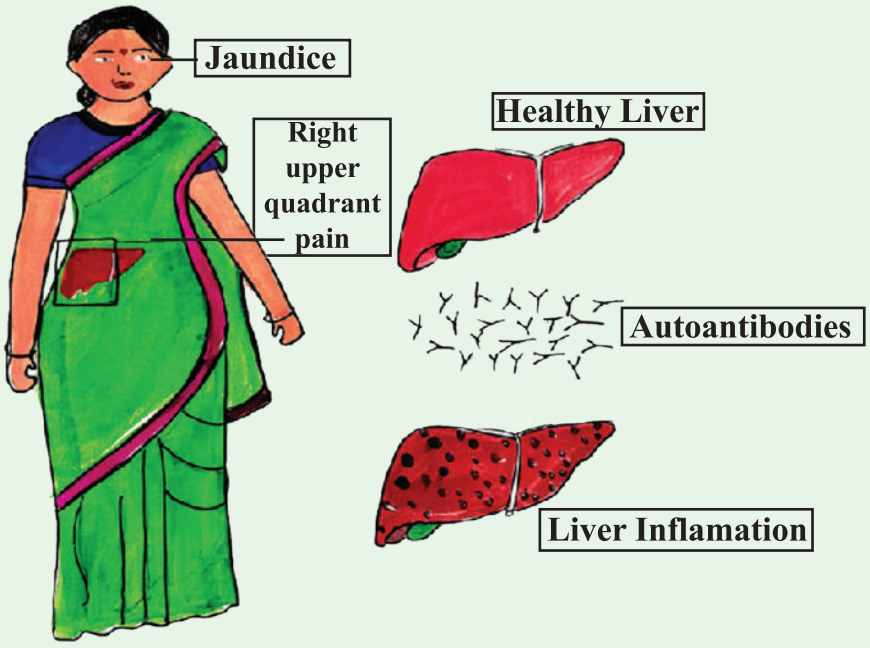
SAMRIDDHI POYEKAR
FAQ's CO-ORDINATOR

Q What is Autoimmune hepatitis? What are the symptoms of autoimmune hepatitis?

A Autoimmune hepatitis is a condition where the body's immune system attacks the liver, causing inflammation (swelling) and damage. If left untreated, it can lead to serious liver damage and even liver failure. The condition should be diagnosed and treated as soon as possible.

Some common symptoms of autoimmune hepatitis include fatigue (tiredness), abdominal pain, joint pains, jaundice (yellowing of the skin and eyes), and itching. Menstrual irregularities and even stopping of menstruation (amenorrhea) can be seen in females. Many times, the disease may not cause any symptoms and will be suspected by your doctor on the basis of abnormal liver function tests. It tends to be more common in females though males can also be affected.

Liver damage caused by antibodies in autoimmune hepatitis



Liver damage caused by antibodies in autoimmune hepatitis

Q How do I know that I have autoimmune hepatitis? Is it necessary to do a liver biopsy?

A Your doctor will perform a physical exam and ask you about your medical history.

- Blood tests are the next step in diagnosing autoimmune hepatitis. Your doctor will test your liver enzymes (SGOT/SGPT), which can be elevated in those with autoimmune hepatitis. They may also test for certain antibodies in your blood that are associated with the condition.
- If these tests suggest that you may have autoimmune hepatitis, your doctor may recommend a liver biopsy. It is necessary to do liver biopsy, as it is not sensible to give medications with side effects without confirming diagnosis. During a liver biopsy, a small sample of liver tissue is removed and examined under a microscope. This can help your doctor determine the severity of damage to your liver, as well as confirm the diagnosis of autoimmune hepatitis.
- Your doctor may perform an ultrasound or CT scan or fibroscan (special type of ultrasound to detect scaring in liver) to look for signs of liver damage or other abnormalities.

Q I have been diagnosed with autoimmune hepatitis. How will I be treated?

A Once you have been diagnosed with autoimmune hepatitis, your doctor will prescribe you medications to suppress your immune system and reduce liver damage. It is important to follow your doctor's recommendations and attend regular check-ups to monitor response to treatment and adjust your medicines as well as keep a check on the side effects of medicines used. With prompt treatment, it is possible to manage the condition and prevent serious liver damage.

Q What medications will I be given for treatment of this disease? Do they have any side-effects?

A

- Prednisone/Prednisolone (Steroid medicine) is typically used as the first line of treatment for autoimmune hepatitis. Budesonide (also a steroid medicine) may be utilised in those who do not have substantial liver scarring. Both these medicines decrease liver inflammation (swelling) and stop additional scarring/damage to the liver.

- Prednisone's main drawbacks are its side effects, which include, mood and sleep disturbances, acne, bone loss (weak bones), higher blood glucose levels (perhaps leading to diabetes), an increased risk of infections, cataract, high blood pressure, and weight gain. Prednisone users who need it for a long time are closely watched for these adverse effects. Your doctor will use the lowest effective dose required to decrease side effects and at the same time reduce liver damage. Make sure you have protection against hepatitis A, hepatitis B, COVID 19, Flu with appropriate vaccination.

- 6-mercaptopurine or azathioprine: Prednisone may be prescribed along with another drug, such as azathioprine, 6-mercaptopurine. Prednisone may be reduced or eliminated with the addition of a second medicine, thereby reducing the likelihood of prednisone-related side effects. The side effects of azathioprine with 6-mercaptopurine might also include allergic reactions, low white blood cell counts, pancreatic inflammation (pancreatitis), nausea, and abnormal liver blood tests (which can sometimes cause confusion as to whether the abnormal results are from the autoimmune hepatitis, or the drugs used to treat it). While using these medications, routine blood tests are conducted to check for certain side effects.

- Mycophenolate is used sometimes when above medications are not tolerated. There are a number of possible side effects of mycophenolate, including a higher chance of getting cancer or an infection. Mycophenolate should not be consumed when pregnant because it can result in birth abnormalities.

- If you have osteoporosis (weak bones), your doctor may also prescribe you calcium, Vitamin D supplements and other drugs to strengthen your bone (bisphosphonates /teriparatide).

Q Do I need any regular tests to monitor side effects of the medicines?

A Your doctor will advise you the following tests for monitoring of side effects due to the medicines given for treatment of autoimmune hepatitis: -

- Regular monitoring of blood pressure and bodyweight
- Blood tests (Blood count, liver function test)
- Blood sugar level
- Bone mineral density with Dexa scan (to predict bone loss)
- Eye check-up for cataract

Q How long do I need to take the medicines?

A Treatment is generally continued until the disease is in remission (control). Sometimes it may need to be stopped if the patient has no response or experiences serious side effects. Remission means the absence of symptoms, normal or almost normal liver blood test results, and improvement in the physical characteristics of the liver tissue (based on biopsy). Majority but not all of patients experience remission after 2-3 years.

Q Can this disease come back (relapse) if medicines are stopped?

A The decision to stop treatment will be taken by your doctor after taking into consideration your history and complications (if any) of illness. After treatment is stopped, about half of patients continue to be in remission or only experience minor disease activity for months or years. Unfortunately, majority of the patients (75 to 80 percent) eventually need to restart treatment because the disease comes back (relapse). Usually, relapse happens within the first six to twelve months after treatment is discontinued. Relapse is more likely in people with certain types of autoimmune hepatitis and in these patients, medications are continued lifelong.

Q What can I eat if I have this disease?

A

- No, particular diet has been found to help patients with autoimmune hepatitis to have a better outcome. The best recommendation is to maintain a regular, healthy diet that is balanced, and to avoid being overweight because this might worsen autoimmune hepatitis and raise the risk of fatty liver disease.
- Alcohol should be avoided because it might damage the liver and result in fatty liver disease. All alcoholic drinks, including beer, wine, and spirits, can be bad for the liver. Even little amounts of alcohol can make liver disease worse in certain people.

Q What complications of autoimmune hepatitis am I likely to face?

A Some of the complications of autoimmune hepatitis include:

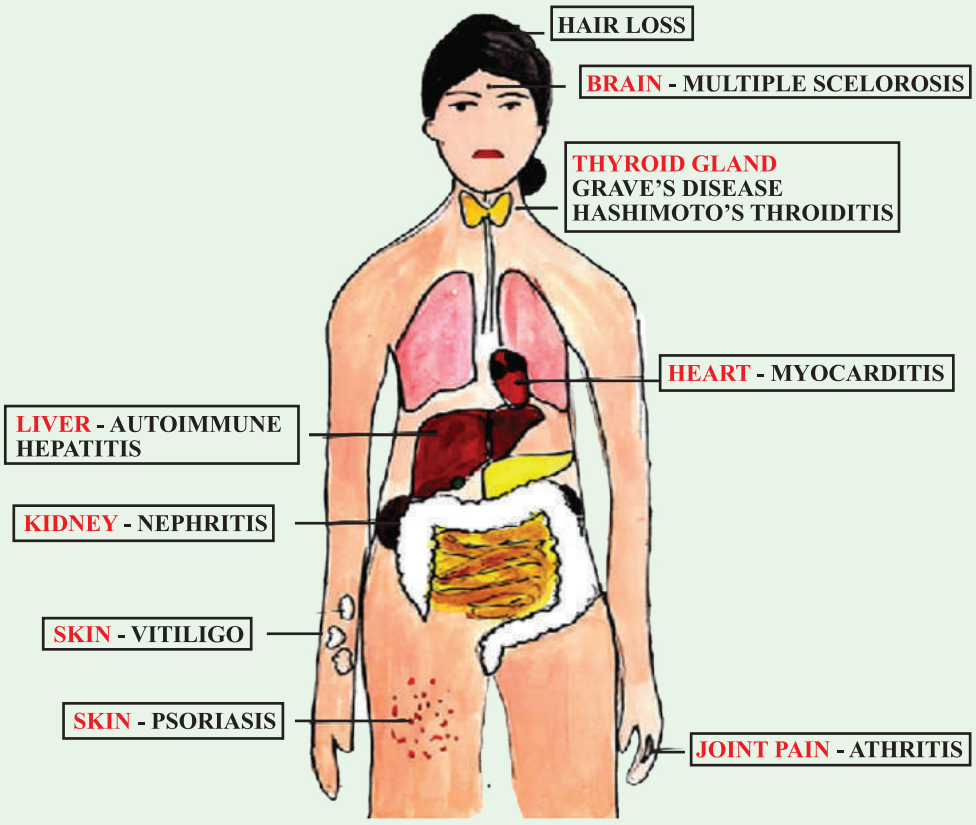
- Cirrhosis: This is when your liver becomes scarred and hard and cannot work properly. Cirrhosis can cause problems such as blood vomit, infections, fluid in your belly, mental confusion, or liver cancer.

- Liver failure: This is when your liver stops working completly, and you need a liver transplant. Liver failure can be life-threatening and may happen suddenly or gradually.

Q I have been diagnosed with autoimmune hepatitis. Am I likely to suffer from other autoimmune diseases?

A Yes, some patients with autoimmune hepatitis may also have other autoimmune disorders, such as celiac disease (gluten intolerance), rheumatoid arthritis (joint inflammation), or ulcerative colitis (inflammation of intestine), type 1 diabetes, thyroid diseases. These diseases can affect different parts of your body and cause more symptoms and complications. It is important for patients to be tested for these disorders at the time of diagnosis of autoimmune hepatitis so that they can receive proper treatment. It is also important for patients with these other autoimmune disorders to be screened for autoimmune hepatitis, as it can lead to liver damage if left untreated.

Autoimmune diseases associated with autoimmune hepatitis



Q I have autoimmune hepatitis Am I likely to have other autoimmune liver diseases?

A In addition to autoimmune hepatitis, primary biliary cholangitis and primary sclerosing cholangitis are other known autoimmune liver diseases. These can occur concurrently with autoimmune hepatitis and are referred to as overlap syndromes. Autoimmune hepatitis primarily damage to hepatocytes (liver cells), while primary biliary cholangitis affects the small bile ducts in the liver. Primary sclerosing cholangitis causes damage and scarring of the larger bile ducts. These conditions can cause symptoms like fatigue, abdominal pain, and jaundice. Treatment options include medications to suppress the immune system and management of symptoms.

FREQUENTLY ASKED QUESTIONS

BUDD CHIARI SYNDROME

CONVENOR:
Shalimar

MEMBERS:
Rakhi Maiwall
Shaji Marar
Yogesh Chawla

FAQS ON BUDD CHIARI SYNDROME

1. What is Budd-Chiari Syndrome? What is the cause of Budd-Chiari Syndrome, and how did I get this disease? Is Budd-Chiari syndrome genetic?
2. What problems can I develop due to Budd-Chiari syndrome? What is my life expectancy?
3. What are the treatment options available for Budd-Chiari syndrome Can it be cured?
4. How long will I have to take blood thinners and other medications? What will be the side effects of blood thinners? How do I know medicines are working?
5. How would I know if my stent/vein is blocked after the procedure? What should I routinely monitor at hospital visits and at home (common symptoms)?
6. Will I be able to bear a child with my condition? Will Budd-Chiari syndrome affect my pregnancy?
7. Do I need to change any medicine during pregnancy? What will be the effect of Budd-Chiari syndrome on my child?
8. Can I breastfeed my baby? Will my child be affected if I take routine blood thinners?
9. Do I need to follow some diet for Budd-Chiari syndrome?
10. Can I develop cancer due to Budd Chiari Syndrome? Will I need to undergo surgery or a liver transplant?

SHIVRAM PRASAD SINGH
PRESIDENT

MAMUN-AL-MAHTAB
SECRETARY GENERAL

UNDER THE AUSPICES OF SAASL WOMEN IN HEPATOLOGY FORUM

AABHA NAGRAL
CHAIRPERSON

LUBNA KAMANI
CO-CHAIRPERSON

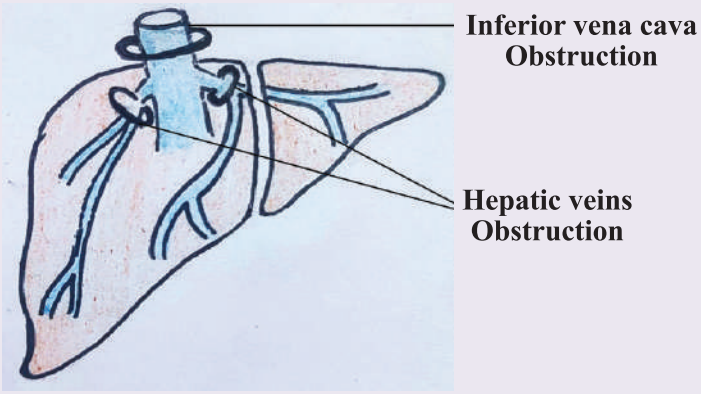
ROKSHANA BEGUM
MEMBER SECRETARY

SAMRIDDHI POYEKAR
FAQ's CO-ORDINATOR

Q What is Budd-Chiari Syndrome? What is the cause of Budd-Chiari Syndrome? and how did I get this disease is Budd-Chiari syndrome genetic?

A

- Budd-Chiari syndrome or hepatic venous outflow tract obstruction is caused due to obstruction of the veins which drain (carry) blood from the liver to the heart (hepatic veins and inferior vena cava). This narrowing leads to blockage of blood flow out from the liver, which causes congestion in the liver (stagnation of blood in liver) and increases portal venous pressure (pressure in the vein which carries blood from intestine to liver), also known as portal hypertension.



- Budd-Chiari Syndrome occurs in 1/100000 of the population and may occur at any age, and both genders seem to be equally affected, with slight male predominance in Asian countries. The diagnosis of Budd-Chiari syndrome is made on ultrasound doppler or multiphase CT scan or Magnetic Resonance Imaging (MRI).

- Budd Chiari syndrome can be primary or secondary. Primary BCS is caused due to increased tendency of your blood to clot, known as a prothrombotic state, although in half of the cases, no cause may be identified and is labelled as idiopathic BCS. Various prothrombotic state includes acquired disorders like myeloproliferative blood disorders, paroxysmal nocturnal hemoglobinuria, anti-phospholipid syndrome, and various inherited disorders like protein C, S deficiency, factor V Leiden mutation and prothrombin gene mutation. Many other risk factors predispose to thrombosis, like oral contraceptive use, recent pregnancy and many other systemic diseases.Secondary BCS occurs due to infiltration or invasion of the hepatic venous outflow tract by tumors.

- It is unclear if BCS is genetic and rarely runs in families. Your treating doctor also tests for these diseases or the cause of what led to Budd Chiari Syndrome since, at times, special treatment for these may be required.

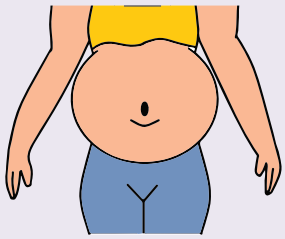
Q What problems can I develop due to Budd-Chiari syndrome? What is my life expectancy?

A

- Some patients with BCS do not have any symptoms and may be detected by your doctor on the basis of abnormal liver function tests or during evaluation for the cause of liver disease.

- Most common signs and symptoms of BCS are abdominal pain, enlarged liver (hepatomegaly), accumulation of fluid in the abdomen (ascites) and swelling in legs.

Pain over liver area



Ascites (Fluid in abdomen)

- Patients may also have fever, yellowish discoloration of eyes (jaundice) and prominent blood vessels (veins) on the abdomen and back. You may also have blood in vomiting or black coloured stool. In severe cases, you may have liver failure, which can cause disorientation, confusion and loss of consciousness.

Jaundice

Vomiting of blood (Hemetemesis)

The life expectancy in BCS patients depends on how early the diagnosis is made and the response to the treatment. If not managed properly the risk of death can be high, but with proper and timely management, survival at 5 years exceeds 80%.

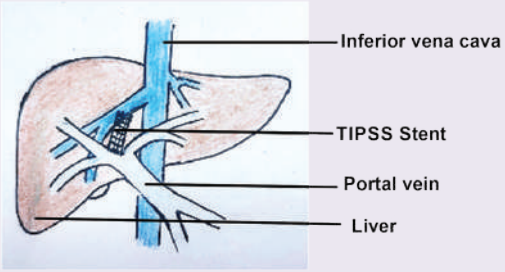
Q What are the treatment options available for Budd-Chiari syndrome Can it be cured?

A Treatment in Budd-Chiari syndrome aims to

- Restore the return of the blood from the liver to the heart,
- Treating the underlying condition which led to the blockage and
- Managing the complications (like vomiting blood, fluid in abdomen,disorientation/confusion)

The blockage can be resolved using blood thinners, radiological interventions to open the blockage (angioplasty/TIPS) or surgery. Medicines include blood thinners known as anticoagulation which can be in the form of injections like heparin or oral tablets like Vitamin K antagonists (Warfarin/ Nicoumalone) or direct-acting oral anticoagulants (Dabigatran/ Rivaroxaban/ Apixaban).

The various types of radiologic interventions include angioplasty (dilation of narrowing of the vein with a balloon), stenting (placement of stent across the narrowing in the vein), or trans jugular intrahepatic portosystemic shunt (TIPS)- a procedure in which a stent is placed between the hepatic veins (veins which carry blood from liver to heart) and portal vein (vein which carries blood from intestines to liver).



TIPSS PROCEDURE

If the above-mentioned procedures are not feasible, surgical shunts (surgery to create shunts) can be made to bypass the blockade, which help improve the symptoms. Liver transplantation is considered if there is no response in symptoms, development of liver failure or cancers in the liver.

You may also be given other medications by your doctor such as diuretics to decrease the fluid (ascites) in your abdomen and lower limb swelling and beta-blockers to decrease the pressure in portal veins to prevent varices (dilated veins in food pipe) from rupturing.

At times your doctor may advise other medications to treat the cause which led to blood clotting (prothrombotic state), depending on the cause found on the workup

Q How long will I have to take blood thinners and other medications? What will be the side effects of blood thinners? How do I know medicines are working?

A

- The medicines for Budd Chiari syndrome need to be continued throughout life. You need to undergo regular follow-ups with your doctor.
- Anticoagulants (blood thinners) need to be continued for life. The most common side effect of anticoagulants is that you can have bleeding from the nose, gums, and bleeding in skin (due to trivial injury). Excessive bleeding in the menstrual cycle can occur.
- You would need to undergo blood tests like INR for anticoagulants to know if your medicines are working. These tests are done at regular intervals, and the dose of anticoagulants needs to be adjusted based on INR reports.
- You need to keep a chart of your body weight, see for swelling in legs, and regular endoscopies may be required to check for your risk of bleeding from varices (dilated veins in food pipe).
- Your doctor will also advise ultrasound (doppler) to check if the outflow tract from the liver is not blocked again after reopening.

Q How would I know if my stent/vein is blocked after the procedure? What should I routinely monitor at hospital visits and at home (common symptoms)?

A The hepatic venous outflow, which was opened or the stent placed previously, may get blocked again. This can present without any symptoms or can have varied symptoms like abdominal pain, ascites (accumulation of fluid in the abdomen), weight gain, the appearance of dilated veins over the abdomen and legs, Blood vomiting or black-coloured stools or other symptoms as described for Budd Chiari syndrome. If you develop any of these symptoms, visit your doctor immediately for advice.

Your doctor will order appropriate tests (ultrasound doppler or CT scan) to check if there is blockage again in case you develop any of these symptoms. In case there is a blockage, your doctor will decide on the next treatment.

Q Will I be able to bear a child with my condition? Will Budd-Chiari syndrome affect my pregnancy?

A Women with Budd-Chiari syndrome can plan pregnancy. You will be at a higher risk of miscarriages, and chances of preterm birth (delivery of the baby prior to expected date of delivery) are increased. The use of anticoagulants such as Vitamin K antagonists (Warfarin/ Nicoumalone) is associated with an increased risk of malformations (abnormally formed body parts) in the baby if taken by the mother during pregnancy. Before conception, it is advisable to meet your treating doctor to discuss about your management. The treating doctor may advise you to switch treatment to other safe medicines that do not cause problems in the baby.

You might have a risk of blockage of the veins during pregnancy as the risk of thrombosis is increased. Therefore, you need regular monitoring by your treating doctor and gynaecologist during your pregnancy.

Q Do I need to change any medicine during pregnancy? What will be the effect of Budd-Chiari syndrome on my child?

A During the pregnancy, you may be advised to switch the oral blood thinner medicine from Vitamin K antagonists (Warfarin/Nicoumalone) to injections (low molecular weight heparin) given subcutaneously (below the skin like insulin) because of the potential harmful effect of warfarin on the developing baby. Warfarin can easily cross the placenta, which can affect the developing baby.

The condition will not be passed on to your child unless the cause of your Budd Chiari Syndrome is inherited blood clotting disorder.

Q Can I breastfeed my baby? Will my child be affected if I take routine blood thinners?

A Breastfeeding a child while taking blood thinners (anticoagulants) is considered safe. Vitamin K antagonists (Warfarin/nicoumalone) have a low tendency to pass through the breastmilk to affect the baby's health and can be taken safely in the postpartum period (after delivery).

Similarly, heparin can also be continued while breastfeeding. Newer anticoagulants (directly acting oral anticoagulants Dabigatran, Rivaroxaban, Apixaban) are not recommended if you are breastfeeding until more safety data is available.

Q Do I need to follow some diet for Budd-Chiari syndrome?

A If you have symptoms of ascites, you may be asked to restrict your salt intake. It would be best if you avoid smoking and alcohol. In case you are planning to take any new medicine, consult your doctor as the new medicine can also interfere with warfarin's action.

Q Can I develop cancer due to Budd Chiari Syndrome? Will I need to undergo surgery or a liver transplant?

A

- Rarely, patient with Budd Chiari Syndrome can develop cancer in the liver (hepatocellular carcinoma). You should undergo routine check-up for cancer in the liver with ultrasound and blood tests like alpha-fetoprotein, as advised by your doctor. In case you develop cancer, multiple treatment options are available, which will be decided by your treating doctor.

- Liver transplantation can also be considered for these patients depending on the stage of the liver cancer. The need for surgery and liver transplantation is decided based on multiple factors, including blood investigations, imaging, and the general condition of the patient.

FREQUENTLY ASKED QUESTIONS

DOS AND DONTS OF CIRRHOSIS

CONVENOR:
Abraham Koshy

MEMBERS:
Nutan Desai
Pathik Parikh
Sarojini Parmeswaran

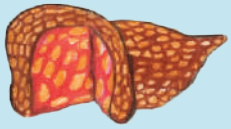
FAQs on Do's and Don'ts Cirrhosis

1. What is cirrhosis? What causes cirrhosis?
2. What diet is advised in patients with cirrhosis? Can I fast for religious purposes?
3. How much salt and water am I allowed in my diet?
4. How much physical activity is permissible for me at home and at workplace?
5. Is it safe for me to drive?
6. What tests do I need even if my cirrhosis appears to be in control?
7. Apart from my regular scheduled visits, under what circumstances should I consult my doctor?
8. My doctor has advised me a lot of vaccinations, do I really need them?
9. If I develop fever or cough, which medicine can I take?
10. Can I undergo dental extraction / intraocular injection for diabetic proliferative retinopathy any minor or major surgery?
11. Can I take painkillers or other medications such as antibiotics? What medicines should I avoid?
12. A friend claims herbal/homeopathy medicines cure cirrhosis. Should I try those?

Q What is cirrhosis?

A Cirrhosis is the result of damage to the liver over many years in which there is permanent scarring of your liver. It is associated with poor function of liver and may cause problems such as vomiting of blood, swelling of feet and/or abdomen, confusion, and/or liver cancer.

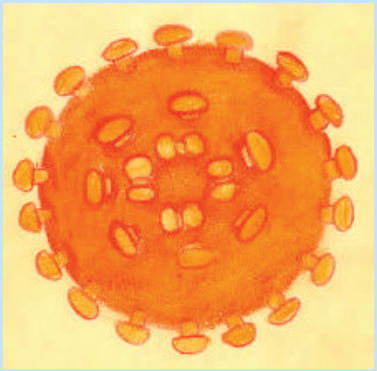
Normal Liver



Cirrhotic liver

Cirrhosis may be due to damage to the liver due to accumulation of fat in the liver, alcohol, viruses (Hepatitis B and C), autoimmune hepatitis, blockage of ducts carrying bile from liver to intestine (Primary biliary cirrhosis and sclerosing cholangitis), Wilson disease (accumulation of copper in liver) and other genetic causes.

Obesity Alcohol



Viral Infection (Hepatitis B,C)

Q What diet is advised in patients with cirrhosis? Can I fast for religious purposes?

A

- Your diet depends on your weight and associated conditions such as diabetes or high cholesterol, presence of fluid in your belly. It is best to consult your doctor for your specific requirement.

- However, it should contain adequate proteins and calories. A daily calorie intake of 30–35 kcal/kg ideal body weight and daily protein intake of 1.2–1.5 g/kg ideal body weight is generally recommended in non-overweight patients. Obese patients also have loss of muscle mass, which is more difficult to recognize, and should restrict calories moderately while maintaining an exercise program.

- A daily balanced diet having carbohydrates, proteins, fat, fruits, vegetables and vitamins is recommended. Intake of protein rich food like Milk, curd, paneer, roasted chana, sprouts, all pulses and beans, soya bean, dry fruits like peanuts, almonds, cashew, pista and walnuts is recommended.
  A bedtime snack is recommended to prevent muscle breakdown.

- Restriction of salt intake to 4gm of table salt daily and to avoid food items like chips, papad, pickles, bakery products (bread, biscuits, cakes, etc.) pasta and noodles with flavour mixes. In general to avoid intake of any packaged and processed food items.

- It is advisable to avoid uncooked food, if not made at home. This is because non- home-made uncooked food, increase risk of foodborne infections. Your doctor may prescribe protein supplements, as well as vitamin and mineral supplements.

- No amount of alcohol, is safe when you have liver cirrhosis as it can worsen your disease.

- It is best to consult your doctor for your specific requirement before prolonged fasting. If you do not have swelling of the feet or abdomen and not on medication to reduce swelling, it may be safe for you to fast for up to 12 hours, as for Ramzan/navratri. Prolonged fasting, even for religious purpose is best avoided.

DIET RECOMMENDED IN CIRRHOSIS

Diet rich in proteins (egg, fish, lean meat, milk cheese, panner, yoghurt, pulses, nuts), whole grains, fruits and vegetables.

Q How much should salt and water am I allowed in my diet?

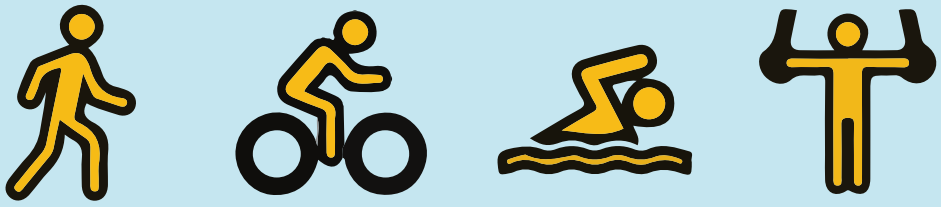
A You should follow your doctor's advice regarding your daily salt and water allowance. Generally, one needs to reduce salt and drink only enough water to satisfy thirst. Avoid salted items such as chips and biscuits. You can use herbs and spices to add flavour to food (e.g., pepper, garlic, chilli, ginger, onions, lime, vinegar). Usually, it is not necessary to restrict fluid intake unless the serum sodium level is below 130 mEq.

Q How much physical activity is permissible for me at home and at workplace?

A

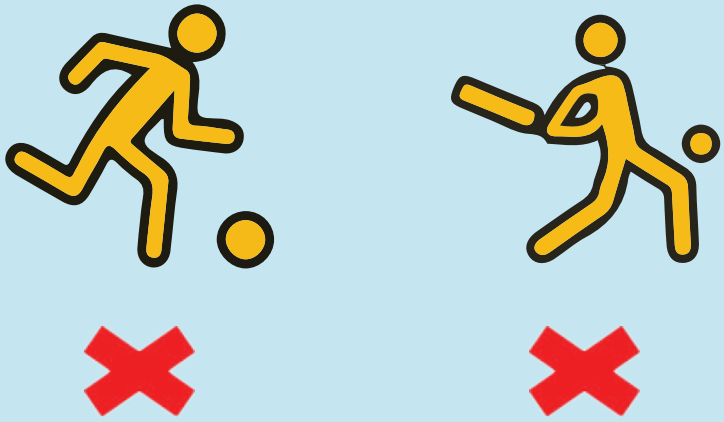
- Exercise in general has multiple health benefits. People with cirrhosis often suffer muscle loss and muscle strength, physical exercise will help in maintaining both.

- Moderate intensity endurance training exercises like walking, cycling, swimming, dancing and resistance training exercises like dumbbells or weight training can be done safely by most patients with cirrhosis. Excessive exercise should be avoided. Your exercise tolerance will depend on the stage of cirrhosis and presence of complications. Safe limit of exercise needs to be discussed with your doctor.



Walking | Cycling | Swimming | Resistance exercises

- Contact sports like football / cricket / volleyball /basketball are best avoided especially if you have an enlarged spleen. If you have fatty liver disease and are overweight it may be a good idea to get your heart evaluated as risk aggravating a silent heart disease is present.



Q Is it safe for me to drive?

A Safety of driving or operating heavy machinery depends on mental and motor skills. Advanced cirrhosis leads to changes in brain function which may or may not be clearly visible or understood by you and may slow down your reflexes. Your doctor will assess you for the presence of effects of cirrhosis on your brain function and then advise you regarding the safety of driving and operating heavy machinery.

Q What tests do I need even if my cirrhosis appears to be under control?

A Patients with cirrhosis are at risk of getting liver cancer. Six-monthly blood test for alpha feto protein (AFP – a tumor marker) and Ultrasound Abdomen are required to detect the cancer early. If there is delay in detecting cancer, it may not be curable. Your doctor will also advise you to undergo endoscopies at regular intervals to prevent bleeding from veins in your food pipe. Swelling of feet or abdomen can be reduced temporarily with medications which help to remove the accumulated fluid via urine. These medicines can have undesirable effects like kidney damage, dehydration, changes in the level of sodium and potassium in the body, confusion, muscle cramps and need to be monitored for both efficacy and side effects. The fluid may re-accumulate on discontinuing medicines so regular investigations and follow up visits with your doctor is essential. Once cirrhosis is advanced, the only definitive cure is liver transplant.

Q Apart from my regular scheduled visits, under what circumstances should I consult my doctor?

A There are certain warning signs which should make you consult your doctor as soon as possible.

- Vomiting of blood or Black semi-solid or liquid stool. If you have such a stool, you should immediately contact your doctor or go to the nearest hospital, it may indicate bleeding from your stomach.
- Sudden change of weight/or passing less amount of urine.
- Increase in leg swelling, abdominal distension or breathing difficulty despite taking urine pills.
- Inability to sleep at night, drowsiness in the daytime, inapropriate behavior, slurring of speech or impaired memory.

- Signs of infection such as fever, loose stools, cough with thick yellow sputum.
- Severe abdominal pain.

Q My doctor has advised me a lot of vaccinations, do I really need them?

A Yes. Cirrhosis predisposes you to infections due to impaired immunity, resulting in increased chances of serious infections which can even be life threatening.

Your doctor will generally advice you regarding influenza(flu), pneumonia and hepatitis A/ B vaccine. It is advisable to take these vaccines as they reduce the risk of these infections.

Q If I develop fever or cough, which medicine can I take?

A For immediate relief of fever, you may take a paracetamol tablet. If fever continues or if there is accompanying abdominal pain or loose motions or pain or redness and swelling in the leg or cough or other complaints, you should consult your doctor immediately.

Q Can I undergo dental extraction / intraocular injection for diabetic proliferative retinopathy /any minor or major surgery?

A

- Before you undergo any surgical procedure, it is better to inform your treating doctor that you have cirrhosis, so that the necessary precautions are taken. Cirrhosis is associated with lower number of platelets and decreased level of clotting factors in the body. This increases the risk of bleeding during any surgery and needs to be corrected. Certain medicines given to you during anaesthesia can also be harmful to your liver. Therefore, consulting your liver doctor prior to any surgery however small it may seem is necessary.

- If you are undergoing any procedure requiring intravenous contrast like CT/MR abdomen or angiography, contact your doctor to ensure your kidney function is normal.

Q Can I take painkillers or other medications such as antibiotics. What medicines should I avoid?

A

- You may be prescribed antibiotics and painkillers. Certain painkillers like NSAIDs (diclofenac, aceclofenac, ibuprofen, mefenamic acid, etoricoxib, naproxen) should be avoided if you have cirrhosis. You can use acetaminophen (paracetamol) as painkiller but the total dose of acetaminophen taken in a day should not exceed more than 2gm.

- Few antibiotics like aminoglycosides (amikacin), vancomycin, tetracycline, erythromycin estolate, should be avoided if you have cirrhosis.

- Anxiety- reducing and sleep-inducing medicines are to be avoided without consulting your doctor.

- Acid-lowering medicines (pantoprazole, omeprazole, rabeprazole, esomeprazole) should be used only if recommended by your doctor and not on a long term basis. In general avoid using any over the counter medicine without consulting your doctor.

Q A friend claims herbal/ homeopathy medicines cure cirrhosis Should I try those?

A There are many reports of herbal medicines damaging the liver. There are no good studies showing the benefit of herbal medicines in cirrhosis. It is safer for you not to try herbal medicines.

FREQUENTLY ASKED QUESTIONS

DRUG INDUCED & HERB INDUCED LIVER INJURY (DILI/HILI)

CONVENOR:

Harshad Devarbhavi

MEMBERS:

Anand Kulkarni
Cyriac Abby Philips
Srijaya Sreesh

FAQs on DILI / HILI

1. What is drug-induced liver injury (DILI)?
2. What are the common medications/drugs known to cause liver injury?
3. How will I know that I have DILI (Symptoms) and how is it diagnosed (tests)?
4. I have a skin problem (psoriasis) or joint problem (rheumatoid arthritis) for which I am taking methotrexate. How do I identify that my liver is getting affected methotrexate?
5. What is the safe limit for over the counter (OTC) drugs like paracetamol and what are the precautions to be taken while purchasing OTC medicines?
6. Who are more prone to develop hepatitis while on anti-tuberculosis treatment (ATT)? And how to manage ATT hepatitis?
7. Can liver injury be caused by traditional or complementary and alternative medicines? Isn't it considered safe and natural?
8. What is DILI due to herbal and dietary supplements?
9. What are the common herbal or complementary and alternative medicine (CAM) from South-Asian region that may cause liver injury?
10. How does liver injury due to herbals differ from those due to conventional (modern) prescription medications?

Q What is drug-induced liver injury (DILI)?

A Liver injury that occurs following intake of any medication (drug) is called drug-induced liver injury. Although most medications are safe, some individuals develop an adverse reaction to a drug, despite receiving the drug in prescribed and adequate doses. This is likely due to a person's unique genetic predisposition.

Q What are the common medications/drugs known to cause liver injury?

A

- Antibiotics or antimicrobials are the most common cause, followed by complementary and alternative medicines or herbal and dietary supplements. Together they account for a majority of cases of drug induced liver injury.
- Among antimicrobials antituberculosis drugs are the commonest followed by other cotrimoxazole, ciprofloxacin or amoxicillin-clavulanate.
- Others include antiseizure medications such as phenytoin, carbamazepine, lamotrigine. Pain killers (non-steroidal anti-inflammatory drugs) are also an important contributor for DILI.

Q How will I know that I have DILI (Symptoms) and how is it diagnosed (tests)?

A Liver injury that occurs following intake of any medication (drug) is called drug-induced liver injury. Although most medications are safe, some individuals develop an adverse reaction to a drug, despite receiving the drug in prescribed and adequate doses. This is likely due to a person's unique genetic predisposition.

Symptoms of Drugs Induced Liver Injury

Pain in abdoman

Fever

Jaundice (Yellow eyes, skin and dark urine)

Disorientation and confusion

Nausea and Vomiting

Altered sleep cycle

Presence of jaundice or altered consciousness are worrisome signs and may lead to death or liver transplantation. Blood tests such as liver function tests help identify the injury and its severity. Since there are no diagnostic test for DILI many common causes of liver disease need to be tested and excluded before a diagnosis of DILI is made.

Q I have a skin problem (psoriasis) or joint problem (rheumatoid arthritis) for which I am taking methotrexate. How do I identify that my liver is getting affected by methotrexate?

A Methotrexate is a common, safe and economical drug used for skin and joint diseases such as psoriasis and rheumatoid arthritis respectively. Although, prolonged intake of methotrexate over several years has been thought to cause liver injury, current evidence shows that this fear was overstated and long use is safe in most patients. Risk factors for liver injury may include advanced age, diabetes mellitus, obesity, chronic alcohol use, daily dosing of methotrexate, and non-supplementation of folic acid. Transient elastography (also known as Fibroscan) can help in identifying individuals who are at risk of developing liver scarring.

Q What is the safe limit for over the counter (OTC) drugs like paracetamol and what are the precautions to be taken while purchasing OTC medicines?

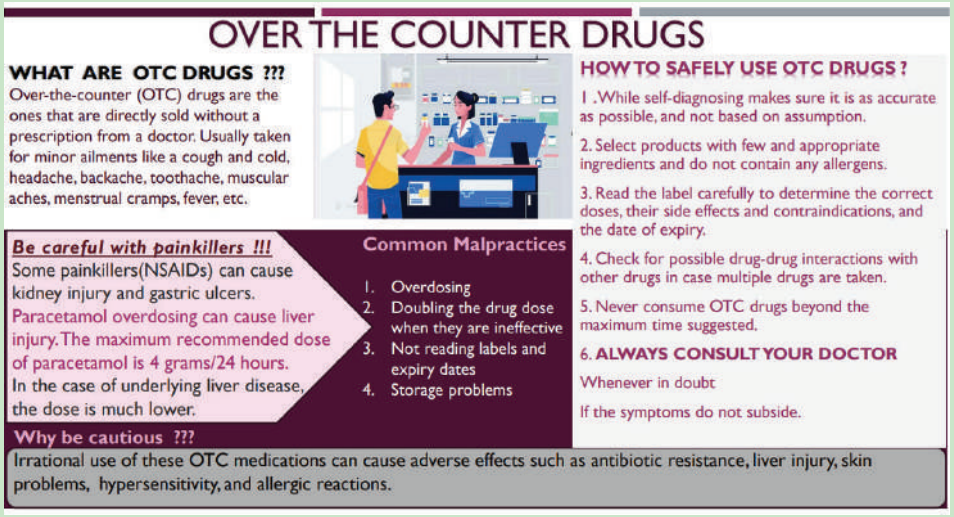
A

- Over-the-counter (OTC) drugs are the ones that are sold directly without a doctor's prescription. It is usually taken for minor ailments like a cough and cold, fever, headache, backache, toothache, muscular aches.

- Paracetamol is one of most commonly used OTC medication. Paracetamol is a safe medication when used in standard doses such as 500 mg to 4000 mg per day (in divided doses). Common indications for use include fever and body aches. Use of more than 6000-8000 grams per day is harmful to the liver but such doses are never used in regular practice. Even in patients with liver disease (cirrhosis) a dose of 1500 – 2000 mg per day in divided doses is considered safe.

- Other painkillers (NSAIDS) like diclofenac, piroxicam, nimesulide etc are more damaging to the liver even when consumed at regular doses. Occurrence of symptoms listed above should prompt immediate stopping of the paracetamol and a consultation with a health care provider.

- Selecting OTC medications that includes paracetamol or pain killers with few and appropriate ingredients, reading the package inserts carefully for correct doses, side-effects, drug-drug interaction and contraindications are important safeguard against adverse effects. Remember that drug-herbals interaction may also occur, so it is prudent to minimize taking any unnecessary medication.



Q Who are more prone to develop hepatitis while on anti-tuberculosis treatment (ATT)? How do to manage ATT hepatitis?

A

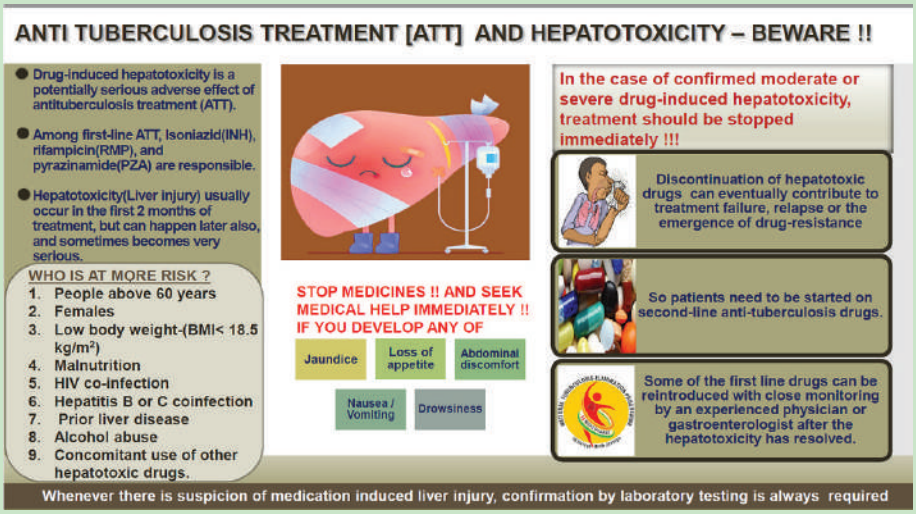
- Most patients will be able to tolerate the antituberculosis drugs without any adverse reaction. As tuberculosis is treated with 4 drugs, three of these 4 drugs (isoniazid, rifampicin and pyrazinamide) have the potential to cause liver injury particularly in the initially 2 months of treatment. Loss of appetite, nausea, vomiting, upper-abdominal discomfort, drowsiness, and jaundice are the symptoms of ATT induced hepatitis. They are not specific enough to ascertain a liver disorder. Therefore, confirmation by laboratory testing for liver injury is required.

- Monitoring for the symptoms listed above but in particular yellowness of eyes and dark urine during treatment is indicative of liver injury and the medicines should be stopped immediately. Consult a health care provider immediately if this occurs.

- Often temporary stopping the medicines will help in resolution of liver injury. Following resolution of jaundice or liver injury, the same medicines will be introduced one by one over a period of 1-2 weeks.

- Fortunately, reintroduction of the same drugs that produced liver injury initially are tolerated in 90% of cases. Blood tests to check for liver injury will be done more frequently when these drugs are reintroduced.

- Patients who are older, women, presence of undernutrition or malnutrition, hepatitis B or hepatitis C or HIV, alcohol abuse and use of concomitant liver toxic drugs are risk factors for the development of ATT liver injury.



Q Can liver injury be caused by traditional or complementary and alternative medicines. Are these medicines not safe and natural?

A Contrary to popular belief that complimentary medicines that are considered “natural” and hence “safe”, can cause liver injuries, sometimes severe enough leading to worrisome consequences listed above. The liver injury may occur without symptoms or with jaundice, or with altered consciousness and jaundice known as acute liver failure. Some individuals with known or unknown chronic liver disease may destabilize and present with jaundice and ascites (fluid in the abdomen) called acute-on-chronic liver failure or ACLF.

Q What is DILI due to herbal and dietary supplements?

A Drug induced liver injury may occur following exposure to herbal and dietary supplements (HDS) and is known as HILI-herbal induced liver injury. It occurs following exposure to products that are considered foods/food supplements, taken by mouth. It may contain single or combinations of vitamins, minerals, herbs and other botanicals, amino acids, enzymes, organ tissues, and metabolites. HDS are not considered drugs or medications.

Q What are the common herbal or complementary and alternative medicine (CAM) from South-Asian region that may cause liver injury?

A Most individuals tolerate CAM although the indications for use is not clear or tenuous. The most common herbal components or formulations that have been linked to liver injury from the South-Asian region include Tinospora cordifolia (Giloy herb), Camellia sinensis (Green tea) extracts, Curcuma longa (turmeric), Withania somnifera (Ashwagandha), Centella asiatica (Gotu Kola), Psoralea coryfolia (Bakuchi or Babchi), Aloe barbenendiss mille (Aloe vera), Garcinia cambogia (Malabar tamarind) and to a lesser extent (emerging reports) Gymnema sylvestre (Gurmar or Sugar Destroyer), Morinda citrifolia (Noni) and plants containing pyrrolizidine alkaloids (e.g., Crotalaria species). Many of the herbal products contain many ingredients, so it is difficult to implicate a single ingredient as causing liver injury.

Q How does liver injury due to herbals differ from those due to conventional (modern) prescription medications?

A The liver injury due to herbals are generally similar to prescription medicines. However, few differences are as follows:

- The injury may go unrecognized and hence become more severe.
- There is no specific 'antidote' available since most injuries are caused by multiple herbs.
- The resolution may be prolonged or progress to liver failure especially when liver injury occurs in the setting of an underlying chronic liver disease.

FREQUENTLY ASKED QUESTIONS

EXTRA HEPATIC PORTAL VENOUS OBSTRUCTION

CONVENOR:

Seema Alam

MEMBERS:

Aathira R.
Rajeev Khanna
Rimjhim Srivastava

FAQs on EHPVO

1. What is Extra Hepatic Portal Venous Obstruction (EHPVO) and how did my child get it? Was there any way it could have been prevented ?
2. What are the symptoms of this disease ? Is it life threatening?
3. How will you confirm and treat this disease? Is endoscopy required? How many times will my child need endoscopy?
4. Is my child likely to bleed again? Is surgery an option?
5. Can my child go to school and participate in sports activities?
6.. How can I be alert at home? Does my child need to avoid any food products?
7. Will my child grow like other children? Can my child become a parent?
8. Will the disease be transmitted in his/her child?
9. Will my child need liver transplantation?

SHIVRAM PRASAD SINGH
PRESIDENT

MAMUN-AL-MAHTAB
SECRETARY GENERAL

UNDER THE AUSPICES OF SAASL WOMEN IN HEPATOLOGY FORUM

AABHA NAGRAL
CHAIRPERSON

LUBNA KAMANI
CO-CHAIRPERSON

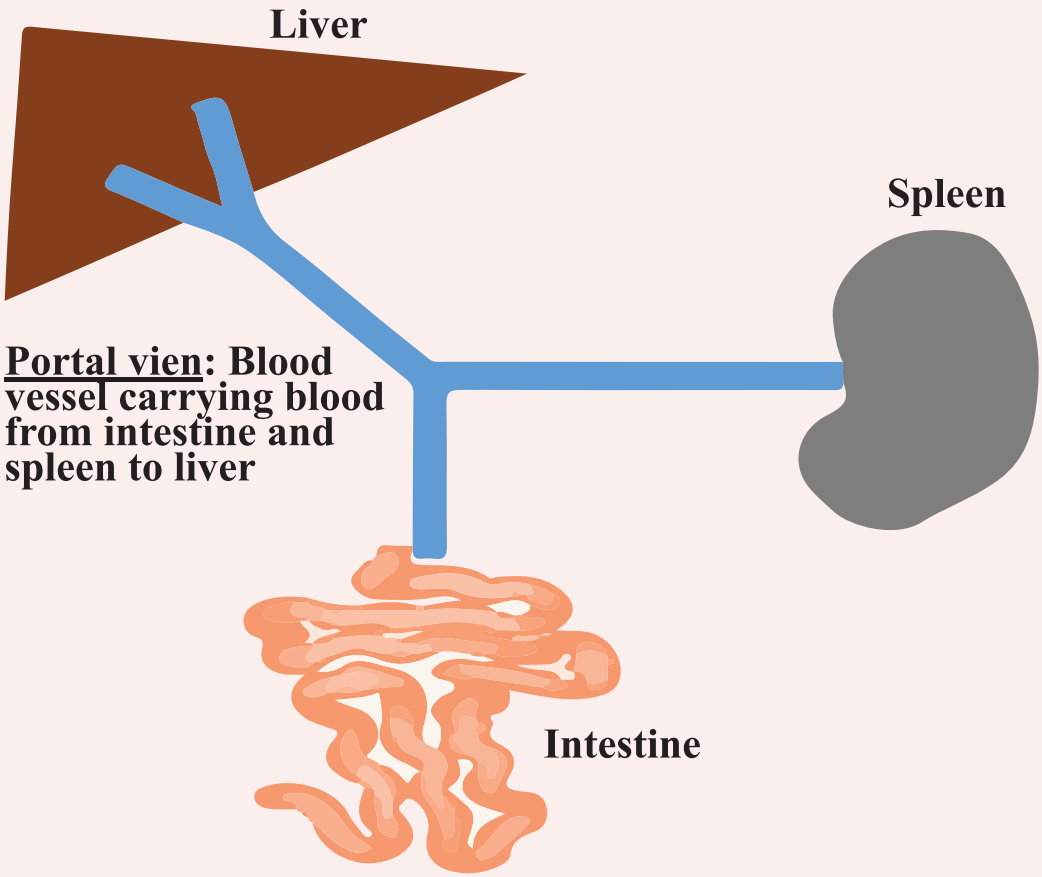
ROKSHANA BEGUM
MEMBER SECRETARY

SAMRIDDHI POYEKAR
FAQ's CO-ORDINATOR

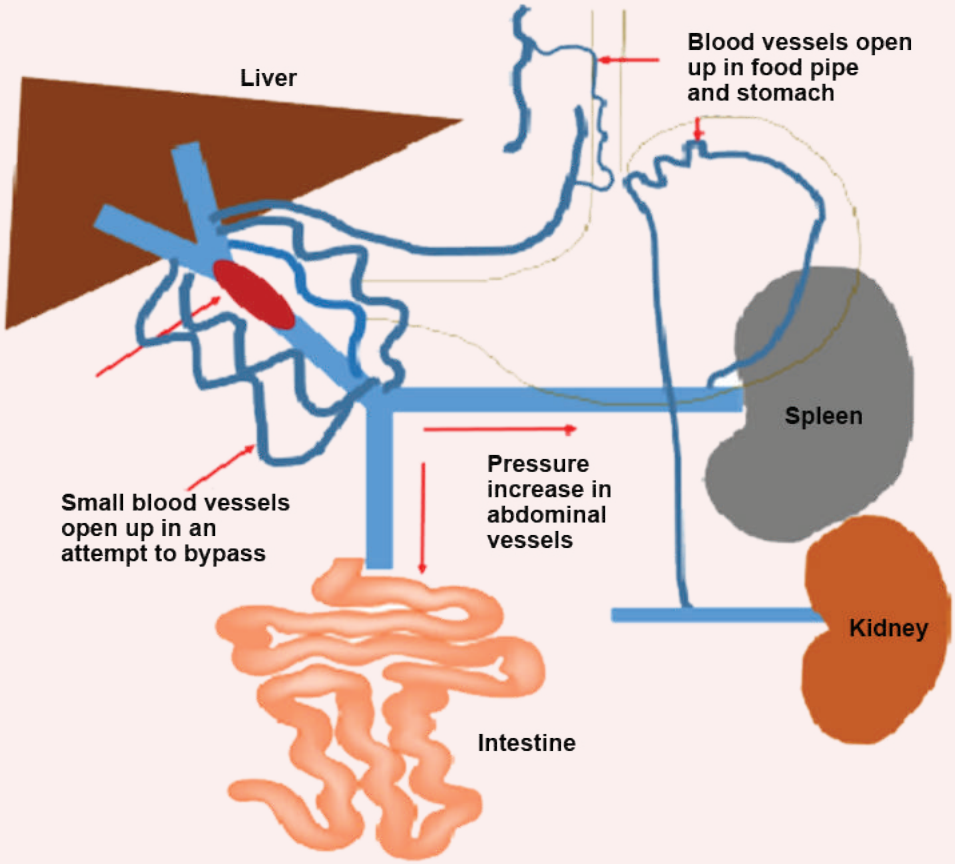
Q What is Extra Hepatic Portal Venous Obstruction (EHPVO) and how did my child get it. Was there any way it could have been prevented?

A

- Extrahepatic portal venous obstruction or EHPVO is a disease condition caused due to long standing obstruction of portal vein, which is the main blood carrying vessel of the liver. Portal vein carries blood from the intestines (small and large) and spleen to the liver, so whatever we eat first goes to the liver, where the food is processed further to be stored or released as per body requirements. Spleen is the organ for clearance of old blood cells (red blood cells, white blood cells and platelets). Spleen and liver are connected together via portal vein.



- Hence, when the portal vein is blocked, spleen increases in size as well as its function (hypersplenism) and causes early removal of platelets, white and red blood cells, and lower counts of these cells. Esophageal varices (dilated veins in the food pipe) and collateral (bypass) vessels develop to divert the flow from splenic vein into main circulation of body.

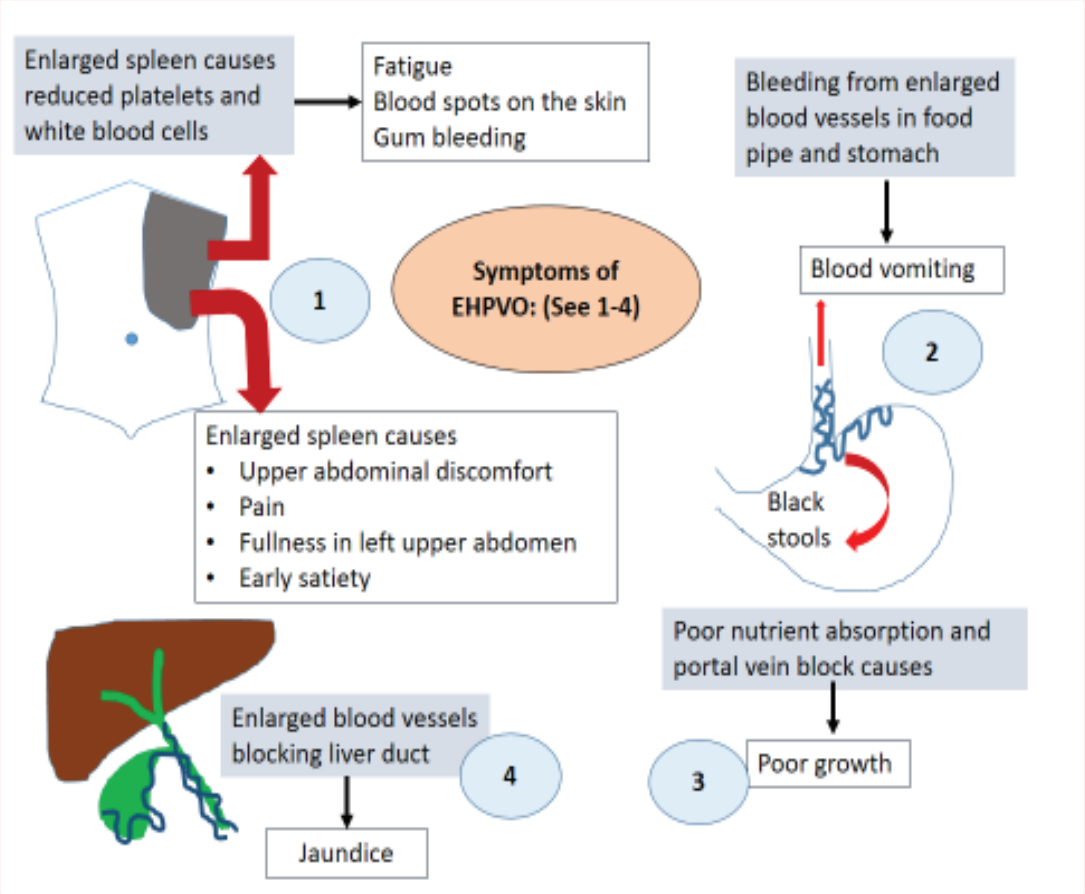


- In children, timing of block of portal vein and cause of EHPVO is mostly not known. Any infection or disease state around portal vein causes its inflammation and subsequent block. Cord vein joins with portal vein, and some children have history of either infection around umbilical cord or catheterization of umbilical vein for exchange transfusion. Other conditions leading to EHPVO are pancreatitis and genetic conditions with increased blood coagulability.

Q What are the symptoms of this disease Is it life threatening?

A

- The manifestations of EHPVO are related to an enlarged spleen and esophageal varices, and their consequences.
- Children present with vomiting of large amount of blood, passage of black colored stools and enlarged spleen.
- Sudden massive loss of blood in vomiting or stools is life threatening and needs urgent admission to a tertiary care center, stabilization and endoscopic procedure to control bleeding.
- Splenic enlargement leads to discomfort in left upper abdomen sometimes giving a vague swelling. Long standing disease can cause slowing of growth.
- Some children can develop jaundice due to compression of biliary tree due to enlarged collaterals.
- Some children do not have any symptoms at all, and they are diagnosed on a routine ultrasound abdomen.
- Other life-threatening complications are reduction of blood supply to the large spleen (infarction) and rarely rupture of a huge spleen.
- As the blood supply of liver is compromised, some of these patients develop derangement of liver functions and progressive liver disease later on in their lives.



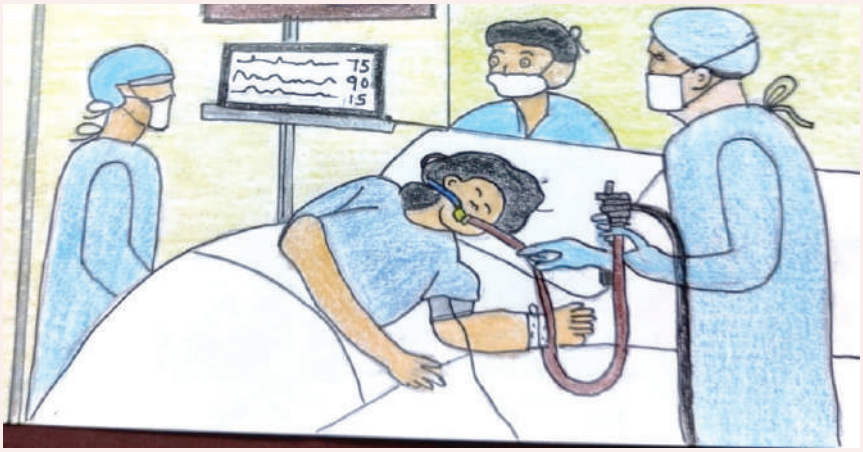
Q How will you confirm and treat this disease? Is endoscopy required? How many times will my child need endoscopy?

A

- EHPVO is diagnosed by ultrasound Doppler where enlarged or new vein formation is seen in the portal venous system around the liver.

- To further confirm and decide on the treatment the doctor may have to do endoscopy. Endoscopy is a procedure where after sedating the child, a thin tube with a camera on its tip is inserted through the mouth; and food pipe, stomach and first part of intestine are visualised. In case of EHPVO swollen vein or varices (known as varix or varices) are seen in the food pipe and sometimes in the stomach.

- Endoscopy is an important procedure which not only confirms the presence of varices but also is the main modality of treatment.

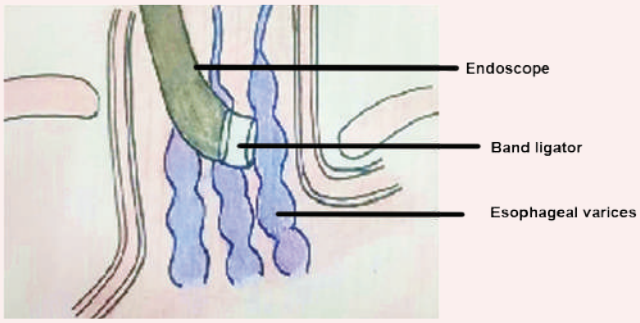


- Treatment involves giving injection octreotide and blood transfusion very carefully if there is acute bleeding followed by endoscopy or directly endoscopy.

- There are two modalities of endoscopic treatment: endoscopic band ligation done in large varices, where tiny rubber bands are applied to the varices which leads to ulceration and drying off of the varices;

- Another modality is sclerotherapy done in smaller varices and in children less than 2 years old, where sclerosant is injected in the varix.

- A child may need on an average of 6-8 endoscopic sessions at an interval of 1-3 month to 6 months for complete eradication of the varices. If endoscopic modalities don't work then child may require surgery.



ENDOSCOPIC VARICEAL BAND LIGATION

Q Is my child likely to bleed again? Is surgery an option?

A

- Unless the varices are eradicated, the bleeding episodes can recur and each bleeding episode can be life threatening. Hence it very important to complete the endoscopic sessions as advised by your doctor.

- Surgical options are available for reducing the life threatening complications by redistribution of high pressure in the abnormally enlarged blood vessels. Surgery would definitely be the solution to tackle most of the complications of EHPVO. However, the blocked vein which enters the liver (Portal vein) cannot be opened up. Thus, the disease remains permanent but the complications can be significantly reduced by performing surgery in a selected set of children.

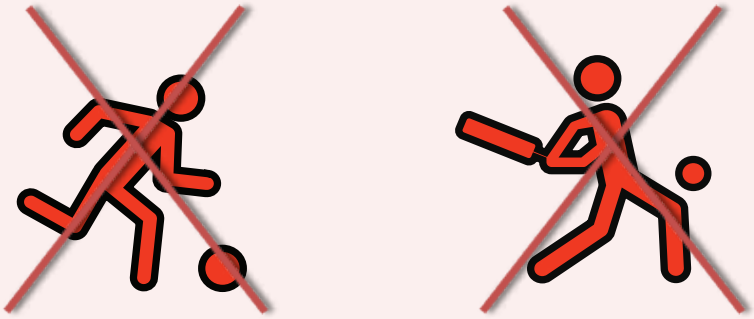
- Your doctor will tell you if your child is a candidate to undergo surgery and will select the type of surgery. Your child would be initiated on some medications in the initial few years after surgery.

- Even after surgery you will have to come for regular follow up visits. Occasionally the bypass formed by surgical means can get blocked and will require further evaluation and tailor-made management.

Q Can my child go to school and participate in sports activities?

A

- Your child can definitely and should go to school.
- Since the spleen is enlarged, contact sports like football, basket ball, cricket, boxing etc. need to be avoided.
- However, he/she can participate in all non-contact sports activities e.g. Badminton, Tennis, Karate, Judo etc.
- Cycling, swimming and athletic activities should be performed with caution.



Q How can I be alert at home. Does my child need to avoid any food products?

A

- Just ensure that he does not entail any contact games at home. Educate the child against such activities.
- No food products need to be avoided for EHPVO child. We just ensure good hygiene of the food.
- Avoid all pain killers (NSAIDs like ibuprofen, nimesulide, mefenamic acid) as these drugs may stimulate blood vomits. For any pain or fever, paracetamol is safe.

Q Will my child grow like other children Can my child become a parent?

A Growth can be affected in as high as 60% of children with EHPVO. There are many reasons attributed to poor growth:

- Congestion in the intestines that will reduce absorption of food nutrients.
- Alterations in factors and hormones required for normal growth.
- The big spleen compressing on the stomach that will reduce the amount of food that can be taken.

The good news is that catch up growth can be achieved after bypass surgery if it is performed before reaching adulthood. Your girl child can get pregnant but there can be complications in pregnancy that will need to be managed at a tertiary care center. Abortions, pre-term birth, stillbirth and low birth weight in babies are known to occur in 12 to 20% pregnancies. The mother may have low hemoglobin and platelets due to the enlarged spleen and she may require blood and platelet transfusions.

A pregnant woman with EHPVO is at higher risk of bleeding from enlarged blood vessels in the food pipe or stomach which would need urgent intervention. The medications which are usually given to reduce the risk of bleeding (Beta-blockers) can affect the growth and health of the foetus and hence cannot be used in pregnancy.

Therefore, proper evaluation and regular follow up in the pre-pregnancy period is extremely important to reduce the complications during pregnancy.

Q Will the disease be transmitted in his/her child?

A Portal Vein thrombosis (PVT) seen in EHPVO is multifactorial and genetics does play role in some individuals. But in children it is mostly an acquired disorder due to umbilical infections, other undetected infections and dehydration at birth. Few mutations have been identified in adult patients leading to portal vein thrombosis but EHPVO so far is not known to be transmitted from parents to children.

Q Will my child need liver transplantation?

A Liver dysfunction can be seen in patients with long standing EHPVO. With increasing age and long-standing deprivation of blood supply due to PVT and untreated complications of portal hypertension, damage to the liver mass (cirrhosis) may be seen which may rarely require liver transplantation.

FREQUENTLY ASKED QUESTIONS

GALLSTONES

CONVENOR:

Usha Dutta

MEMBERS:

Mallika Bhattacharyya
Sanjay Nagral
Showkat Ali Zargar

FAQs on Gallstones

1. What are the symptoms which should alert me to the presence of gallstones?
2. What investigations should I get done to detect gallstones?
3. Could my bloating and indigestion be due to gallstone?
4. Does the size and number of stones matter?
5. Do all gallstones need surgery?
6. I have gall stones but no symptoms. Do I need to undergo surgery?
7. Are there any treatment options other than surgery?
8. I have gallstones. Is it true that I have a higher risk of gallbladder cancer?
9. Is it possible to only remove the stones from my gallbladder and not the gallbladder?
10. Should I opt for a laparoscopic or an open removal of the gallbladder?
11. Will removal of my gallbladder affect my health in the future?

SHIVRAM PRASAD SINGH
PRESIDENT

MAMUN-AL-MAHTAB
SECRETARY GENERAL

UNDER THE AUSPICES OF SAASL WOMEN IN HEPATOLOGY FORUM

AABHA NAGRAL
CHAIRPERSON

LUBNA KAMANI
CO-CHAIRPERSON

ROKSHANA BEGUM
MEMBER SECRETARY

SAMRIDDHI POYEKAR
FAQ's CO-ORDINATOR

Q What are the symptoms which should alert me to the presence of gallstones?

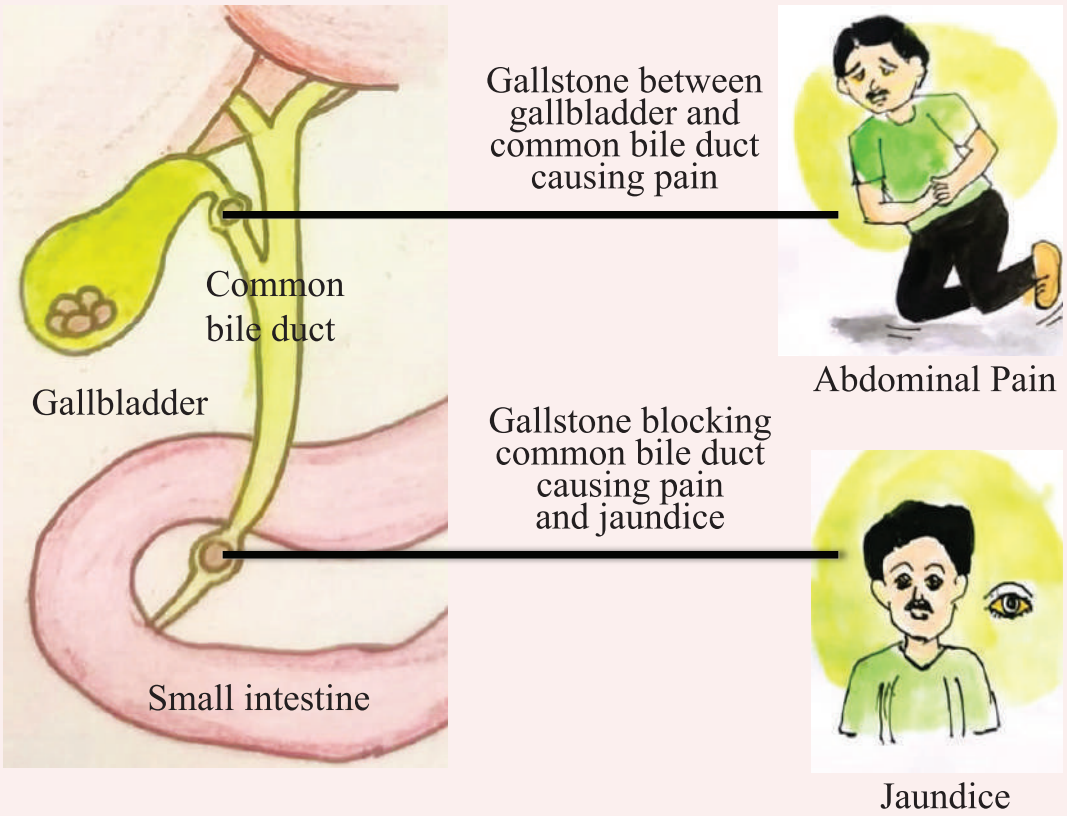
A

- A vast majority of patients may not have any symptoms even when they have gallstones. The most characteristic symptom is pain which begins quite suddenly, mostly in the upper part of abdomen and grows in intensity over 30 minutes to 6 hours and subsides gradually. The pain may spread to the right shoulder or the back and is often associated with nausea or vomiting. Pain may be precipitated by eating a fatty meal or consumption of a large meal following a period of prolonged fasting or sometimes even after eating a normal meal.

Pain in abdomen

Vomiting

- Gas, bloating, flatulence and feeling of fullness in the abdomen may be associated but are not related directly related to stones. If the pain lasts for more than 6 hours or associated with fever and jaundice (yellow discolouration of the eyes or skin) there could be complications such as acute cholecystitis or cholangitis or acute pancreatitis which require you to visit a hospital as soon as possible.



Q What investigations should I get done to detect gallstones?

A

- **An ultrasound** examination of the abdomen is the investigation of choice to diagnose gallstones as it is safe, simple to perform, portable, does not involve ionizing radiation and provides accurate information. This test is performed after an overnight or at least 8 hours of fasting. Abdominal ultrasound involves moving a device (transducer) across your stomach area. The transducer sends signals to a computer, which creates images that show the structures in your abdomen including the gallbladder. If the ultrasound findings are not clear or if complications are suspected, then additional tests may be done such as CT & MRI.

- **Blood tests:** Blood tests may reveal infection, jaundice, pancreatitis or other complications caused by gallstones.

Q Could my bloating and indigestion be due to gallstones?

A Bloating and indigestion are nonspecific symptoms and are not usually considered to be due to the presence of gall stones alone.

Q Does the size and number of stones matter?

A

- The size of gallstones can vary from few millimetres to up to few centimetres. Small gallstones (less than 5mm in diameter) are more dangerous as they can come down in common bile duct and cause jaundice and acute pancreatitis (inflammation of pancreas).
- The risk of gallbladder cancer increases substantially if the size of stone is more than 3 cm and hence your doctor will suggest a cholecystectomy (surgical removal of gallbladder) if you are fit for surgery even in the absence of symptoms.
- The treatment of gallstones is not affected by number of stones present in gall bladder. Patients with multiple stones are at higher risk of developing complications.

Q Do all gallstones need surgery?

A

- Symptomatic gallstone patients are at increased risk of recurrence of symptoms and at risk for development of complications. Among persons who had an episode of uncomplicated biliary pain in the preceding year, the rate of recurrence of biliary pain is nearly 35-40 % per year.
- Biliary complications are also more likely to develop in persons with symptomatic gallstones and the risk is estimated to be 1-2% per year. Patients with gallstones who have symptoms of biliary colic, acute cholecystitis, acute pancreatitis, cholangitis, associated common bile duct stone and incidental gallbladder cancer should undergo cholecystectomy.

Q I have gall stones but no symptoms. Do I need to undergo surgery?

A

- Among asymptomatic patients, the chances of developing symptoms is around 10% at 5 years, 20% at 10 years, and 33% at 15 years.
- Among patients with no symptoms, gallbladder removal may be considered in those with family history of gallbladder cancer, those with larger stone size >3 cm, gallbladder adenoma, and those with a porcelain gallbladder.
- Other indications may include hemolytic disorders (sickle cell disease and hereditary spherocytosis), concomitant abdominal surgery for other indication, gallbladder polyp > 1 cm size.

Q Are there any treatment options other than surgery?

A

Surgery is the standard treatment option for patients with symptomatic gallstone. However, in the small subset of the patients who have pure cholesterol gallstones which are less then 1cm and radiolucent stones (these will not be seen on a plain X ray of your abdomen), a trial of ursodeoxycholic acid therapy may be considered. This therapy is given for six months, followed by assessment by ultrasound to document stone dissolution. This therapy can be given only in those where gallbladder function is good and the duct connecting the gallbladder and bile duct is patent. You will undergo the assessment at three months after start of therapy. If there is no response the treatment may be discontinued. There is no role of ursodeoxycholic acid therapy in those with asymptomatic gallstones. Ursodeoxycholic is given as a daily dose for minimum 3 months and the stone size is assessed by ultrasound at 3 months. If there is no dissolution, then treatment can be stopped.

Q I have gallstones. Is it true that I have a higher risk of gallbladder cancer?

A Gallstone has been identified as key risk factors for gallbladder cancer. Presence of stones is associated with 7 times increase risk for gallbladder cancer. Several experimental and clinical studies have shown that gallbladder stones increase the risk by causing mechanical injury and or injury mediated by bacteria adherent to the stone. Though European, west-European and North -American population only less than 0.1% patients develop gallbladder cancer on long term follow-up over a decade. We suspect in South Asia that a larger number of patients with gallstones are likely to be at risk for developing gallbladder cancer. This may be due to environmental & host related reasons. Symptomatic as well as asymptomatic gallstones are both at increased risk for gallbladder cancer. So, all patients with symptomatic stone should be evaluated for incidental gallbladder cancer prior to surgery and after surgery with a detailed evaluation of gallbladder tissue by the pathologist. All patients with asymptomatic stones should have wait and watch policy for any complications including early gallbladder cancer and should undergo an yearly ultrasound.

Q Is it possible to only remove the stones from my gallbladder and not the gallbladder?

A It is natural to think of removing only gallbladder stones and preserving the gall bladder. However, this is not advisable as doing so would invariably lead to recurrence of the stones. The basic defect responsible for the formation of gallstones is excessive concentration of certain substances in the bile and also poor unction of the gallbladder. Besides cutting the gallbladder open and removing stones surgically would involve stitching it back. This has a high chance of leakage of bile from the gallbladder wall as gallbladder is very thin and delicate. Moreover, the gallbladder which contains stones is invariably inflamed. Removal of the gallbladder does not cause any significant long-term problems, prevents stone recurrence and it may also protect from developing carcinoma of the gallbladder.

Q Should I opt for a laparoscopic or an open removal of the gallbladder?

A

- Till the 1980's gallbladder removal operations were performed by the traditional open method with an incision on the upper abdomen. With the availability of the laparoscope with which surgeons could look inside the abdomen and get a magnified view, soon laparoscopic removal of the gallbladder was tried. In the early years it had some challenges. But today it has replaced open cholecystectomy as the standard operation mainly because the postoperative pain is lesser, recovery faster and scars smaller. Also, it is now considered equally safe.

- In both procedures the steps performed inside the abdomen are roughly the same. However, in the laparoscopic procedure these are done through multiple small key hole incisions which cause less pain and heal faster. Both procedures need general anaesthesia and hospital admission though typically the discharge is earlier with the laparoscopic procedure.

- In a subset of patients, the surgeon may decide to prefer an open operation or convert the operation from a laparoscopic one to an open procedure in case of certain difficulties. In fact, most surgeons will consent you for an SOS conversion to an open procedure if needed during the surgery. In the private sector the cost of a laparoscopic procedure maybe marginally higher though it is often compensated by early discharge and return to work.

Q Will removal of my gallbladder affect my health in the future?

A The gallbladder temporarily stores bile which is formed in the liver and expels it into the upper intestine after we eat. Its removal will naturally affect this storage function. However, it is worth remembering that its function is already impaired by the presence of gallbladder stones. Also, removal of the gallbladder doesn't seem to have any significant impact on the quality of life in a large majority of individuals. It has been reported that a small number of patients will continue to have the pain they experienced before the procedure. This maybe because the gallbladder stones were not causing the symptoms in the first place or the procedure has led to some pain though this is rare. Other long-term problems described include increase in reflux of bile into the stomach causing some burning, slight increase in bowel movement frequency and rarely diarrheal. All these are rare. It is worth remembering that the procedure is performed because of the chances of repeated pain due to gall bladder inflammation or potential complications of the gallstones slipping into the bile duct with potentially life-threatening complications. Hence, it is a question of trading these problems for a small chance of what are often mild side effects of gallbladder removal.

FREQUENTLY ASKED QUESTIONS

HEPATITIS B IN PREGNANCY

CONVENOR:
Hemamala Ilango

MEMBERS:
Jayanthi V.
L. Venkatakrishna
Sheila Pillai

FAQs on Hepatitis B In Pregnancy

1. I have been married for the last 5 months and am now 2 months pregnant. I have been tested Hepatitis B positive. Should I be worried? Can I go through the pregnancy?
2. What kind of tests should I have for my Hepatitis B? Should I see a Liver Specialist?
3. I have been advised Ultrasound of the liver and a Fibroscan. Is it safe to have these scans during pregnancy?
4. Based on the viral load, how will my treatment be affected?
5. I am HBsAg positive for the last two years and I am on antiviral medications. I am planning pregnancy, should I continue the medication? Will the medications affect my baby?
6. What is the risk of transmission of Hepatitis B to my baby? How to prevent my baby from getting Hepatitis B?
7. Is it is necessary to do caesarean section as I am Hepatitis B positive to reduce the risk of transmission?
8. Is it safe for me to breastfeed my baby?
9. I am three months pregnant. My husband has been detected to be HBsAg positive and I am negative. Is it safe for me to get the Hepatitis B vaccine during pregnancy?
10. I am HBsAg positive and delivered 2 months back. I was not advised any antivirals. Do I still need to follow up with the liver specialist after the delivery?

Q I have been married for the last 5 months and am now 2 months pregnant. I have been tested Hepatitis B positive. Should I be worried? Can I go through the pregnancy?

A There are 2 implications to Hepatitis B positivity in pregnancy

- ✓ Liver health of the pregnant mother.
- ✓ Transmission of Hepatitis B infection to the baby.

- Taking the first issue, you should understand that there is an alteration in the immune activity during pregnancy. The body is immune suppressed during pregnancy; as a result, there is an increased risk of Hepatitis B infection becoming active (flares/reactivation). Most flares are mild and self-limited, but close monitoring is essential during and for at least 6 months after delivery.

- HBV transmission to the baby can occur during delivery if due precautions are not taken. You can otherwise safely go through your pregnancy but under the care and supervision of a specialist.

Q What kind of tests should I have for my Hepatitis B? Should I see a Liver Specialist?

A

- HBsAg is the first test done to diagnose if you have hepatitis B infection. Once you are detected to be HBsAg positive, it is ideal that apart from your obstetrician, you are under the care of a liver specialist.

- To pick up silent flares during pregnancy, your doctor will monitor your blood tests i.e., liver function tests, including serum ALT (SGPT) and serum AST (SGOT), at least once in 4 to 6 weeks, even if asymptomatic or more frequently if you develop symptoms like nausea, vomiting, fever or jaundice, during the pregnancy. Post-delivery monitoring will also be done for 6- 12 months or as your treating doctor decides. Apart from HBsAg test, other tests include HBeAg status (which tells if the virus is actively multiplying in the body) and the HBV DNA viral load (burden of virus in the body).

Q I have been advised Ultrasound of the liver and a Fibroscan. Is it safe to have these scans during pregnancy?

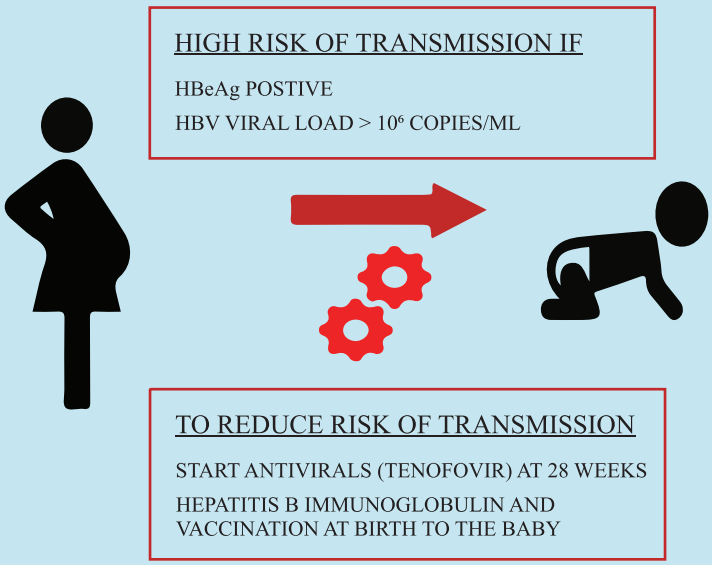
A Ultrasound and Fibroscan are safe during pregnancy. These tests are to be done when advised by the treating doctor. Fibroscan values may not be reliable during pregnancy.

Q Based on the viral load, how will my treatment be affected?

A

- Your Hepatitis B viral load and HBeAg positivity level determines the risk of transmission of the virus to your baby. If you are not already on antivirals, your doctor will request for a Hepatitis B viral load at 26-28 weeks.

- If HBeAg is positive and the viral load is very high (>10^6 copies /ml) there is 70-90% percent chance of transmitting HBV to the baby, if due precautions are not undertaken.



- These precautions include giving antiviral treatment (medicines which keep the Hepatitis B virus in check and prevents liver injury). These drugs are given in the last 3 months of pregnancy and are continued for few months after delivery. Other precautions include giving Hepatitis B vaccine and Hepatitis B Immunoglobulin (antibodies against Hepatitis B given as an injection to help fight the infection). These need to be given within 12 hours of delivery of the baby.

- If the viral load is low and HBeAg is negative you do not need to start medications during pregnancy.

Q I am HBsAg positive for the last two years and I am on antiviral medication I am planning pregnancy, so should I continue the medication; Will the medications affect my baby?

A

- If you are pregnant or planning to become pregnant, it is essential to inform your doctor about your Hepatitis B status. Antiviral medications are often used to prevent mother-to-child transmission during pregnancy and childbirth. These medications can help to suppress the virus, reduce liver inflammation and prevent further liver damage.

- Common antiviral drugs preferred during pregnancy is Tenofovir. Studies suggest these are safe to use during pregnancy. Another commonly used drug for Hepatitis B is entecavir. If you are already on the drug, it needs to be discontinued before conceiving.

Q What is the risk of transmission of Hepatitis B to my baby? How to prevent my baby from getting Hepatitis B?

A

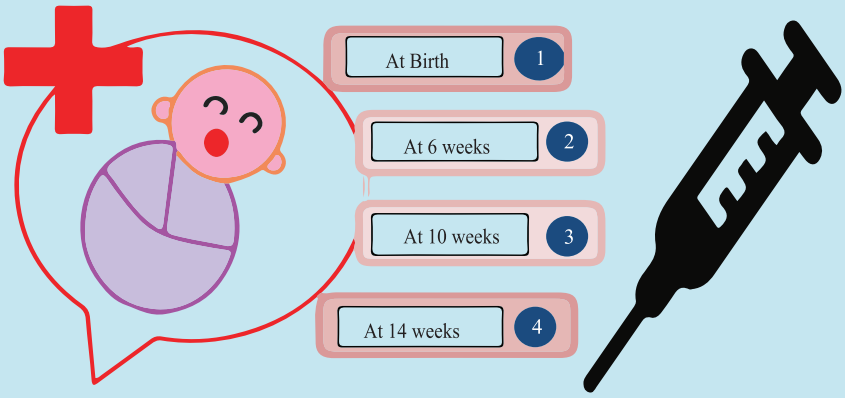
- There is a definite risk of transmission of hepatitis B to your baby. This risk of transmission is high if the mother is HBeAg positive and also when the HBV DNA viral load is more than 10^6 copies per ml. The initiation of antiviral treatment in such women will help to reduce the transmission of hepatitis B virus to their babies. The risk is highest at the time of delivery but can also occur during the pregnancy in a small percentage of patients.

- All infants born to Hepatitis B virus infected pregnant women will be administered hepatitis B immune globulin (HBIG) and the first dose of hepatitis B vaccine within the first 12 hours of birth.

ONE SHOT OF HEPATITIS B IMMUNOGLOBULIN AND HEPATITIS B VACCINE WITHIN 12 HOURS OF BIRTH

- This will be followed by three more doses of the hepatitis B vaccine at 6, 10 and 14 weeks of age. Your baby will receive the immunoglobulin and vaccine series as per the above schedule. This will help to prevent your baby from getting hepatitis B from you.
- Your baby needs to be tested for the virus at 9 -12 months of age (by HBsAg and anti-HBs titre) to determine if the vaccine schedule has worked.

HEPATITIS B VACCINATION SCHEDULE FOR CHILD



Q Is it is necessary to do caesarean section as I am Hepatitis B positive to reduce the risk of transmission?

A No particular mode of delivery is recommended for pregnant women who are HBsAg positive to prevent transmission from mother to child. Your obstetrician will take decisions regarding the mode of delivery based on the status of your pregnancy rather than the hepatitis B status.

Q Is it safe for me to breastfeed my baby?

A

- Breastfeeding should be initiated soon after birth for your baby. Your baby will be receiving hepatitis B immunoglobulin (HBIG) and the first dose of the hepatitis B vaccine within the first 12 hours of birth. The risk of mother-to-child transmission of the hepatitis B virus through breastfeeding is negligible if your baby promptly receives the HBIG/hepatitis B vaccine at birth. Also note that there is no need to delay breastfeeding till your baby is fully immunized.

- If you develop cracked and bleeding nipples or areola, breastfeeding should be stopped temporarily until complete healing occurs. Once healing occurs, you can fully resume breastfeeding. To maintain the milk supply while not breastfeeding temporarily, you can express and discard the milk.

Q I am three months pregnant, my husband has been detected to be HBsAg positive and I am negative. Is it safe for me to get the Hepatitis B vaccine during pregnancy?

A If your husband is positive for Hepatitis B and you are negative, then you are at risk of getting infected. Hepatitis B Vaccination is safe during pregnancy.

Q I am HBsAg positive and delivered 2 months back I was not advised any antivirals, Do I still need to follow up with the liver specialist after the delivery?

A

- If you are HBsAg positive and have recently given birth, it is important to follow up with a liver specialist. This is especially important if you were not advised to take antiviral medications during your pregnancy or after delivery.
- HBV infection can have serious consequences for you and it is important to monitor your liver health. Your Liver specialist may recommend additional testing, such as liver function tests or viral load testing, periodically to assess the status of your infection and determine if treatment is necessary.
- Even if you have not been advised to take antiviral medications during pregnancy or after delivery, it is still important to follow up with a liver specialist or healthcare provider to ensure that you are receiving appropriate care and monitoring.

FREQUENTLY ASKED QUESTIONS

HEPATITIS B INFECTION

CONVENOR:

Lubna Kamani

MEMBERS:

Farhana Kayani
Nazish Butt
Zaigham Abbas

FAQs on Hepatitis B Infection

1. What is Hepatitis B?
2. What are the symptoms of Hepatitis B virus infection?
3. How is Hepatitis B transmitted? What precautions should I take to avoid transmission to others?
4. How will I come to know if i am infected with hepatitis B virus?
5. Is there any treatment available for Hepatitis B Virus infection? Can I be cured from Hepatitis B?
6. I have been told that I do not need medicines. Do I still need to follow up with my doctor?
7. Do I need to follow any dietary restrictions if I am infected with HBV?
8. Am I likely to develop any complications if my Hepatitis B is not treated?
9. What will help me cope with the disease?
10. I want to get married but I am concerned about my partner and future family? And do I need to tell her/him before our marriage?
11. Who needs to be tested for Hepatitis B?

SHIVRAM PRASAD SINGH
PRESIDENT

MAMUN-AL-MAHTAB
SECRETARY GENERAL

UNDER THE AUSPICES OF SAASL WOMEN IN HEPATOLOGY FORUM

AABHA NAGRAL
CHAIRPERSON

LUBNA KAMANI
CO-CHAIRPERSON

ROKSHANA BEGUM
MEMBER SECRETARY

SAMRIDDHI POYEKAR
FAQ's CO-ORDINATOR

Q What is Hepatitis B?

A Hepatitis B virus (HBV) is a virus which is present in blood and can cause infectious liver disease. The Hepatitis B disease follows a certain course which alters from one person to another.

- Acute hepatitis B infection is the first phase of the disease (first 6 months) when a person acquires HBV. In this phase, most of the people are asymptomatic or have a mild illness. Some people may however develop symptoms like loss of appetite, nausea, vomiting, tiredness, followed by jaundice.

- The second phase of the disease is called chronic hepatitis B infection, when the infection persists beyond 6 months for the rest of the life. In the majority of the people acutely infected with hepatitis B virus presenting with jaundice (95%), the immune system fights off the virus in the body, the liver heals, symptoms resolve and liver function markers resume their normal level and the person clears the hepatitis B infection for the rest of their life but in remaining 5 % it leads to chronic infection.

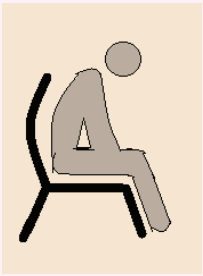
- The above percentages are reversed when babies become infected at birth or during infancy, 90 % develop chronic hepatitis B
infection due to low immunity and only 10 % can clear the infection.

- Chronic infection with hepatitis B virus may lead to cirrhosis (a state of damaged and shrunken liver), liver cancer, and ultimately liver failure.

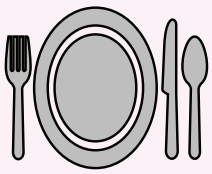
Q What are the symptoms of Hepatitis B virus infection?

A Hepatitis B infection is usually silent. Common symptoms of acute infection are

- Fever, fatigue, body aches
- Lack of appetite
- Nausea or vomiting
- Abdominal pain
- Dark, brown coloured urine
- Yellow eyes and skin (called "jaundice")
- Drowsiness (acute liver failure)

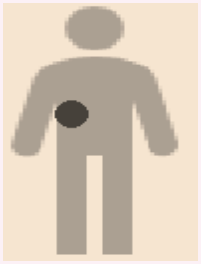


Tiredness



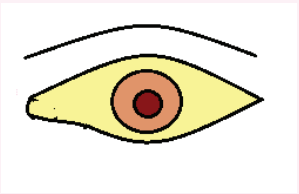
Loss of appetite

Vomiting



Pain over liver area

Confusion

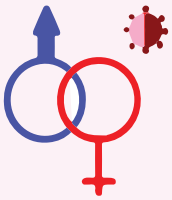


Jaundice

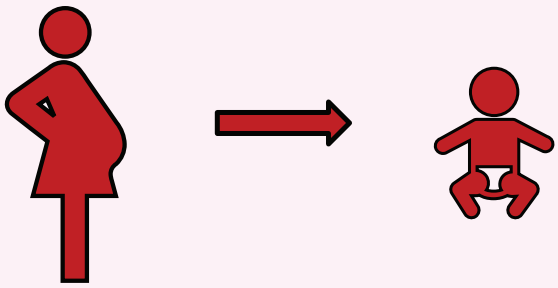
Q How is Hepatitis B transmitted. What precautions should I take to avoid transmission to others?

A Hepatitis B virus is present in the blood and body fluids of people infected with Hepatitis B virus. It can get transmitted from an infected person to another healthy person by following ways:

- Unprotected sex with an infected person
- Hepatitis B infected blood transfusions



- Accidental needlestick injury with a contaminated needle especially in health care workers
- From improperly sterilized medical, acupuncture, piercing, circumcision or tattooing equipment.
- Amongst intravenous drug abusers through the use of the same needles.
- Sharing certain tools like blades, chains, or swords during religious rituals.
- Babies can get the infection from their hepatitis B virus infected mothers during delivery and in the womb.



It does not spread via sneezing or coughing, handshaking, hugging, or sharing utensils like plates/cups or preparing a meal.

The transmission of Hepatitis B infection can be prevented with the use of currently available vaccines.This vaccine is highly efficacious and safe with excellent protection against hepatitis b which lasts for a long time.

It consists of 3 doses of vaccine over 6 months (0,1 and 6-12 months) over the upper arm (deltoid) in adults and over upper thigh in children. Some patient may need rapid vaccination (0,1,2,12 months).

All babies should be vaccinated within 24 hours of birth to protect them for a lifetime.

Other precautions to prevent transmission of hepatitis B include:

- Do not share needles
- Do not share personal care items, like toothbrushes, combs, or razors.
- Practice protected sex (use of condoms).
- Healthcare providers should use personal protective equipment.
- In case of possible exposure to HBV infection, seek medical help immediately.
- Family screening for hepatitis B is also important.

Q How will I come to know if I am infected with hepatitis B virus?

A Hepatitis B infection can be diagnosed via following methods:

Blood tests can identify the hepatitis B virus in the body. The blood tests include:

- Hepatitis B Surface antigen (HBsAg) - This test tells regarding the presence of the hepatitis B virus.
- Hepatitis B Surface antibodies (HBsAb)- This antibody provides protection against the hepatitis B virus. If this blood test is positive then it means that the protective antibodies are produced either in response to vaccination or recovery from a natural infection.
- Hepatitis B core antibodies (HbcAb IgG) - This antibody does not provide any protection. If this blood test is positive then it means that a person has been exposed to the hepatitis B virus previously.
- Hepatitis B viral load – This test gives information regarding burden of virus in the body. It is important from treatment point of view.
- Liver function tests which include ALT and AST.

Diagnostic imaging include:

- Ultrasound and/or transient liver elastography (special ultrasound) may help determine if there is scarring of the liver.

Q Is there any treatment available for Hepatitis B Virus infection. Can I be cured from Hepatitis B?

A Hepatitis B infection cannot be CURED, as there is no medication available that defeats the virus in the body.

Globally available therapies against HBV are the following antivirals taken once a day orally:

- Entecavir,
- Tenofovir disproxil (TDF) and
- Tenofovir alafenamide (TAF).

These drugs suppress the virus in the body and reduce potential liver damage, help in healing the liver, and normalize liver unction tests. In rare cases (less than 1 % if HBeAg negative and 3% if HBeAg positive), they may even get rid of the virus (i.e; become HBsAg negative).

Not all individuals with chronic hepatitis B need treatment and that will be decided after reviewing the results of tests by your doctor.

Apart from investigations, your doctor will also want to know if there is a family history of liver disease or liver cancer to decide regarding starting the treatment.

If you have more serious liver damage with complications like fluid in the abdomen, drowsiness, or blood in vomitus or black coloured stools, liver transplantation may be needed.

Q I have been told that I do not need medicines. Do I still need to follow up with my doctor?

A If you have chronic hepatitis B, you should consult a doctor regularly for periodic tests to keep a watch on your liver function, level of virus in the body and if you are developing any cancer of the liver.

You should get vaccinated against hepatitis A and tested for hepatitis C and D and HIV (there are no vaccines for these). You should stop alcohol intake and smoking and eat healthy diet with regular exercise.

Consult a health professional before taking any prescription pills, nutritional supplement and avoid the use of herbal supplements, or over-the-counter medications, as these can potentially harm the liver.

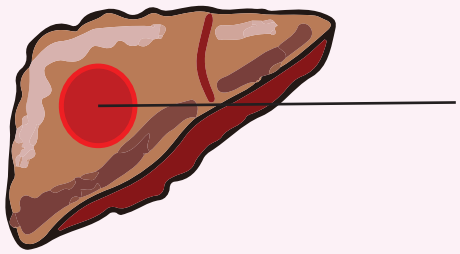
Q Do I need to follow any dietary restrictions if I am infected with HBV?

A No specific dietary restriction is recommended for those with Hepatitis B virus infection.

Q Am I likely to develop any complications if my Hepatitis B is not treated?

A Chronic hepatitis B can progress to cirrhosis which is permanent scarring of liver. This can lead to complications like fluid in belly, vomiting of blood, confusion, coma, kidney damage, liver cancer. These complications can even be life threatening.

The risk of liver cancer is highest for people with other risk factors – such as those who have cirrhosis, or a family history of liver cancer. The annual risk of developing liver cancer among people with hepatitis B is less than 1% in people without cirrhosis and 2-4% in people with cirrhosis. Regular screening for liver cancer in the form of tumor marker called Alpha feto protein and ultrasound of abdomen every 6 monthly is recommended. This helps to detect cancers at early stage when they can be cured.



Q What will help me cope with the disease?

A It is best to educate yourself about hepatitis B. You can read about Hepatitis B from authorised websites, patient information sheets and discuss with your doctor. There are many online support groups like **Hepbcommunity.org** which you can join.

Patients with hepatitis B can lead a normal life like any other individual.

Q I want to get married but I am concerned about my partner and future family. And do I need to tell her/him before our marriage?

A Yes, you can marry and have children safely. If you have end-stage liver disease (i.e., permanent scarring of liver associated with complications like fluid in belly, vomiting of blood, confusion, kidney damage), you can discuss the long-term issues with your partner and treating doctor together.

You need to share your hepatitis B status with your partner before marriage. This may be challenging especially when most marriages are "arranged" in South Asia and there is not much familiarity with your would-be partner. It is best that your partner is appraised of your condition before marriage so that he/she understands and is supportive.

Vaccinate your family and your partner against HBV and post vaccination check if they have achieved protection against the virus (Anti HBs antibody levels) to prevent transmission. Use condoms to practice safe sex until your partner is fully protected.

Q Who needs to be tested for Hepatitis B?

A All those who are at high risk of getting infected with Hepatitis B need to be tested. These include:

- Health care workers
- Those with multiple sexual partners
- Those requiring repeated blood/blood product transfusion (thalassemia / haemophiliacs)
- Chronic kidney disease patients on hemodialysis
- Injection drug users
- Family members of Hepatitis B infected person
- Planned to receive any medicines which are likely to supress immunity like chemotherapy /prolonged steroids etc.
- Prior to any organ transplantation should get tested for Hepatitis B infection which may be silent as there is a risk of flare (worsening) of the infection.

FREQUENTLY ASKED QUESTIONS

HEPATITIS C INFECTION

CONVENOR:
Mamun Al Mahtab

MEMBERS:
Ponkaj Kumar Naha
Partho Pratik Roy
Md. Jahangir Alam Sarker

FAQs on Hepatitis C Infection

1. What is hepatitis C infection?
2. How did I acquire Hepatitis C infection?
3. What measures should I take to prevent my family members from getting HCV infection?
4. What are the symptoms of Hepatitis C infection?
5. What are the complications of Hepatitis C infection?
6. Can the infection be cured?
7. What are the side effects of treatment?
8. Is it necessary to receive treatment if I do not have any symptoms of hepatitis C?
9. Do I need to follow up with my doctor after treatment?
10. I have chronic hepatitis C infection. Can I get pregnant? What is the risk of transmission of Hepatitis C to my child?

SHIVRAM PRASAD SINGH
PRESIDENT

MAMUN-AL-MAHTAB
SECRETARY GENERAL

UNDER THE AUSPICES OF SAASL WOMEN IN HEPATOLOGY FORUM

AABHA NAGRAL
CHAIRPERSON

LUBNA KAMANI
CO-CHAIRPERSON

ROKSHANA BEGUM
MEMBER SECRETARY

SAMRIDDHI POYEKAR
FAQ's CO-ORDINATOR

Q What is hepatitis C infection?

A Hepatitis C is a viral infection which when acquired causes inflammation (swelling of liver) and damage to the liver. If the infection is left untreated for many years it may also cause scarring of the liver i.e., Cirrhosis of Liver.

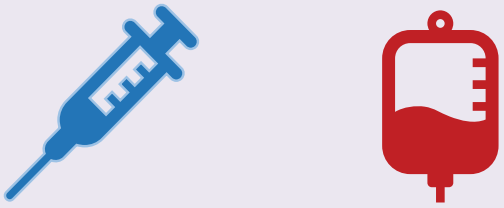
Q How did I acquire Hepatitis C infection?

A Hepatitis C virus spreads through contact with contaminated blood.

The infection can be acquired by:

- Sharing personal items such as common needles, razors, nail clippers, tooth brushes.

- Use of contaminated instruments during dental procedures.
- Tattooing
- Sharing of needles, syringes especially during illicit drug abuse
- Transfusion of contaminated blood



- Sexual contact with an infected person (less common)
- Mother to child transmission during pregnancy and delivery.

- During hemodialysis
- During solid organ transplant from infected person

Q What measures should I take to prevent my family members from getting HCV infection?

A It can be transmitted by different way such as sharing razor, toothbrushes, blood transfusion, child birth etc. But if you are treated completely chance of transmission from you is unlikely.

Q What are the symptoms of Hepatitis C infection?

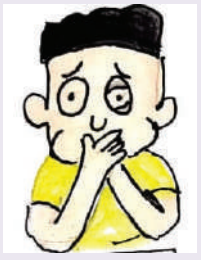
A Hepatitis C infection when recently acquired is called acute infection. Majority of acute infections do not cause any symptoms. In case symptoms are present, they include:

- Fatigue
- Nausea, loss of appetite, Vomiting
- Low grade fever
- Bodyache
- Jaundice.

Fatigue

Loss of appetite

Jaundice



Nausea and Vomiting

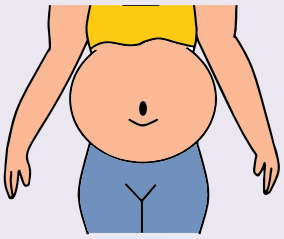
Fever

Q What are the complications of Hepatitis C infection?

A Long-term untreated hepatitis C infection can progress to liver cirrhosis (liver scarring) and its complications which include:

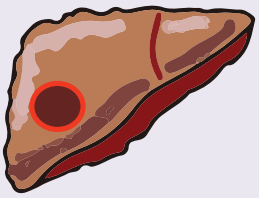
- Blood vomits/black stools
- Buildup of fluid in belly
- Confusion, coma
- Liver cancer
- Kidney damage

Hematemesis (blood in vomitus)



Ascites (Build up of fluid belly)

Confusion



Liver cancer

Q Can the Hepatitis C infection be cured?

A Yes, Hepatitis C infection can be cured with medications. Depending upon the degree of liver damage, your doctor will prescribe you antiviral medications (like Sofosbuvir with Daclatasvir/Velpatasvir/Ledipasvir/Ribavarin) for 12 or 24 weeks. You will be advised a blood test (HCV RNA Quantitative) 12 weeks after completion of the treatment, to documen complete clearance of the infection (Sustained virological response – SVR) from the body.

In case the infection has caused severe liver damage with scarring (cirrhosis) regular checkup for liver cancer is needed which includes a blood test (Alpha fetoprotein a tumor marker) and ultrasound of abdomen every 6 months.

Q What are the side effects of treatment?

A The medicines used for treatment of hepatitis C (Sofosbuvir/ Daclatasvir/Velpatasvir) infection are generally safe and do not cause serious side effects. Ribavarin may cause anemia and regular monitoring of hemoglobin as recommended by your doctor during treatment is necessary. Women should avoid getting pregnant while taking ribavirin.

Q Is it necessary to receive treatment if I do not have any symptoms of hepatitis C?

A Yes, one should receive timely treatment after diagnosis of Hepatitis C to prevent liver damage even if there are no symptoms. If the infection is left untreated for many years, one can develop permanent scarring of liver (liver cirrhosis), liver cancer (hepatocellular carcinoma) and complications of liver cirrhosis (blood vomit, fluid in belly, confusion, altered sensorium). A liver transplant may also be required for liver cirrhosis and its complications listed above.

Q Do I need to follow up with my doctor after treatment?

A After completion of the treatment your doctor will recommend blood tests to document clearance of the infection from the body. If you have developed liver cirrhosis due to Hepatitis C, then regular follow up with doctor to monitor development of complications of cirrhosis and liver cancer is necessary after completion of treatment with antivirals.

Q I have chronic hepatitis C infection. Can I get pregnant, What is the risk of transmission of Hepatitis C to my child?

A You can safely become pregnant if you have been treated with antiviral medicines and cleared infection provided you do not have severe liver damage. You need to consult your liver doctor before planning a pregnancy.

The risk of transmission from mother to child if the mother has not received treatment is around 3-7% and depends on many factors. It is advisable to get treated before planning pregnancy.

If you are incidentally detected to have hepatitis C infection during pregnancy, your doctor will treat you for the same after the delivery of child as the antiviral medicines have not been approved for use during pregnancy

FREQUENTLY ASKED QUESTIONS

HEPATOCELLULAR CARCINOMA

CONVENOR:
Prachi Patil

MEMBERS:
Prashant Bhangui
Ashish Kumar

FAQs on Hepatocellular Carcinoma

1. What is Hepatocellular cancer (HCC) and how common is it ?
2. Who is at a higher risk for developing HCC?
3. If I am at risk of developing HCC, what precautions should I take? Are there any screening tests available?
4. Can family members of a patient with HCC also be affected by it?
5. What tests help diagnose HCC?
6. Can HCC be cured through surgery? What are the surgical options available, and what is their success ?
7. What are the non-surgical treatment options for HCC, and can they completely cure cancer?
8. After undergoing treatment, can HCC come back? What are the treatment options if it does?
9. If I have been told that there is no definite treatment for my advanced cancer possible, are there any other options?

Q What is Hepatocellular cancer (HCC) and how common is it?

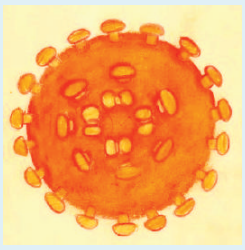
A The liver consists of different types of cells, which can develop different types of tumors, both benign (non-cancerous) and malignant (cancerous). Liver cancer is a serious condition that can be life-threatening. The most common primary liver cancer is hepatocellular cancer (HCC). It affects millions of people worldwide and is the fifth most common cancer globally. It is also the third leading cause of cancer-related deaths. HCC is more common in men than women, and its incidence is high in certain regions like Mongolia and Africa, where viral hepatitis is prevalent. HCC is relatively common in India and is one of the leading causes of cancer-related deaths, primarily influenced by factors such as viral hepatitis, liver diseases, and lifestyle factors.

Q Who is at a higher risk for developing HCC?

A Over 90% of HCC cases occur in patients with cirrhosis (a chronic liver disease where scar tissue replaces healthy liver tissue, forming abnormal nodules). Common causes of cirrhosis are:

- Long-standing viral hepatitis (Hepatitis B or C) and excessive alcohol consumption.
- Non-alcoholic fatty liver disease (NAFLD), which is related to lifestyle changes and conditions like diabetes, high blood pressure, and thyroid disorders, is an increasingly recognized cause of cirrhosis. All these factors increase the risk of HCC.
- Additional risk factors for HCC include being male, obesity or being overweight, having diabetes (linked to NAFLD and HCC).

RISK FACTORS FOR HCC



- Certain inherited metabolic disorders
- Exposure to aflatoxin (a plant fungus found in contaminated wheat, peanuts, rice, corn, and soybeans)
- Budd-Chiari syndrome (blockage of hepatic veins causing liver damage)
- Rare genetic conditions like tyrosinemia, alpha-1-antitrypsin deficiency, and Glycogen storage disorder type 1.

Regular surveillance and follow-up with a liver specialist are crucial for individuals at risk, as early detection of tumors allows for curative treatment.

Q If I am at risk of developing HCC, what precautions should I take, Are there any screening tests available?

A

- Long-standing viral hepatitis B and C infections are major risk factors for cirrhosis and HCC. Vaccination for hepatitis B and early and appropriate treatment of hepatitis B and C infections can reduce the risk of developing HCC.
- Limiting alcohol consumption or abstaining from it can also help lower the risk.
- NAFLD, characterized by fat accumulation in the liver, can progress to non-alcoholic steatohepatitis (NASH), a more severe form of the disease associated with liver inflammation, scarring, and an increased risk of HCC. Managing weight, diabetes, hypertension, and thyroid disorders can help reduce the risk.

It's important to note that having a risk factor does not necessarily mean the development of HCC. Risk factors indicate higher chances of being diagnosed with HCC.

Consult a liver specialist who can assess your risk factors and recommend appropriate screenings. Typically, a liver ultrasound and a blood test (Alpha-Fetoprotein or AFP, a tumor marker) every 6 to 12 months are recommended for early detection of HCC when it's more likely to be curable.

Q Can family members of a patient with HCC also be affected by it?

A A family history of liver disease can be a risk factor for developing HCC, particularly when genetic disorders or viral hepatitis contribute to the development of liver cirrhosis. The highest risk of HCC may be observed in families where a hereditary component combines with hepatitis B virus infection. In such cases, screening all immediate relatives is important to detect early-stage disease, which is often small and asymptomatic. Your liver physician can determine if screening is necessary for your family.

Q What tests help diagnose HCC?

A If your doctor suspects HCC based on signs or symptoms, they may conduct several tests to confirm the diagnosis. These tests may include:

- **Blood tests:** These check for abnormalities in liver function and the presence of tumor markers such as AFP (Alpha-Fetoprotein) and PIVKA-II.
- **Imaging tests:** A good quality CT scan or MRI scan can provide typical findings that indicate HCC without the need for a biopsy.
- **Biopsy:** Although rarely required due to the high quality of imaging, a biopsy is the most reliable way to confirm a liver cancer diagnosis and may be used if the diagnosis is uncertain.

Q Can HCC be cured through surgery. What are the surgical options available, and what is their success rate?

A

- HCC is often treatable, especially when detected at an early stage. Treatment options vary depending on the type, stage (the degree of spread), location of cancer, and the patient's overall health.

- Surgery is the preferred treatment for early-stage HCC, especially when the tumour is small and has not spread. The goal of surgery is to remove the cancerous part of the liver along with some surrounding liver tissue.

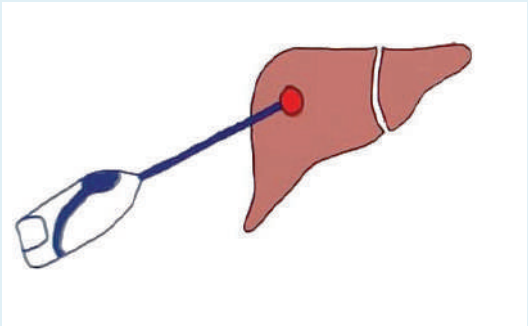
- Surgical options include liver resection (removing a portion of the liver) or liver transplantation (removing the entire liver and replacing it with a healthy liver from a deceased or living donor). Liver resection is suitable for patients with good liver function and early-stage HCC. Liver transplantation is considered the best option for patients with abnormal liver function, as it removes the diseased liver entirely, reduces the risk of HCC recurrence (coming back), and provides a new healthy liver.

- The reported success of surgery varies depending on various factors, but when HCC is treated with curative surgery, particularly liver transplantation, the 5-year survival rate can be over 70%.

Q What are the non-surgical treatment options for HCC, and can they completely cure cancer?

A In some cases, non-surgical treatments may be considered for patients who are not suitable for surgery:

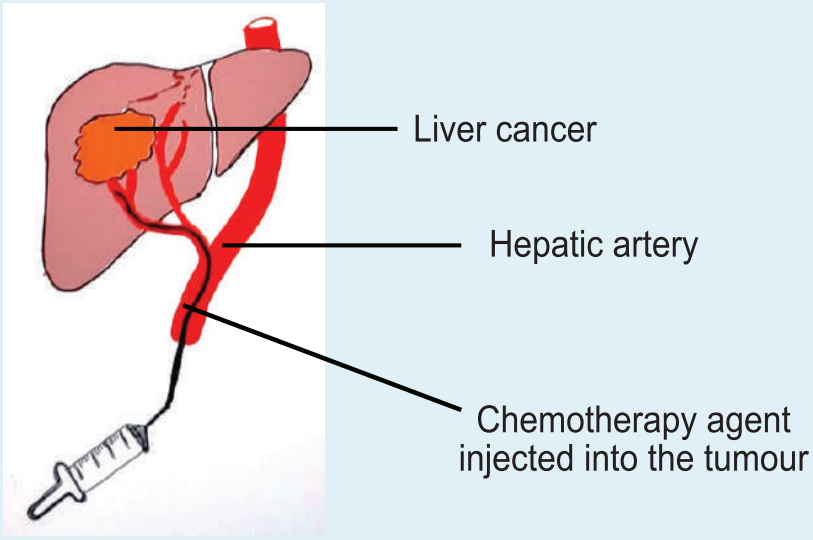
- **Ablation:** A treatment method that uses heat or other energy sources to destroy cancerous cells in the liver. During ablation, a doctor will focus on the tumour in the liver and apply heat or energy directly to it. This can be done in different ways. One common method is called radiofrequency ablation (RFA), where a special needle is inserted into the tumour and releases high-frequency electrical currents. These currents generate heat, which heats up and destroys the cancer cells. Another method is called microwave ablation, which uses microwave energy to heat and destroy the tumour cells. Similarly, there is also a method called cryoablation, which involves freezing the tumour using extremely cold temperatures.



Radiofrequency Aclation of liver tumor

- **TACE (Transarterial Chemoembolization):** A treatment method that combines chemotherapy and blocking blood flow to the tumour. TACE is often considered for liver tumours that are larger in size or when surgery is not a suitable option. It can help in controlling the growth of the tumour, reducing symptoms, and improving the overall quality of life.

TRANSARTERIAL CHEMOEMBOLISATION



- **TARE (Transarterial Radioembolization):** A treatment that uses tiny radioactive beads to deliver radiation directly to the tumour. These beads are injected into the blood vessels that supply the tumour, where they release radiation to destroy the cancer cells while minimizing damage to healthy liver tissue. TARE aims to shrink the tumour, relieve symptoms, and potentially extend survival by targeting the cancer cells with radiation while sparing the surrounding healthy liver tissue.

- **Systemic therapy:** Refers to the use of oral or intravenous medicines that circulate throughout the body to target and treat liver cancer cells wherever they may be located.

- **SBRT (Stereotactic Body Radiation Therapy):**
A non-invasive treatment for liver cancer that uses highly focused radiation beams to deliver precise and intense doses of radiation to the tumour, effectively destroying the cancer cells while minimizing damage to surrounding healthy tissue.

Q After undergoing treatment, can HCC come back What are the treatment options if it does?

A Despite treatment, there is a possibility of HCC coming back. The treatment options for such HCC depend on the stage of the recurrence and the liver function. The available options may include repeat surgery, transplantation, non-surgical therapies, or systemic therapy. The treatment plan will be decided based on an individual's specific situation and may involve a multidisciplinary (specialists belonging to different specialties) team of healthcare professionals.

Q If I have been told that there is no definite treatment for my advanced cancer possible, are there any other options?

A If no definitive treatment is possible due to advanced HCC, supportive therapy becomes the focus. Supportive therapy aims to control symptoms and improve quality of life. This may involve treatment to control specific symptoms like pain, manage fluid accumulation in the abdomen (ascites), jaundice, or other supportive measures. Supportive care specialists can provide comprehensive support to improve overall well-being and comfort.

FREQUENTLY ASKED QUESTIONS

INTRHEPATIC CHOLESTASIS OF PREGNANCY (ICP)

CONVENOR:

C.E. Eapen

MEMBERS:

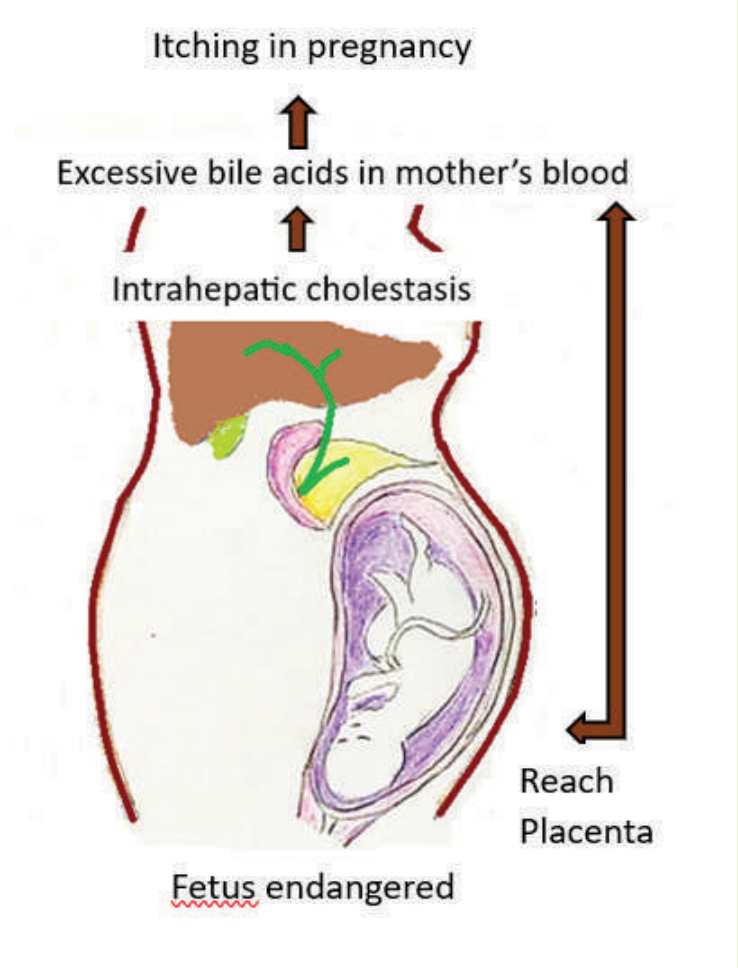
Akash Roy
Mithra Prasad
Pallavi Garg

FAQs on ICP

1. What is intrahepatic cholestasis of pregnancy?
2. I did not have any liver disease prior to getting pregnant, how is it possible that I have developed liver disease (cholestasis) during pregnancy?
3. What are the symptoms of cholestasis of pregnancy that should prompt me to consult a doctor immediately? Which women are more likely to develop this disease?
4. How can I know for sure that I am suffering from cholestasis of pregnancy? Can my symptoms be due to another cause?
5. How serious is this disease? Are there any risks to me and my baby in the womb due to cholestasis of pregnancy?
6. What tests are needed to find out if I have cholestasis of pregnancy? Are any tests needed to find out other causes for my symptoms?
7. What is the treatment for cholestasis of pregnancy?
8. Can I breast feed my baby if I had cholestasis of pregnancy? Can cholestasis persist after delivery of the baby?
9. If I have had cholestasis of pregnancy previously, can this recur in subsequent pregnancies?
10. What measures can I take to reduce the risk of cholestasis of pregnancy?

Q What is intrahepatic cholestasis of pregnancy?

A Cholestasis refers to slowing or blockage of bile flow out of liver. Bile is the digestive fluid made in the liver that helps in absorption of fats. Instead of going from the liver to the small intestine, bile builds up in the liver in case of cholestasis. This can lead to accumulation of substances normally secreted in the bile (like bile acids) in blood stream. Intrahepatic cholestasis of pregnancy is a reversible cholestasis influenced by hormones and occurs only in pregnancy.



Q I did not have any liver disease prior to getting pregnant, how is it possible that I have developed liver disease (cholestasis) during pregnancy ?

A Intrahepatic Cholestasis of Pregnancy develops only during pregnancy and is usually unrelated to underlying prior liver disease. The exact reason why this occurs is not fully understood. Factors like genetic susceptibility (your genetic makeup) and altered hormone (estrogen and progesterone) levels during pregnancy may be responsible.

Q What are the symptoms of cholestasis of pregnancy that should prompt me to consult a doctor immediately. Which women are more likely to develop this disease?

A

- The symptoms generally start in late stages (2nd or 3rd trimester) of pregnancy. The symptoms include intense itching (especially over palms of hands and soles of feet or all over body), fatigue (tiredness), discomfort over right lower side of rib cage (the liver area), loss of appetite, nausea, dark urine, pale-coloured stools and jaundice (uncommon), oily stools.

- This disorder occurs more often in older women and in women with twin pregnancy, past episode of cholestasis of pregnancy or family history of similar illness.

Q How can I know for sure that I am suffering from cholestasis of pregnancy. Can my symptoms be due to another cause?

A

- Itching in pregnancy can be due to other reasons like skin infection. Generally, itching of cholestasis of pregnancy is not accompanied by skin rash.
- Clinical assessment by a doctor and investigations like blood tests and ultrasound scan are needed to exclude other diseases which mimic cholestasis of pregnancy (please see Q. No. 6).

Q How serious is this disease. Are there any risks to me and my baby in the womb due to cholestasis of pregnancy?

A

- Cholestasis of pregnancy can cause troublesome symptoms like itch; however, it is not life-threatening for the pregnant woman. It can temporarily cause poor fat absorption in women but occurs rarely.
- In contrast, there are increased risks to baby which include preterm birth (early birth of baby, before 37 weeks) and fetal death (death of the baby prior to delivery), stillbirth (the death of baby prior to or during delivery). The risks to the baby are increased with higher bile acid levels in the mother's blood.

Q What tests are needed to find out if I have cholestasis of pregnancy. Are any tests needed to find out other causes for my symptoms?

A

- After clinical assessment (taking history and physical examination), your doctor will ask for tests to diagnose cholestasis of pregnancy. Among liver function tests, serum transaminase (SGPT/SGOT) levels are usually raised upto 2-3 times. Serum alkaline phosphate level is raised; however, this can also be physiological rise in pregnancy. Bilirubin levels may be raised in some patients. Typically, serum bile acid levels are high. These tests give information regarding how well your liver is functioning and amount of bile acids in blood.

- Tests to exclude other diseases like viral hepatitis (diagnosed by blood tests) and block of bile ducts (diagnosed by ultrasound scan) are done, as decided by the treating doctor.

Q What is the treatment for cholestasis of pregnancy?

A

- Treatment is aimed at reducing symptoms experienced by the pregnant woman and timely delivery to optimize fetal outcomes. Ursodeoxycholic acid (UDCA) is the preferred medical treatment (daily dose: 10-15 mg/kg body weight). Anti-histaminics (like chlorpheniramine/ cetirizine loratidine) or cholestyramine (bile acid binding agent) are other medicines which may be needed in some patients to reduce itching.

- Close monitoring of fetal (baby's) well-being is of utmost importance which will be done by your doctor. If you notice decreased movements of baby, you need to report to your doctor immediately. The timing of delivery is crucial and needs to be decided by your Obstetrician. Serum bile acid levels, if available, can help guide treatment decisions. As the risk to baby's survival increases with rising bile acid levels your doctor might consider inducing labor even before your expected date of delivery.

Q Can I breast feed my baby if I had cholestasis of pregnancy. Can cholestasis persist after delivery of the baby?

A It is safe to breastfeed baby born to mother with cholestasis of pregnancy. The cholestasis and itching usually resolves 2-3 weeks after delivery.

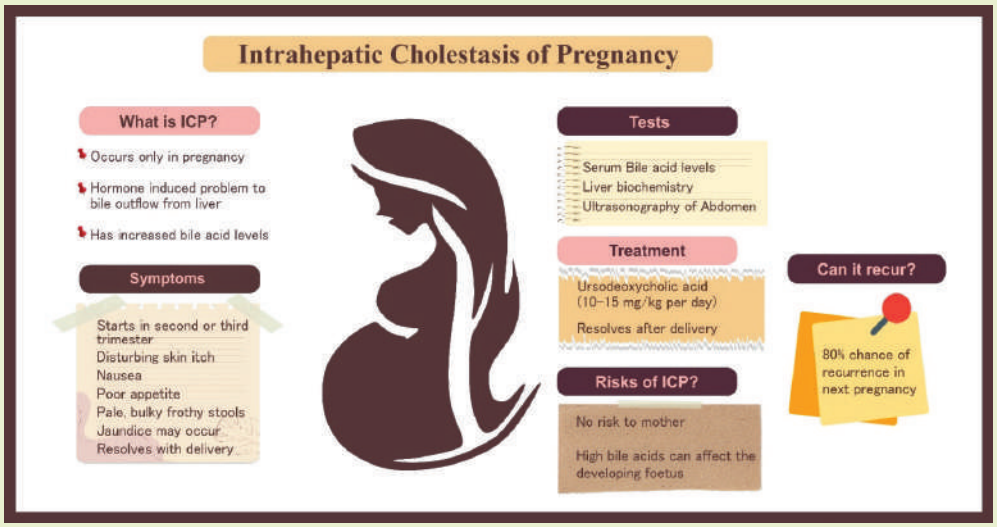
Q If I have had cholestasis of pregnancy previously, can this recur in subsequent pregnancies?

A Chances of recurrence of cholestasis of pregnancy in subsequent pregnancy are quite high (upto 50 - 80%). Please share any history of cholestasis in a previous pregnancy with your doctor.

Q What measures can I take to reduce the risk of cholestasis of pregnancy?

A Unfortunately, there are no proven measures to prevent cholestasis of pregnancy. In a woman with prior history of cholestasis of pregnancy, it is better to avoid use of tablets containing oestrogen or progesterone (used to treat menstrual disorders or used as contraceptives) if possible, as these medicines may trigger an episode of jaundice. For contraception progesterone only or non-hormonal methods can be used.

INTRAHEPATIC CHOLESTASIS OF PREGNANCY



FREQUENTLY ASKED QUESTIONS

JAUNDICE IN YOUNG CHILDREN

CONVENOR:

Malathi Sathiyasekaran

MEMBERS:

Anshu Srivastava

Geetha Mammayil

Shivani Deswal

FAQs on Jaundice In Young Children

1. What is jaundice and why do the eyes become yellow? What are the two types of jaundice?
2. Why do children get “liver jaundice” and what is the most common cause?
3. What are the methods in which jaundice will spread to others?
4. What are the common complaints (symptoms) and findings (signs) in children with jaundice?
5. When liver is the culprit how long will the jaundice last and will it recur?
6. Can I manage my child at home doctor?Will he /she require hospitalization, if so, when?
7. Are blood tests always necessary doctor if yes, which and when?
8. My family advice to avoid certain food and give certain herbs for my child during jaundice? Is it myth or fact?
9. What are the steps available to prevent common jaundice in children ?
10. Doctor I heard that if the liver fails in a child with severe jaundice, liver transplantation will help is it true ?

SHIVRAM PRASAD SINGH
PRESIDENT

MAMUN-AL-MAHTAB
SECRETARY GENERAL

UNDER THE AUSPICES OF SAASL WOMEN IN HEPATOLOGY FORUM

AABHA NAGRAL
CHAIRPERSON

LUBNA KAMANI
CO-CHAIRPERSON

ROKSHANA BEGUM
MEMBER SECRETARY

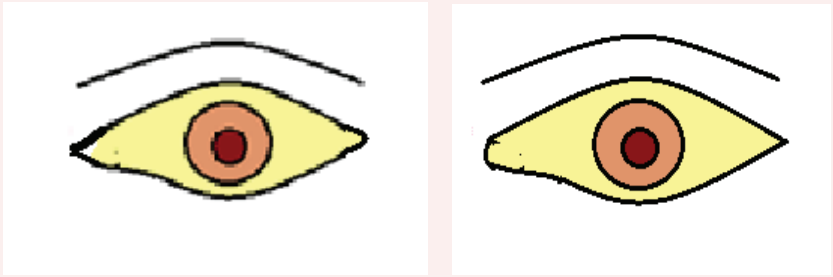
SAMRIDDHI POYEKAR
FAQ’s CO-ORDINATOR

Q What is jaundice and why do the eyes become yellow. What are the two types of jaundice?

A

- Jaundice is a state where the sclera (white of the eye), skin and mucus membrane become yellow due to increase in bilirubin. It is best seen in the eyes and difficult to appreciate in the skin of dark complexion persons.

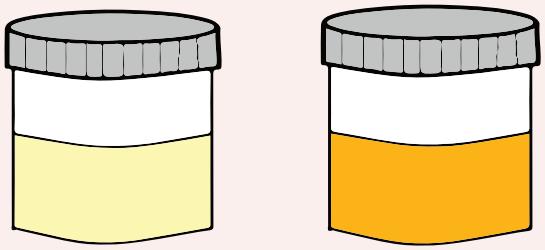
- Bilirubin is formed by breakdown of old red blood cells. Normally, it is taken up by the liver, conjugated and then excreted in bile through the bile ducts into the intestine. Whenever the serum levels of bilirubin increase it is seen as jaundice.



Based on the colour of the urine, jaundice is of two main types:

- Unconjugated jaundice- eyes are yellow but urine is normal colour. This occurs due to excess break down of red blood cells (RBC). The liver is normal in these patients. This is seen in 60-80% newborns, as their liver is immature and usually resolves in 4-10 days.

- Conjugated jaundice- eyes are yellow and urine is dark yellow. This is also called as “liver related jaundice” .



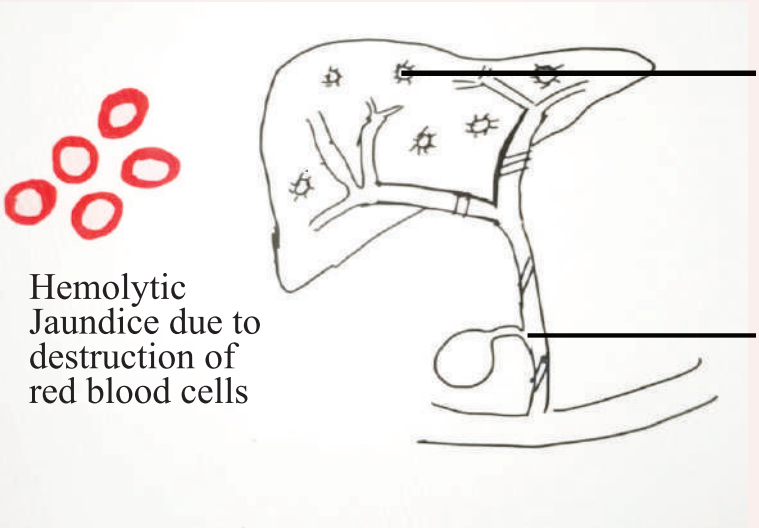
Normal color (left) and High colored urine (right)

Q Why do children get "liver jaundice" and what is the most common cause?

A "Liver Jaundice" and can be divided into two main types:

- Hepatocellular Jaundice -the cells of the liver are diseased. This can be acute (short duration) or chronic (prolonged) jaundice.

- Obstructive jaundice- there is obstruction in the bile ducts i.e the tubes through which bile from the liver reaches the intestine.



The causes of liver jaundice (conjugated jaundice) can be broadly classified as:

- Diseases of liver (Hepatocellular Jaundice): this can be due to acute injury or chronic damage and scarring of liver known as cirrhosis. The main causes include-

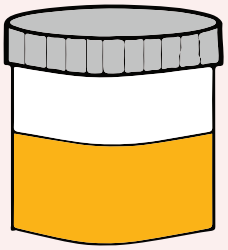
1) Acute

✓ Acute viral hepatitis (hepatitis A, B, E) is the most common cause of jaundice in children. Other infections like dengue, enteric fever, leptospirosis can also have jaundice.

✓ Drugs like paracetamol, anti-TB medications and some ayurvedic preparations can cause damage to liver and jaundice.

2) Chronic-This is usually known as chronic liver disease or cirrhosis. Causes include:

- ✓ Immune injury (autoimmune hepatitis)
- ✓ Metabolic defects like impaired copper excretion (Wilsons disease), defect in synthesis and excretion of bile.
- ✓ Block in veins draining the liver (Budd Chiari syndrome).
- Diseases of the bile ducts- Eyes are yellow, urine is high colored and stools are pale. The main causes include non-formation of proper bile duct in neonates (biliary atresia), bile duct block due to stones or worms or narrowing (stricture).



High colored urine

- There is a separate group of disease where several members of the family may have jaundice due to genetic defects in the normal functioning of the liver like Wilson disease etc.

Q What are the methods in which jaundice will spread to others?

A Jaundice caused by viruses such as hepatitis A (HAV), hepatitis B (HBV), Hepatitis C (HCV) and hepatitis E (HEV) are the ones which can spread from one person to another.

- Hepatitis A and E: These two viruses are spread by eating or drinking contaminated food and water. The food has the infective virus which causes infection after ingestion. The usual time
interval between intake of infected food and jaundice is long (~20-50 days) and often forgotten by the patient.

- Hepatitis B and C: These two viruses on the other hand spread by giving infected blood/blood products, using unsterile needles for injections, close contact with a person who has the infection (through body fluids- blood, genital secretions) and from infected mother to baby. The time interval between exposure of the infected material and onset of disease is much longer 30 -150 days.

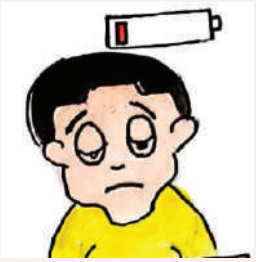
Q What are the common complaints (symptoms) and findings (signs) in children with jaundice?

A The common symptoms which the patient will experience and the common signs the doctor will recognize in these children when the jaundice is due to acute viral hepatitis or inflammation of the liver are tabulated below. In the classic presentation the following stages are seen:

Stages	Complaints (symptoms)	Doctor's findings (signs)
Stage I. Pre-Jaundice (Prodrome).	Fever. nausea, vomiting loss of appetite, pain right side of abdomen, urine may appear high colored. Duration 2-7 days.	Child may look sick, febrile, liver is enlarged and tender.
Stage II Jaundice (Icteric)	Jaundice, appetite usually improves after appearance of jaundice, fever settles, itching ±,urine high colored and stools pale. Duration 7-14 days	Yellow eyes. enlargement of liver
Stage III Recovery	Jaundice lightens, appetite improves, urine color lighter and stools more yellow in color. Duration 7-10 days	Child more cheerful, no abdominal tender-ness

- Less common symptoms seen during stage II are skin rash, joint pain and abdominal distension. The illness as shown usually lasts for 14- 40 days and child recovers completely. Child can go to school and resume normal activity once jaundice clears and appetite improves.

Fever



Fatigue

Loss of appetite

Nausea and vomiting

Pain in right side of belly

Dark urine, pale stool, diarrhea

- However, a small group can present with prolonged jaundice and itching or fever. A few about 1 % will progress to liver failure associated with a high mortality rate if liver transplantation is not done. There is also a possibility of progressing to chronic liver disease if the infection is due to hepatitis B virus (5-10%) or hepatitis C virus (40-50%).

In chronic liver disease, obstructive jaundice and hemolytic jaundice the signs and symptoms are shown below:

Disease	Symptoms	Signs
Chronic liver Disease	Jaundice, growth failure, abdominal distension, swelling of feet, decreased urine output, Gastrointestinal bleed	Reddish palms, enlargement of liver and spleen, accumulation of fluid in the abdomen, veins on the abdominal wall
Obstructive jaundice	Jaundice, pain right side or upper abdomen, fever with chills, itching, high colored urine and pale stools	Liver is enlarged may be tender during examination
Hemolytic Jaundice	Jaundice, anemia, normal colored urine and stools	Pallor and enlarged spleen

Q When liver is the culprit how long will the jaundice last and will it recur?

A

- The duration and recurrence of jaundice depends on the cause and whether appropriate treatment has been given or not.
- All patients with jaundice should be seen by a doctor to find out the type of jaundice, offer specific treatment and assess severity of liver injury (acute vs chronic).
- Delay in therapy can cause problems and poor outcome. In acute viral hepatitis, jaundice usually lasts for 4-6week. In other infectious causes it will resolve in a few days, with complete recovery of the liver to normal.
- Jaundice can be recurrent or prolonged in hemolytic jaundice, biliary obstruction or chronic liver disease. In biliary obstruction, it usually resolves only after treatment with antibiotics and removal of obstruction (endoscopic or surgery) is done.
- In CLD, the liver damage is advanced and the patient shows improvement with treatment but complete recovery is uncommon. These patients need regular follow-up with the doctor.

Q Can I manage my child at home doctor Will he /she require hospitalization, if so, when?

A We know that jaundice can be a presentation of an acute self-limiting illness or a chronic illness. The majority of children with jaundice due to viruses HAV or HEV which is self-limiting can be managed at home and will recover. However even in these children there are some warning symptoms, which if present may necessitate hospitalization.

WARNING SYMPTOMS
Persistent vomiting
Persistent Fever
Bleed: Gastrointestinal or mucosal
Deepening Jaundice
Irritable, Sleeps more than usual, drowsiness
Appetite not improving
Decreased urine output
Swelling of legs and abdominal distension
Pallor
Seizures

In those with jaundice due to chronic liver disease or biliary obstruction it is best to follow medical advice for hospital visits and treatment.

Q Are blood tests always necessary doctor if yes, which and when?

A Blood tests are not always necessary for children with the common jaundice seen in day-to-day practice because the majority will recover even before they see the doctor.

If a child is brought to the hospital the doctor after examination may do some investigations.

Which will depend on the suspected cause of jaundice:

- If common acute viral hepatitis is suspected the following are done

Acute Viral hepatitis	Investigations
To confirm jaundice is caused by liver disease and assess severity	Complete blood count, biochemical tests of liver (serum bilirubin, elevated ALT /AST), Prothrombin Time /INR
To ascertain the etiology.	Viral markers (hepatitis A IgM antibody, hepatitis E IgM antibody, HBsAg)
To check for complications	Renal function test
During follow up. It is necessary to follow the child till jaundice clears which usually occurs by 3 months	Liver function test and INR

- In children with viral marker negative jaundice or those with atypical presentation like rash, shock , enlarged lymph nodes some more investigations may be necessary to exclude other viruses (Dengue, Epstein Barr virus) ,bacteria (typhoid , leptospirosis) ,autoimmune liver disease, Wilson disease etc.

- If the child has features suggestive of chronic liver disease (jaundice more than 3 months ,free fluid in the abdomen , firm/hard liver) the doctor will do basic tests and some special tests like ultrasonography of the abdomen , endoscopy and liver biopsy. Tests such HBsAg, anti HCV, autoantibodies and Wilson disease workup may be done depending on clinical clues.

- If there is suspicion of obstructive jaundice based on history (pale stools , itching , pain abdomen) apart from CBC,LFT, INR,ultrasonography of the abdomen will help in identifying the cause (gall stones ,choledochal cyst) and site of obstruction.

- If hemolytic jaundice is suspected (cola coloured urine, pallor) then CBC (which may show a low hemoglobin), LFT (will show elevated indirect bilirubin and normal transaminases) and reticulocyte count are done as first line tests.

Q My family advice to avoid certain food and give certain herbs for my child during jaundice Is it myth or fact?

A Jaundice is probably one of the most common conditions which is surrounded from time immemorial by various myths and use of native and traditional medicines. This includes rigorous diet modifications, cruel and painful branding to herbal medicines. Let us look at the Myths and Reality of Diet and “Native” medicines.

MYTHS ☒	FACTS ☑
Bland, boiled food without salt.	• Nutritious balanced diet should be given to the child along with adequate fluids. • In pre jaundice and jaundice stage since appetite is initially low with nausea / vomiting fluids like soup, fruit juice are given. The diet should be improved with steamed food, fruits and vegetables. Seasoning of food is allowed. Salt can be added and fluids should not be restricted. • During the stage of recovery the child can be encouraged to take normal diet.
Avoid all yellow colored food and addition of turmeric in diet.	• Yellow food consumption has no relation to yellow skin colour or urine colour
Avoid non vegetarian diet during the illness and for several months.	• The child's liver is sick and needs energy to work and build new cells for recovery. • If adequate energy and protein is not provided in the diet, the body will steal energy from its own muscle and fat which is bad for the child.
Native medicines including various herbs remove yellow poison	• Medications are usually not necessary for the common self limiting jaundice due to Hepatitis A and E . • There are other several causes of jaundice for which the treatment in form of medications, endoscopy or even surgery is required. • Administering various herbs may actually worsen the liver disease resulting even in liver failure. Avoid herbal medications.

Q What are the steps available to prevent common jaundice in children?

A

- The viruses HAV and HEV can be easily prevented by proper hygiene ,washing hands in running water and ensuring that the water and food consumed is clean.
- Boiled and cooled water is safer than mineral water.
- Travellers should avoid drinking fresh juices since this is usually mixed with water or ice which could be contaminated.
- Tetra pack juices, although not healthy, are safer. Ice creams and reheated food also have been sources of spread of jaundice.
- The viruses HBV and HCV can be prevented by proper disposal of syringes, sterilization techniques and screening of blood before transfusions. However, it is common among IV drug abusers, after tattooing and acupuncture if proper sterility is not maintained.
- Vaccines are available for preventing Hepatitis A and B and should be given to all children as per the immunization schedule.

PREVENTION OF TRANSMISSION OF VIRAL HEPATITIS IN CHILDREN

Hand Washing under running water

Proper screening of blood before transfusion

Syringes to be disposed off properly

Q Doctor I heard that if the liver fails in a child with severe jaundice, liver transplantation will help is it true?

A

- Yes. Normally a healthy liver can withstand damage to its cells to a great extent. This is possible because of its built-in reserve.
- However, when a large number of cells are damaged at one go, this reserve is exhausted and the liver can no longer cope. This is what is called "Acute liver failure".
- Prothrombin Time or INR as mentioned above indicates the severity of the liver failure. When the liver "fails" to do its usual functions and does not improve despite maximum medical measures, then, liver transplantation is the only treatment that can help.
- A part of the liver from any close relative- parents, grandparents or siblings is donated to help the "failing" liver.
- Usually any healthy relative who is of the same blood group and is fit to undergo surgery, can donate.

FREQUENTLY ASKED QUESTIONS

LIVER BIOPSY

CONVENOR:

Geeta Billa

MEMBERS:

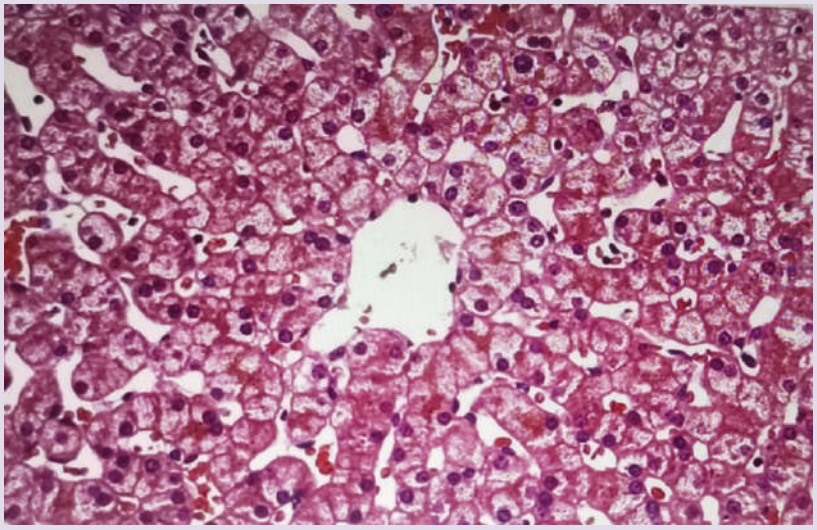
Ameet Mandot
Kavya Harika
Swati Narurkar

FAQs on Liver Biopsy

1. What is liver biopsy?
2. Why is liver biopsy done for an individual?
3. How is liver biopsy done? Can it be done in all age groups? Is it safe?
4. What are precautions to be taken before liver biopsy? Is it a day care procedure or does the patient need admission?
5. What are the precautions to be taken post liver biopsy?
6. What are the complications which may occur during liver Biopsy?
7. When will the results of liver biopsy be available?
8. Doctor, I am scared of an injection into my liver, Is there any other way to check?

Q What is liver biopsy?

A Biopsy is obtaining a small sample of any tissue from the body. Liver biopsy therefore means taking a small piece of liver for examination. This tissue is examined with the eyes (macroscopy) and also under the microscope (microscopy). This is what biopsy looks like under the microscope.



Q Why is liver biopsy done for an individual?

A Liver biopsy is done in individuals with liver diseases both for diagnosis and therapy. The reasons may be

- To confirm the cause of liver disease (in the setting of acute liver failure, or when there is diagnostic dilemma with overlap of two diseases).
- To assess degree of swelling (inflammation) in the liver cells (grade), extent of scarring in the liver (stage) or severity of liver disease.
- To document improvement following treatment.
- To check lesions found on ultrasound.
- In post liver transplant setting, biopsy is done to rule out rejection or assess for other reasons of liver dysfunction.

Q How is liver biopsy done? Can it be done in all age groups? Is it safe?

A Liver biopsy can be done in all age groups if absolutely indicated and there is no age limit. It is relatively a safe procedure if done in well-equipped centres by experienced doctors taking all the necessary precautions.

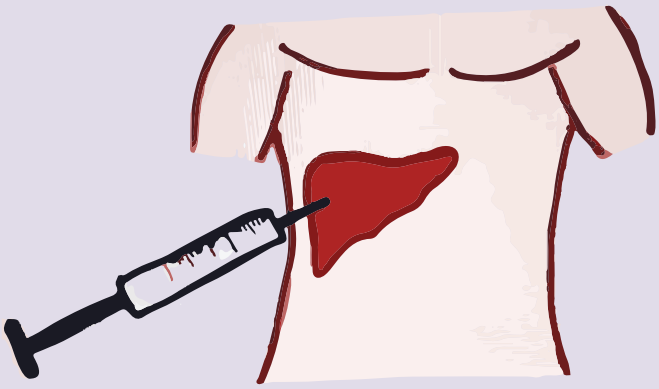
There are 4 different ways of doing liver biopsy;

- Percutaneous
- Trans-jugular
- Endoscopic ultrasound guided
- Surgical

Percutaneous Liver Biopsy: This is the most common way of doing the biopsy.

You will be shifted to the radiology department for biopsy. Biopsy is done under local anaesthesia. Normally no sedation is used (unless patient is extremely anxious or in children). The exact area for liver biopsy (on the right side – lower part of your chest – between the ribs) is identified on ultrasonography (USG).

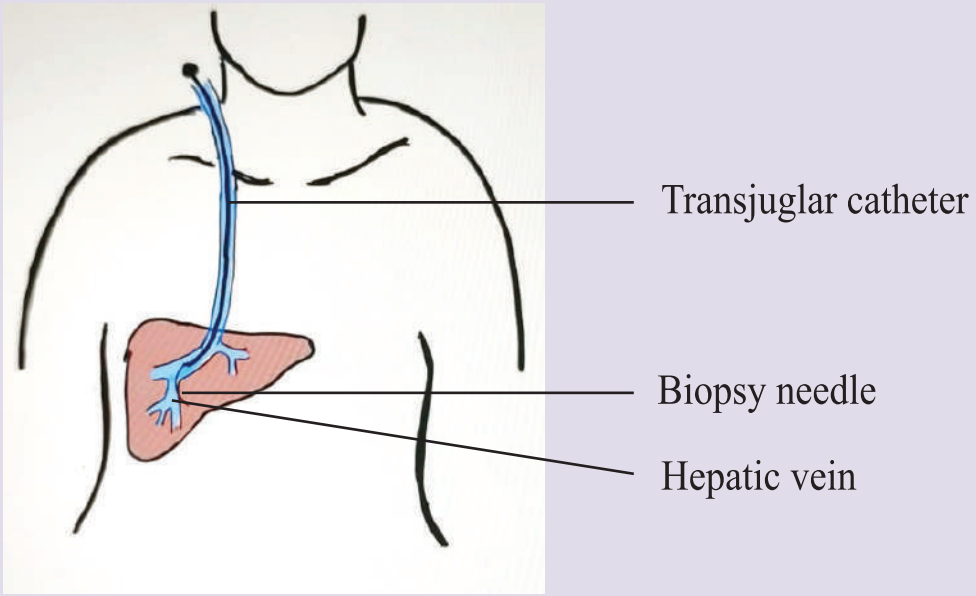
This area is cleaned and injected with a local anaesthetic (which will make the local area numb). Once the area is numb, biopsy is done with a needle when a small biopsy piece ~ 1.5 to 2 cm in length and 1 mm in thickness is obtained from the liver. (the type of needles vary from centre to centre). During the procedure you may experience a small jab when it enters the liver, otherwise it is not painful. Post biopsy, radiologist confirms on USG that there is no significant bleeding and then you are shifted back to your bed.



You lie on right lateral position (on the side of biopsy) for next 30 minutes to an hour and rest in supine position for next 4 hours. (When biopsy of liver lesions is done, this observation period may be 1 hour). During this period your pulse and BP is monitored. You may experience mild degree of pain at the site once the effect of anaesthesia wears off. For this you may be given Paracetamol.

Transvenous (Trans-jugular) Biopsy: This biopsy is done by interventional radiologist using special needle via trans-jugular route. In this needle is inserted through the neck vein which then goes via the heart in to the veins draining the liver and in to the liver tissue.

This biopsy is done in Angiography Lab. It is more expensive and requires the expertise to do it. Major advantage of this biopsy is minimising the risk of bleeding.



This biopsy is done in certain situations. Patients with clinically demonstrable ascites (filling of water in abdominal cavity and around the liver), patient having bleeding tendency (which is not corrected by giving blood products), Patient's having a small, hard, cirrhotic liver, in morbidly obese patients were biopsy site becomes difficult-to-identify.

Endoscopic Ultrasound guided biopsy: Endoscopic USG – in this there is an USG probe attached to the end of the scope. This allows very close views of the organs internally. Liver can be seen through the Stomach or small intestine (duodenum). Here targeted biopsies can be taken.
Advantage of this technique is you can take multiple tissue pieces, it has less risk of bleeding and observation period is smaller. Disadvantage
is - the size of tissue is small and fragmented. Doing this procedure requires a lot of training and hence it is done in very few centres.

Surgical Liver Biopsy: In most circumstances, a surgical or laparoscopic biopsy is done when the liver is noted to be abnormal in appearance prior to planned surgery or at the time of surgery.

Q What are precautions to be taken before liver biopsy? Is it a day care procedure or does the patient need admission?

A

- All individuals undergoing liver biopsy should have the basic blood tests i.e., – CBC (which includes your haemoglobin and platelet) , blood grouping and typing and prothrombin time (which checks the ability of the blood to coagulate).
- Individuals on anti platelet drugs (asprin, clopidogrel) or blood thinners (Warfarin, heparin) should discontinue their medicines for few days depending on your clinical situation. You can continue your other medications as before.
- A consent form informing the possible complications should be read, understood and signed by the patient or the care taker before the procedure.
- Light Food can be taken 4-6 hours before the procedure. IV fluids may be given for sick patients and diabetics. The doctor and the nurse should be informed of all the medications being taken. Procedure may be done as a day care procedure. If you stay away from hospital, your doctor may ask you to stay overnight in hospital.

Q What are the precautions to be taken post liver biopsy?

A Post biopsy the patient has to take bed rest for 4-6 hours. Lifting heavy weights (> 5 kg) for next 24 which may increase the risk of bleeding should be avoided. Anticoagulants or Antiplatelet agent (blood thinners) may be restarted after 48 hours. Normal routine work can be resumed after 24 hours.

Q What are the complications which may occur during liver Biopsy?

A

- The most common symptom will be mild pain at the biopsy site once the effect of anaesthesia wears off. This will subside with oral paracetamol.
- Apart from pain – bleeding is the next most common complications as liver is a very vascular organ. Your doctor takes all the precautions by checking your tests and stopping your blood thinners but despite this < 2% of patient may have this complication. The bleeding may occur into the liver or into the abdominal cavity. This usually stops spontaneously, however in some cases it may require blood product or other procedure to stop the bleeding.
- Rarely complications due to needle piercing nearby organs like intestine or gall bladder at the time of biopsy may be encountered. This is rare today as most biopsies are done real time under ultrasound guidance.
- Deaths have been very rarely reported post biopsy, rates varying between 0 to 0.1%.

Q When will the results of liver biopsy be available?

A Normally the process of preparing the tissue and making slides takes at least 24 hours (in hospitals having in house processing unit it is done within 6 hours). Once the slides are made, pathologists reads the slides and results are given. In a non - emergency situation reports are available within 3-5 days.

Sometimes if there is doubt in interpretation, special stains on biopsy are asked, which then takes longer time.

Q Doctor, I am scared of an injection into my liver, Is there any other way to check?

A Today most of the diseases of liver are diagnosed on blood tests. However as mentioned, in specific situations biopsy is needed. Inflammation and the type of pathology inside cannot be diagnosed by any other means. However, the degree of fibrosis and fat content can be now diagnosed on specialised tests like Fibro-scan and MR Elastography. So biopsy still remain a gold standard in diagnosing the liver pathology.

FREQUENTLY ASKED QUESTIONS

LIVER CIRRHOSIS

CONVENOR:

Deepika Kedia

MEMBERS:

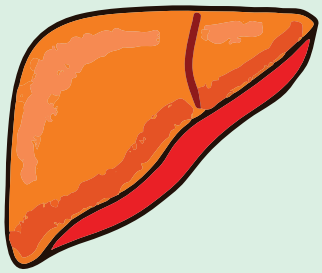
Dharmesh Kapoor
Molina Khanna
Saurabh Mukewar

FAQs on Liver Cirrhosis

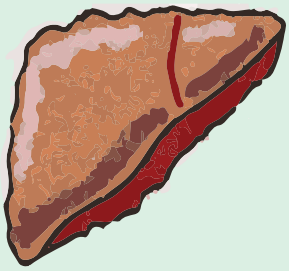
1. What is cirrhosis of liver?
2. What signs and symptoms will I experience if I have cirrhosis of liver?
3. Can I find out what is the cause of my cirrhosis and if so, what tests need to be done?
4. How long will I live once I am diagnosed with cirrhosis of liver?
5. My tummy and ankles are swollen. Do I need to get water taken out from my tummy? How frequently am I going to need it?
6. Do all patients with cirrhosis eventually need a transplant?
7. Can my cirrhosis get completely cured?
8. What diet should I eat if I have cirrhosis of liver?
9. I have heard patients who have cirrhosis of liver can vomit blood, is this true?
10. Can I work, travel or exercise normally?
11. I have liver cirrhosis.Can my children get it? Does cirrhosis run in the family?

Q What is cirrhosis of liver?

A Cirrhosis of liver is a disease where the liver is damaged and permanently scarred leading to gradual loss of liver function. This generally happens due to a continuous insult/damage to the liver leading to loss of liver cells. The liver then tries to unsuccessfully repair itself, leading to scarring. The common causes are long term heavy alcohol use, chronic viral infections of the liver (Hepatitis B and C) and non alcoholic steatosis or fatty liver disease.



Normal Liver



Cirrhotic Liver

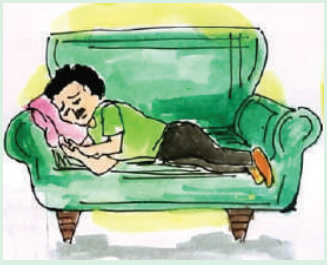
Q What will be my symptoms if I have cirrhosis of liver?

A

- In the early stage of cirrhosis you may not have any signs or symptoms and the disease may be diagnosed only after some with routine blood investigations or ultrasonography. When the symptoms do come up they could be non specific. You may have symptoms of loss of appetite, general weakness, feeling of fatigue and weight loss in the early phase.

- You may also develop excessive itching, painful muscle cramps or diarrhea.

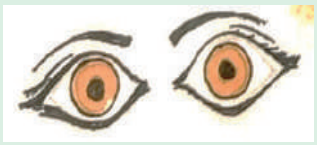
Weight loss



Fatigue

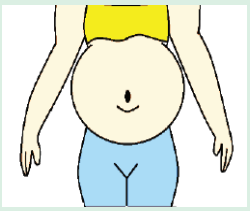
Loss of appetite

- Later you may develop jaundice, swelling in the feet, swelling in the belly due to fluid accumulation (ascites), vomiting of blood, black stools due to internal bleeding, easy bruising, confusion and drowsiness.
- Women may develop menstrual irregularities like amenorrhea (absence of menstruation) or abnormal / excessive menstrual bleeding and infertility.
- Loss of sexual drive, erectile dysfunction, abnormal breast enlargement and infertility may be seen in male patients.



Jaundice

Blood in vomitus



Ascites (fluid in belly)

Confusion

Q Can I find out what is the cause of my cirrhosis and if so, what tests need to be done?

A Cirrhosis can occur due to various reasons. Common causes include

- Non-alcoholic fatty liver disease (due to fat accumulation in liver),
- Chronic alcohol consumption,
- Viral hepatitis (Hepatitis B and C),

- Autoimmune Hepatitis (in this the body's immune system attacks the liver)
- Genetic disorders such as Wilson's disease, Hemochromatosis due to accumulation of copper and iron in liver respectively.
- Disorders affecting liver blood vessels – Budd Chiari syndrome.

To determine the cause of cirrhosis, your doctor may perform several investigations including blood tests and imaging studies (Ultrasound abdomen, CT or MRI scan of abdomen. In most cases, the cause can be determined based on these investigations. However, sometimes a sample from your liver (liver biopsy) may need to be obtained to determine the diagnosis.

Q How long will I live once I am diagnosed with cirrhosis of liver?

A

- Longevity of a patient following diagnosis of cirrhosis depends on several factors including the cause of cirrhosis, extent of liver damage, age of the patient and other medical conditions. There is no definite way of predicting the course of the illness. A combination of some routine blood tests (like MELD score) can determine the risk of dying from cirrhosis over the course of next 3 months. These blood tests include S.bilirubin, S.creatinine and INR which are used to calculate the MELD score (Model for End stage liver disease score). Leading a healthy lifestyle, avoiding alcohol, exercising regularly and avoiding medicines that can harm to the liver is important to maintain good liver health.
- Many patients with cirrhosis live long with proper management of the disease and with timely detection of complications and appropriate medical care.
- Others can have a rapid progression with life threatening complications. Therefore, it is important to follow up closely with your Gastroenterologist and report immediately if there are alarming symptoms such as jaundice, bleeding, change in behaviour or increase of fluid in the belly, fever, abdominal pain, low urine output.

Q My tummy and ankles are swollen. Do I need to get water taken out from my tummy. How frequently am I going to need it?

A Water builds in the ankles and tummy when the liver disease reaches a stage that is called 'decompensation'.

In the initial stages, this is managed by salt restricted diet (4-5gms salt per day). The next stage is to initiate therapy with diuretics (urine pills). These pills help to flush out the fluid accumulated in your belly through the kidneys as urine. The dose of these drugs is built up gradually. The end-point of optimal dosing is loss of swelling in the feet/ankles as well as the belly. When therapy is initiated, the patient is educated about dose monitoring.

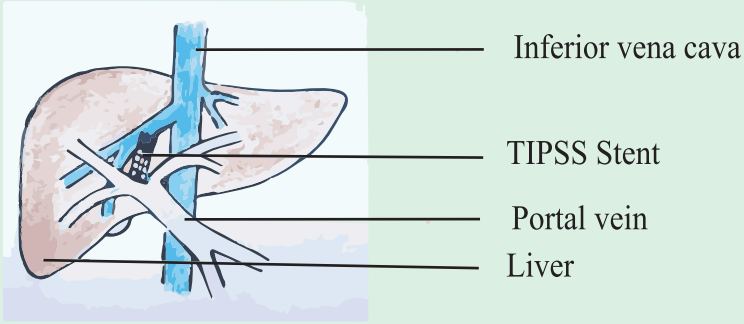
RESTRICT YOUR SALT INTAKE TO 5GM OF TABLE SALT EVERYDAY

The confirmation that these urine pills are working is weight loss of 0.5 kg/day, ideally, and no more than 0.8-1.0 kg per day. When on diuretic therapy, careful attention needs to be paid to serum electrolytes (sodium, potassium) as well as kidney function (urea/creatinine). If the serum sodium falls (less than 130mEq/L) and serum creatinine rises, it is time to try alternate means to get rid of the excess water. These are:

- Removing of fluid from belly using a small needle – (Tapping /Paracentesis). This is done under medical supervision, in a situation when the patient is gaining weight in spite of salt restricted diet and diuretic therapy. The patient should report to the care provider when he or she develops symptoms of abdominal distress - pain/distension/difficult breathing/difficulty in walking/poor oral intake.

- The water is removed from the belly using a needle under aseptic conditions, and requisite amount of albumin is given as injections (intravenously), to prevent side effects of the water removal. If the patient adheres to salt restriction (defined above), repeated tapping would not be needed any time sooner than 10-14 days.

- Stent may be used in a group of carefully selected patients who are non-responsive to standard medical therapy for water removal. These stents are called TIPSS stents (trans-jugular intra-hepatic porto-systemic shunt stents). These stents are implanted by interventional radiologist in consultation with the treating liver doctor.



TIPSS PROCEDURE

- Liver transplantation is the definitive treatment for patients whose ankle swelling and belly fluid are severely symptomatic and non-responsive to therapy. Discussion regarding transplantation should start sooner than later, because long term paracentesis and ineffective/inadequate diuretic therapy may result in poor-nutrition, poor functional status, loss of muscle mass and progressive kidney dysfunction. Once these complications set in, they make the liver transplant outlook difficult and outcomes inferior.

Q Do all patients with cirrhosis eventually need a transplant?

A No, all patients do not need a transplant. Patients with cirrhosis who have treatable cause like hepatitis B/C, alcohol, autoimmune ds, Wilson disease if diagnosed early can lead a normal life with due precautions without having to undergo a transplant.

Q Can my cirrhosis be completely cured?

A

- In most instances, cirrhosis is considered to be an irreversible disease process. However, this is not the complete truth. By definition, cirrhosis is a diffuse process involving the liver which is characterized by the presence of nodules (regenerating liver cells) along with scar tissue (fibrosis). The two changes occur simultaneously. Along with this there are changes in the small blood vessels supplying blood and nutrition to liver cells. When the inciting event (alcohol, fat or weight gain, viral infection) is treated, these changes in the liver architecture may improve. There are well defined studies showing reversal of fibrosis and cirrhosis using anti-viral treatment in the context of chronic hepatitis B and C.

- The reversibility occurs over a long period of time (months to years). Similarly, fibrosis may reverse in patients with fatty liver disease (NASH-non-alcoholic steatohepatitis)with weight loss and medicines. In patients who have alcohol related cirrhosis, mere abstinence form alcohol can reverse fibrosis in the liver.

- The traditional view is that cirrhosis is reversible in its initial stages. Once a given patient develops complications of cirrhosis, it may not be reversible or completely reversible. The exception to this is an occasional patient with secondary biliary cirrhosis(where cirrhosis occurs due to long standing obstruction to flow of bile).These patients should always be considered for procedures that restore the flow of bile, no matter what the duration of obstruction or cirrhosis.

- When your care provider informs you that your fibrosis has regressed or cirrhosis reversed, it does not imply that you do not need to be under surveillance. Even in this situation, you have to watch out against occurrence of liver nodules (especially liver cancer).

Q What diet should I eat if I have cirrhosis of liver?

A

- If you have cirrhosis of liver, you require more energy than a normal person. You should consume 25-35 kilocalories for every kilo of body weight per day. So if you are 80 kgs in weight, you need around 2400 kcal per day.

- You have to eat a high protein, low salt diet. The amount of protein you need is 1.2 -1.5 gms per kg body weight per day. So for a 80 kgs person with cirrhosis it will be 96 gms protein per day. You should avoid eating red meat but, fish, chicken and eggs are allowed. If you are vegetarian, then high protein is present in all daals, sprouts, sattu, peanuts, chana, almonds, walnuts, milk, dahi, paneer, sada chana, bengal gram, rajma, soya bean, tofu.

- You can eat all fruits, vegetables and freshly prepared food. If you are diabetic you should restrict the amount of very sweet fruits like mangoes or water melon.

- Your liver cannot properly process glycogen, a form of carbohydrate which provides the body with energy at night. For this reason, you have to eat a snack or fruit first thing in the morning after you wake up and you also need to eat a snack or dry fruits half an hour before going to bed.

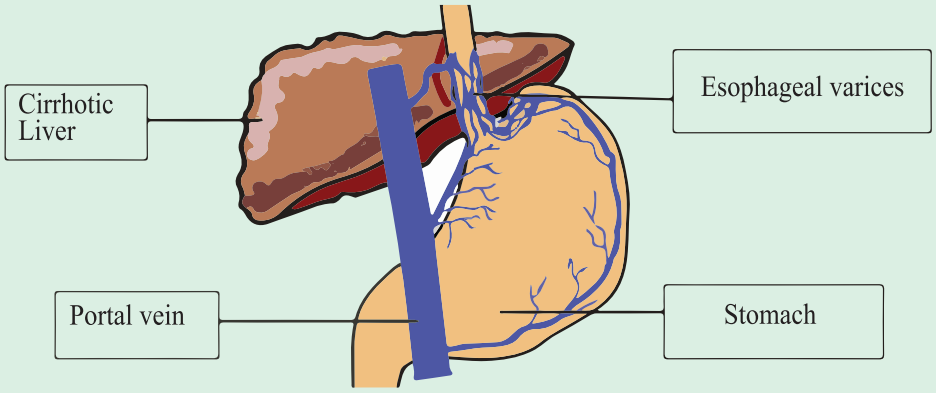
- If you feel full very quickly due to maybe presence of fluid in your tummy, then please eat every 2-3 hours, small meals, snacks or fruits.

- If you have fluid in your tummy, you may be asked to reduce the intake of fluid per day if your serum sodium levels are low. You need to have low salt intake in your food. You should not add salt on your food while eating. While cooking, do not add any salt. Take measured amount of salt (4gm) available as 1gm sachets or through a measuring spoon to be used throughout the day. Do not use salt substitutes. Avoid all processed/ readymade food as these will contain salt as preservative including apparently sweet foods. Avoid carbonated water as most of them have high salt in it.

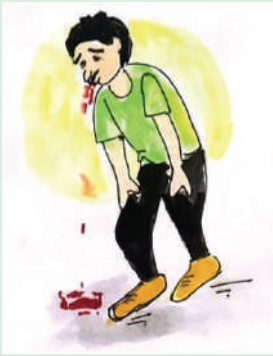
Q I have heard patients who have cirrhosis of liver can vomit blood, is this true?

A

- Yes. Patients who have cirrhosis of liver may vomit blood. The reason behind that can be multiple. one can be an ulcer in the stomach or small intestine called duodenum. This is not very common now a days.
- Secondly, if you vomit very violently, there can be a tear at the lower end of your food pipe which can cause you to vomit blood.
- The most worrying and serious reason is varices (dilated veins) in the food pipe or stomach which may rupture causing you to vomit huge amounts of blood and pass black stools.
- These are a result of portal hypertension (increase in the pressure in the vein which caries blood from intestine to liver) .They can then be seen in the food pipe or stomach on endoscopy done by your doctor and can be treated through endoscope itself by injections or banding.



- If you have blood in vomitus, you must go immediately to the nearest hospital as 30% patients do not survive these episodes. This is a medical emergency. You need to be in a Intensive care unit and treatment has to be started to reduce or stop this bleeding immediately.



Q Can I work, travel or exercise normally?

A

- Ability to work, travel or exercise will depend on the stage of cirrhosis. In the early stages when the symptoms are minimal it is easily possible to continue your day to day activities. In the later stages of the disease the ability for physical activity may be restricted. But if the patient is able to work and exercise comfortably he/she may continue to do so. In fact such exercise may be potentially beneficial too. If the patient has had episodes of confusion, driving and work requiring complex mental activities and difficult decisions may be restricted.
- Travel is allowed but patients have to see if their destination has good medical facilities for emergency medical care and also need to avoid raw food, street food, drinks containing ice to avoid further infections to the liver. Air travel may be risky and should be avoided if the patient has had a recent episode of blood vomiting or has been told by his doctor that he is at high risk for blood vomiting.

Q Can my children get the disease. Does cirrhosis run in the family?

A

- The risk of children getting cirrhosis depends on the cause leading to cirrhosis . Some rare conditions that cause cirrhosis such as Wilson disease, alpha-1 antitrypsin deficiency and hemochromatosis run in families. The children born in such families are at a high risk of liver damage. Hence, your doctor may advice genetic tests for your children to screen for these conditions.
- However, most commonly cirrhosis occurs due to environmental factors such as excessive alcohol consumption, obesity, uncontrolled diabetes, high blood pressure or viral hepatitis. While these risk factors are not purely genetic, children born in such families have a higher chance of having the same risk factors. Therefore, it is important to lead a healthy lifestyle to avoid damage to liver. Also testing for viral infections if other family members have Hepatitis B or C related liver damage is essential.

FREQUENTLY ASKED QUESTIONS

LIVER TRANSPLANTATION

CONVENOR:
Manav Wadhawan

MEMBERS:
Gomathy N.
Naveen Ganjoo
Shailesh Sable

FAQs on Liver Transplantation

1. What does the liver do?
2. What is liver transplantation?
3. Who needs a liver transplant?
4. When is it not possible to perform a liver transplant contraindications?
5. What are the types of liver transplant?
6. What are the results of liver transplantation? How long does recovery of a living donor take?
7. I have cirrhosis, do I need a liver transplant? What are the signs of advanced liver disease or cirrhosis?
8. Who will evaluate me for a liver transplant?
9. What is done during a surgery for liver transplantation?
10. How long will I stay in hospital after transplantation?
11. What medications does one need to take after transplantation? Do I need a long term follow-up after liver transplantation?
12. What are the advantages of a live organ donation?
13. I have been advised a liver transplant? Who can donate?
14. What are the tests needed for evaluation of a living donor?

SHIVRAM PRASAD SINGH
PRESIDENT

MAMUN-AL-MAHTAB
SECRETARY GENERAL

UNDER THE AUSPICES OF SAASL WOMEN IN HEPATOLOGY FORUM

AABHA NAGRAL
CHAIRPERSON

LUBNA KAMANI
CO-CHAIRPERSON

ROKSHANA BEGUM
MEMBER SECRETARY

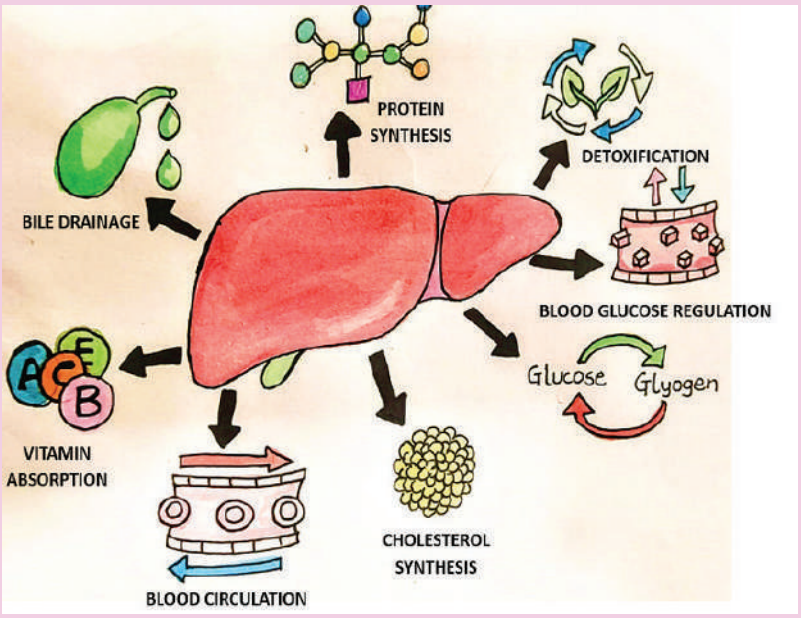
SAMRIDDHI POYEKAR
FAQ's CO-ORDINATOR

Q What does the liver do?

A The liver is the largest internal organ in your body. The liver has a lot of vital functions. The liver is necessary for survival and there is currently no way to compensate for the absence of the liver.

- It produces bile, a mixture of chemicals, which help in digestion.
- It helps in breaking down food to turn it into energy.
- The liver also acts as a filter and removes harmful substances from your blood.
- It makes chemicals that help in fighting infection.
- It makes chemicals that are important for blood clotting.
- It stores iron, vitamins and other essential substances

FUNCTIONS OF LIVER



Q What is liver transplantation?

A

- Liver transplantation is surgical procedure to remove a diseased liver and replace it with a healthy liver. An entire liver may be transplanted, or just a portion of liver may be transplanted.
- Since liver is the only organ in the body which can rapidly regenerate, a transplanted portion of a liver can rebuild to normal capacity within weeks.
- A successful liver transplant is a life-saving treatment for people with liver failure, a condition in which the liver no longer works, as it should. Currently about 2000 liver transplants are being performed each year in India.

Q Who needs a liver transplant?

A

- Liver Transplantation is indicated for severe acute or advanced chronic liver disease (cirrhosis) and there is no hope that the functions of liver will recover with medical treatment.
- Acute liver failure (ALF) occurs suddenly in a person who is otherwise healthy and has a normal liver. There is rapid decline in liver functions and development of organ failure if not treated immediately.
- End-stage liver disease occurs most commonly as a result of cirrhosis that is a slowly progressive disease and results from permanent damage or scarring of the liver. Cirrhosis leads to loss of liver function, including processing of nutrients, hormones, drugs, toxins as well as production of proteins and other sustances synthesized by the liver.

Common causes of liver cirrhosis include :

- Alcoholic liver disease
- Fatty liver disease (particularly in those with Diabetes, obesity, raised blood pressure, Raised blood level of cholesterol or triglycerides)
- Chronic Hepatitis B
- Chronic Hepatitis C
- Genetic diseases (like Wilson disease)
- Autoimmune liver diseases

Liver transplants are also done for treatment of liver cancer and certain bile duct diseases.

Q When is it not possible to perform a liver transplant (contra-indications)?

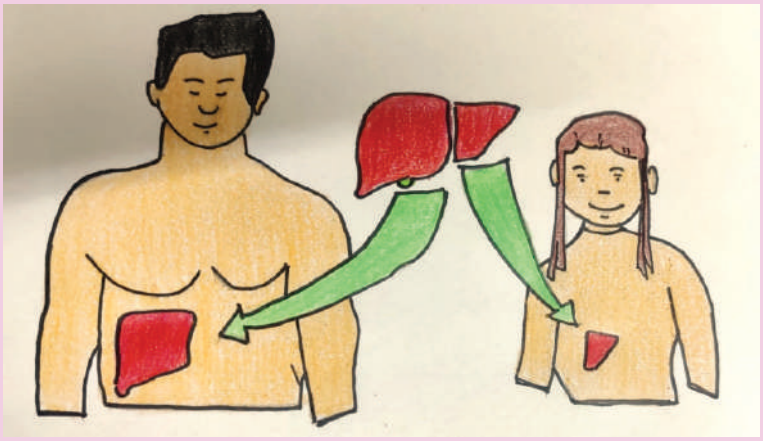
A The common contraindications of liver transplantation are:

- Advanced heart or lung disease,
- presence of cancer other than liver cancer,
- uncontrolled infection,
- ongoing illicit/illegal substance abuse and
- lack of adequate social support.

Q What are the types of liver transplant?

A

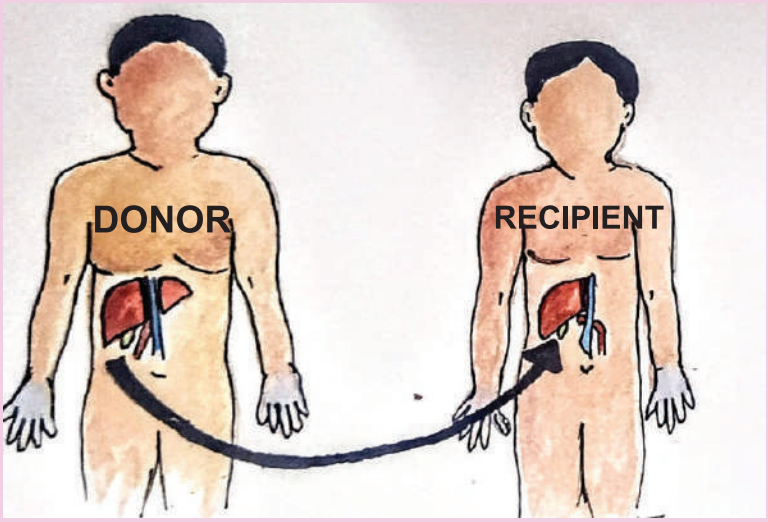
- Transplant livers can be harvested from a donor who has died. This type of donor is called a deceased donor (earlier called cadaveric transplant).
- Sometimes a healthy person donates part of his or her liver for a specific patient. In this case the donor is called a living donor.
- All deceased and living donors are tested before transplant surgery. The testing makes sure the donor liver works as it should, matches the patient's blood group, and is the right size, so it has the best chance of working in your body. Also, the transplant team ensures that removing a part of the liver from the donor should not endanger his/her life.
- Adults usually receive the entire liver from a deceased donor.
- Sometimes only a portion of a whole liver from a deceased donor is used to fit a smaller person (reduced liver transplantation). In some cases, a liver from a deceased donor is split into two parts. The smaller part may go to a child, and the larger part may go to an adult. (split liver transplantation)



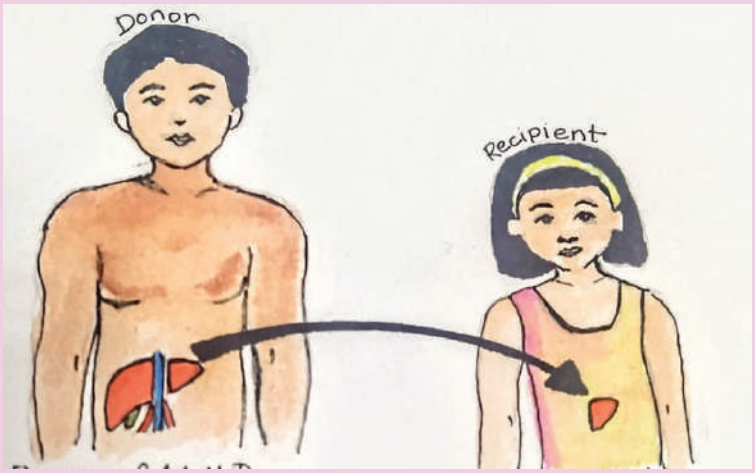
Split liver transplant between an adult and child

- A healthy living person can donate a part of his or her liver to a patient, usually a family member. This type of donor is called a living donor. This procedure is known as living donor liver transplant. The amount of liver that is donated will be about 60% of the recipient'scurrent liver size. Within 6-8 weeks, both the donated pieces of liver and the remaining part in the donor grow to normal size.

- Both types of transplants usually have good results.



In adults 40-60% of donor's liver transplanted into the recipient



DONOR **RECIPIENT**

In children 20-30% of donor's liver transplanted into the recipient

Q What are the results of liver transplantation, How long does recovery of a living donor take?

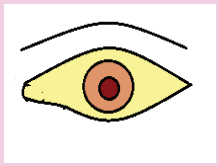
A

- Most patients return to a regular lifestyle six months to a year after a successful liver transplant.
- Eating a healthy diet, exercising regularly, and taking recomended medications are important factors to staying healthy.
- Nearly 90 percent of liver transplant patients are alive at one year after their transplant and nearly 75 percent alive five years after their transplants.
- The living donor is usually in hospital for a week. It takes another 4 weeks at home to recover from the surgery. Almost all donors recover fully after the operation and can perform normal activities within a few months after the surgery.
- The living donors are required to follow up for a few months after donation. Donors usually don't need to follow with the transplant centre after 6 months-1 year of operation and do not need any long term medicines

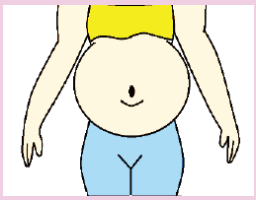
Q I have cirrhosis, do I need a liver transplant. What are the signs of advanced liver disease or cirrhosis?

A People who have advanced liver disease need a transplant when they one or more the following symptoms/problems:

- Jaundice - yellowing of the skin or eyes, Dark, tea-coloured urine



- Ascites - an abnormal amount of fluid in the abdomen



- Vomiting of blood

- Tendency to bleed
- Encephalopathy - mental confusion, forgetfulness

Shortened attention span (Grade I)

Lethargy with slight disorientation (Grade II)

Increased sleepiness with gross disorientation (Grade III)

Coma (Grade IV)

Grades of Hepatic Encephalopathy

Q Who will evaluate me for a liver transplant?

A

- If a liver transplant is recommended, the Liver Care team will perform a transplant evaluation. The Liver Care team consists of a hepatologist (liver specialist), transplant surgeons, transplant coordinator, dietician, physiotherapist and a social worker. It may be necessary for other specialists to see the patient depending on his/her age and health problems.

- A social worker assesses and helps develop the patient's support system, a central group of people on whom the patient can depend throughout the transplantation process. A positive support system is very important for a successful outcome.

Liver Transplant Team

- On completion of evaluation, the Liver Care team discusses the case in a multidisciplinary meeting and takes a decision on whether therecipient is suitable for a transplant.
- The liver specialist and the primary doctor manage the person's health issues until the time of transplantation and also once the surgical issues are sorted after transplant.

Q What is done during a surgery for liver transplantation?

A

- Liver transplantation is a major operation that takes place only in specialized transplant centers. During a liver transplantation, the surgeon removes the diseased liver and replaces it with a healthy one. Persons who have liver transplants require intensive care and close monitoring after their operation.
- After surgery, the patient is taken to the intensive care unit, the patient is on a respirator, a machine that breathes for the patient, and will have a tube in the windpipe bringing oxygen to the lungs. Once the patient wakes up, the tube and respirator are removed (usually within 24 hours of surgery).
- The patient will have several tests to monitor function of the transplanted liver, kidney function, presence of infections, level of medicines in the body (tac level) given to prevent rejection of liver, x ray of lungs and monitoring of heart function during the hospital stay. The patient is shifted out of the intensive care unit usually after about 4-5 days. The patient is then moved to a room with fewer monitoring devices for a few days longer before going home.

Q How long will I stay in hospital after transplantation?

A The average hospital stay after surgery is 1-3 weeks depending on type of transplant. Deceased donor transplants are discharged earlier than living donor transplant recipients. The length of stay may increase if you develop any infection/complication of surgery.

Q What medications does one need to take after transplantation, Do I need a long term follow-up after liver transplantation?

A

- The patient will be on immune suppressive medication (medicines which prevent the recipient's immunity/ immune cells to attack the donor liver) for the rest of his or her life to prevent the body from rejecting the new liver.
- Lifelong medical follow-up is required for liver transplant recipients. The patient is required to remain in contact with the transplant centre. The transplant coordinators will contact you periodically and advise you about blood tests and follow-up visits.
- The living donors are required to follow up for a few months after donation. Donors usually do not need to follow with the transplant centre after 6 months-1 year.

Q What are the advantages of a live organ donation?

A

- Living donor liver transplantation is now an accepted method, used more commonly in India because of very few deceased donor livers.
- In a living-donor transplant, since the donor is marked for a particular recipient, it means a shorter wait time for a liver.
- Because the surgery can be planned in advance, the chance for a successful transplant is better.

- The quality of the liver may be better, because living donors are usually young, healthy adults who have gone through a complete medical evaluation.
- With a living-donor transplant, the preservation time (the time when the liver is outside the body) is shorter.

Q I have been advised a liver transplant Who can donate?

A

- The donor has to be a family member, such as a parent, sister, brother, or son/daughter. The donor can also be a husband or wife and also grandparents (especially for children needing transplant).
- It is against the law for people to sell their body parts.

In general, liver donors must be:

- At least 18 years old and preferably not more than 55 years of age
- In good health with no major medical or mental illnesses
- A non-smoker with no alcohol abuse
- Mentally sound, should be able to understand and follow instructions before and after surgery
- A compatible blood group
- A person should feel no pressure to donate part of his or her liver; nor should any money be given or received.

Q What are the tests needed for evaluation of a living donor?

A

- People who want to donate their liver go through a complete medical exam to make sure their liver is healthy and that it is safe for them to donate. In fact, donors undergo more tests than the recipient to assess fitness & ensure safety of the donor as well as recipient. The general tests performed as part of the evaluation include:

- **Physical examination** A complete physical examination is performed as part of the evaluation.

- **Blood tests** which include:

✓ Donor's blood type (it should match the recipient's blood type),

✓ Liver and kidney function tests,

✓ Red cell, white cell, and platelet counts,

✓ Tests for diabetes, thyroid diseases, any other ailments,

✓ The donor is also tested for viruses such as hepatitis B, hepatitis C, and HIV.

- **Ultrasound/MRI/CT scan:** These tests are done to get images of theliver to make sure the donor's bile ducts, arteries, and veins are the right fit for the intended recipient. These tests also measure the volumes of the liver that will go to the recipient, and make sure that it is adequate. Additionally, they are used to assess the piece of the liver that will remain in the donor to ensure that it is sufficient.

- **Chest X-ray, ECG and Echocardiography:** These are standard tests done before any major operation to check for lung or heart problems to ensure that the patient is able to tolerate the long and complicated surgery.

- **Specialist consultations:** Every donor will meet a medical physician for a complete assessment. All donors will also have a comprehensive psychosocial assessment to talk about their reasons for donating a liver and to make sure they are in a stable mental condition for the surgery and have taken an informed decision.

FREQUENTLY ASKED QUESTIONS

NON ALCOHOLIC FATTY LIVER DISEASE

CONVENOR:
Shivram Prasad Singh

MEMBERS:
Ajay Duseja
Kalpana Panda
Reshu Khandelwal

FAQs on Non Alcoholic Fatty Liver Disease

1. What is Non-alcoholic fatty liver disease?
2. Why did I get Non-alcoholic fatty liver disease?
3. Is NAFLD only for the “Obese”? I am not obese …
4. Can my child get NAFLD too?
5. Does the disease intensity/ severity vary in individuals i.e. are there different stages of this disease and does it put other organs at risk as well?
6. How would I know if I have NAFLD?
7. What are the different tests to diagnose NAFLD, NASH or cirrhosis?
8. What is this test ‘FibroScan’? Is it accurate and definitive for diagnosing and stratifying NAFLD?
9. How is NAFLD/NASH treated?
10. How can you protect yourself from this disease?

SHIVRAM PRASAD SINGH
PRESIDENT

MAMUN-AL-MAHTAB
SECRETARY GENERAL

UNDER THE AUSPICES OF SAASL WOMEN IN HEPATOLOGY FORUM

AABHA NAGRAL
CHAIRPERSON

LUBNA KAMANI
CO-CHAIRPERSON

ROKSHANA BEGUM
MEMBER SECRETARY

SAMRIDDHI POYEKAR
FAQ’s CO-ORDINATOR

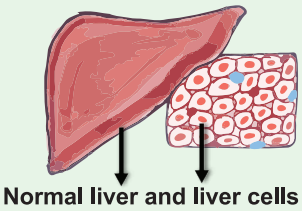
Q What is Non-alcoholic fatty liver disease?

A

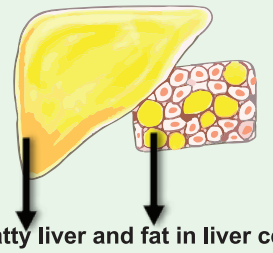
- Non-alcoholic fatty liver disease (NAFLD), a chronic condition affecting liver, has lately assumed the status of major global health concern.

- It is characterised by accumulation of fat in the liver cells, amounting to over 5% of the liver weight, in the absence of other causes of fatty liver, including alcoholism, certain viruses, and medications. Simply put, NAFLD is the deposition of fat in the liver of individuals who do not consume significant amount of alcohol.

- Whilst significant alcohol intake has been defined differently in different studies, daily intake of more than two small drinks (30 ml) of whiskey or 100 ml of wine or 250 ml of beer is considered unsafe.



Normal liver and liver cells



Fatty liver and fat in liver cells

- NAFLD is a multifactorial disease, affecting about 1 in 3 adults in variable degrees, and is usually related to metabolic risk factors that include increased body weight/obesity, diabetes mellitus (high blood sugars), hypertension (high blood pressure) and dyslipidaemia (abnormal blood cholesterol and lipid levels).

- Without timely intervention, it may progress from an asymptomatic entity to a severe disease and may even culminate in liver cancer, thereby reducing life expetancy of the patients.

Q Why did I get Non-alcoholic fatty liver disease?

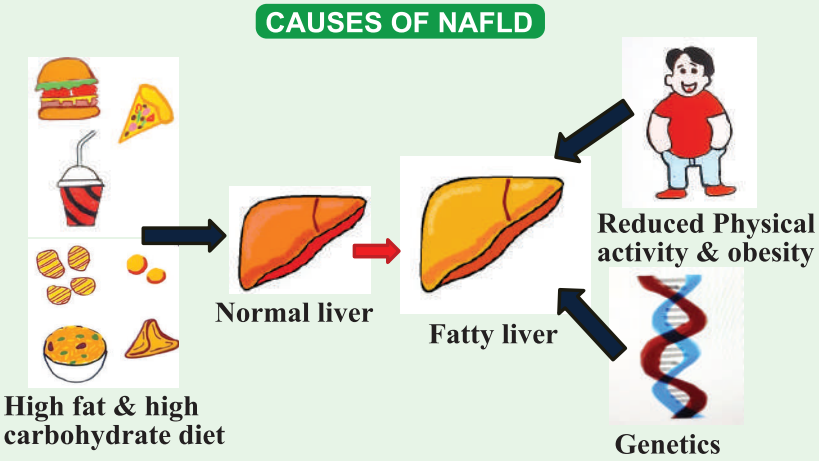
A

- The exact cause of NAFLD is not fully understood and though certain genetic variations may predispose persons to this, NAFLD is largely an acquired disease, being related to lifestyle factors. Changing lifestyle patterns such as increase in sedentary habits, reduced physical activity along with high carbohydrates and fats in diet, are all major reasons for its increasing prevalence.

- Additionally, people with diabetes, obesity, sleep apnoea syndrome, hypothyroidism, polycystic ovarian syndrome (PCOS) are at a heightened risk of this disease. Studies have shown that out of all patients with diabetes, about 70-80% patients have NAFLD and patients with NAFLD have about a 2-fold increased risk of developing diabetes in the long-term. It has also been noted that 85-90% of NAFLD patients are either overweight or obese and have central adiposity (increased waist circumference).

- Strong association exists between NAFLD and metabolic syndrome, a condition characterized by insulin resistance, diabetes mellitus, central obesity, high blood pressure, and high levels of triglycerides and low-density lipoprotein (LDL) cholesterol. Metabolic syndrome is known to increase both the risk of development of NAFLD as well as its severity.

- Genetics also play an important role, as indicated by clustering of NAFLD patients within families or among first-degree relatives of individuals with NAFLD.



Q Is NAFLD only for the "Obese"? I am not obese ?

A

- Though an intricate association exists between NAFLD, diabetes, metabolic syndrome and obesity, studies across the globe including those from India and Bangladesh have shown that even "Lean" people can get NAFLD.
- Lean NAFLD, now a well-recognised NAFLD-subtype, is observed in individuals with a low/normal BMI (cut-off values of BMI being <25 kg/m2 for Caucasians and <23 kg/m2 for Asians).
- It has been shown that despite a normal BMI, these "Lean" patients may still have central obesity (fat around the belly), abnormalvisceral adiposity (fat around the abdominal organs) and insulinresistance. Recent and ongoing studies have made an interesting observation that these "Lean NAFLD" patients have a milder form of liver disease than their "obese" counterparts.

Q Can my child get NAFLD too?

A

- NAFLD is becoming increasingly recognised in children and adolescents as well, particularly those who are overweight or obese or have certain risk factors as noted in adults. In addition, children with a family history of NAFLD or liver disease, are also at an increased risk of this disease.
- Having said this, it is also important to understand that not all children with a family history of NAFLD will develop the condition, and not all children with NAFLD have a family history of the condition, warranting screening wherever appropriate.

Q Does the disease intensity/ severity vary in individuals i.e. are there different stages of this disease and does it put other organs at risk as well?

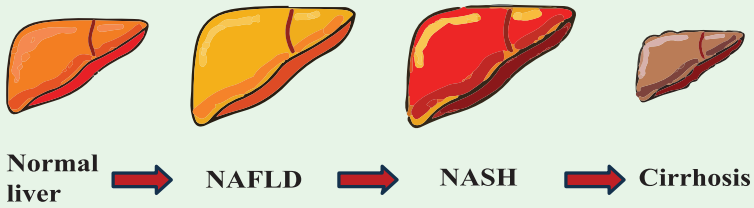
A Severity/intensity of NAFLD indeed varies in different individuals, the disease being more severe with advancing age, in post-menopausal females and in those with higher number of metabolic risk factors. Based on the severity of liver damage, liver pathology may also vary from simple fat accumulation to the more complex inflammation (swelling of liver cells) and liver scarring. Various stages of liver damage observed in NAFLD patients are as follows:

- **Nonalcoholic fatty liver (Simple Steatosis):** This is the mildest and the most common form and is characterized by the presence of fat in the liver, without significant inflammation/scarring or damage to liver cells and is often detected incidentally.

- **Non-Alcoholic Steatohepatitis (NASH):** In this stage, there is not only fat accumulation in the liver, but the liver also becomes inflamed. NASH is a more severe form of the disease and if left untreated/ undetected, can lead to scarring and fibrosis of the liver.

- **Fibrosis:** This stage is characterized by the development of scar tissue in the liver, which can eventually progress to cirrhosis.

- **Cirrhosis and Liver Cancer:** After years of inflammation and scarring, the liver shrinks in size culminating in end-stage liver disease or cirrhosis. This is the most advanced stage of NAFLD andmay be associated with other complications of liver failure and may even lead to development of liver cancer in some patients. It has been observed that about 30% patients with NAFLD have NASHand about 20% of these patients may end up with end stage liver disease.



Furthermore, patients with NAFLD are at an increased risk of developing diseases of other organs as well, such as heart, kidneys, bones and pancreas. In fact, some patients with early stage of NAFLD (NAFLD) may present with severe cardiac disease, instead of liver related complications. Thus, diagnosis and treatment of NAFLD is not only important from the liver perspective but plays a great role protecting other organs as well.

Q How would I know if I have NAFLD?

A

- Patients with NAFLD usually do not have any symptoms and their fatty liver may come to attention only incidentally, either during an ultrasound ordered for other GI conditions such as bloating, dyspepsia, or abnormal liver function tests (LFT).
- Sometimes vague non-specific symptoms like malaise, lethargy, body aches, discomfort over the right lower rib cage (site where liver is situated) , loss of appetite may be present.
- Dark coloured urine, jaundice (yellowish discolouration of skin), easy bruisability, swelling over tummy and lower limbs, altered mental status and other such symptoms become evident only when the disease has progressed to cirrhosis (severe scarring) or liver cancer.
- NAFLD is a diagnosis of exclusion and other causes of liver disease such as increased alcohol intake, infections with hepatitis B/C virus, celiac disease and other autoimmune diseases need to be ruled out with appropriate testing before establishing the diagnosis of NAFLD.

Q What are the different tests to diagnose NAFLD, NASH or cirrhosis?

A

- Besides the detailed history of symptoms and physical exam by the treating physician, special laboratory tests and radiological evaluation are needed for differentiating NAFLD, NASH or cirrhosis.
- Lower platelet count, elevated liver enzymes (AST to ALT ratio of more than 1), abnormal liver on USG abdomen, and certain mobile app based scores may help in identification of NAFLD at the primary care level.
- Other non-invasive tests such as elastography (most common being FibroScan) also help in disease identification and stratification.
- It is only in patients with inconclusive results on non-invasive testing or in those with other liver diseases such as viral hepatitis B/C, autoimmune hepatitis, Wilson's disease etc, that diagnosis needs confirmation by the more invasive Liver biopsy. In this procedure, liver tissue is extracted with needle under radiological guidance and is then assessed by a pathologist.

Q What is this test 'FibroScan', Is it accurate and definitive for diagnosing and stratifying NAFLD?

A

- FibroScan, a popular non-invasive diagnostic tool, uses transient elastography to measure liver stiffness which is a surrogate marker of liver fibrosis/ scarring.
- Additionally, it can accurately diagnose and quantify liver fat accumulation, the hallmark of NAFLD.

- It can even be used for tracking changes in liver fat and fibrosis over time, thereby helping in monitoring disease progression and in assessing the response to treatment. It can be of great help in identifying patients who require closer monitoring or more aggressive treatment to prevent disease progression.

- FibroScan basically works by sending a mild vibration through the liver tissue and measuring the speed at which this vibration travels. The faster the vibration travels, the stiffer is the liver tissue. The results are displayed as numerical values known as a liver stiffness measurement (LSM), that range from 2.5 kPa to 75 kPa.

- It is essential to understand that despite its utility and accuracy, FibroScan is not a standalone diagnostic tool and should be used in conjunction with other clinical and laboratory parameters to confirm the diagnosis and assess the severity of NAFLD. In some cases, with diagnostic dilemma, further testing by liver biopsy becomes imperative.

Q How is NAFLD/NASH treated?

A

- The mainstay therapy of NAFLD revolves around lifestyle modifications. Losing weight by consuming a well-balanced diet, adequate exercise and avoiding a sedentary lifestyle are often recommended as first-line treatment for NAFLD.

- Weight loss has shown to improve liver functions and reduce liver inflammation. Patients who are overweight or obese are often advised to lose around 7-10% of their baseline body weight over a period of 6 months, in order to reduce liver fat, inflammation (swelling) and scarring. Weight reduction needs to be achieved by a combination of exercises and dietary caloric restriction.

- Overweight and obese patients are advised to reduce around 30% of their calorie intake per day or reduce the calorie intake by about 500 - 1000 Kcal per day (mainly by reducing the dietary carbohydrates and fats). NAFLD patients should avoid sweets, sweetened beverages, fizzy drinks, saturated and trans-fats and should consume a healthy diet rich in green vegetables and fruits.

- 30-45 minutes of aerobic exercises (which may include brisk walking, running, jogging, swimming, cycling etc) every day or at least 5 days/ week amounting to a minimum of atleast 150 minutes/week, is strongly recommended both in overweight/obese and lean patients with NAFLD. These may be combined with resistance exercises, like CrossFit, bands and dumbbells, at least twice per week.

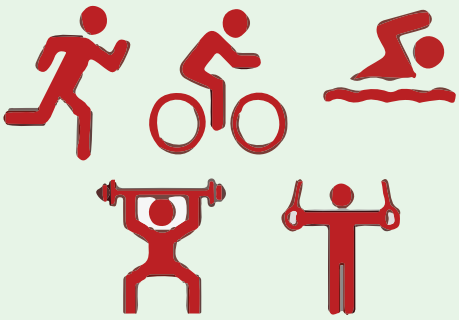
- For those with restrictions for aerobic exercises, such as people with severe osteoarthritis, cardiovascular and respiratory diseases, yoga and certain resistance exercises may help in reducing liver fat.

- Treatment of other associated medical conditions enumerated earlier, such as diabetes, hypertension and dyslipidaemia can also help in improving liver functions.

LIFESTYLE MODIFICATION FOR NAFLD

RECOMMENDED DIET

- **Omega 3 fatty acids found**
- **in fish, walnut, olive oil**
  Fruits, vegetables
  Home cooked meals



RECOMMENDED ACTIVITY

- **Aerobic exercise ≥ 150min/week**
- **Resistance exercise ≥ 2 days/week**
- **Reduced sedentary behaviour**

- Though there are currently no FDA-approved drugs pecifically for the treatment of NAFLD, some medications that are used to treat other conditions such as diabetes, dyslipidaemia, and obesity may be used in individuals with NAFLD, as deemed appropriate. For example, medicines like metformin or pioglitazone, commonly used to treat diabetes, may be prescribed to help improve insulin resistance and reduce liver inflammation and thereby fibrosis.

- Another medication that has been studied for the treatment of NAFLD is vitamin E (tocopherol). It is a powerful antioxidant that may help reduce oxidative stress and liver inflammation.

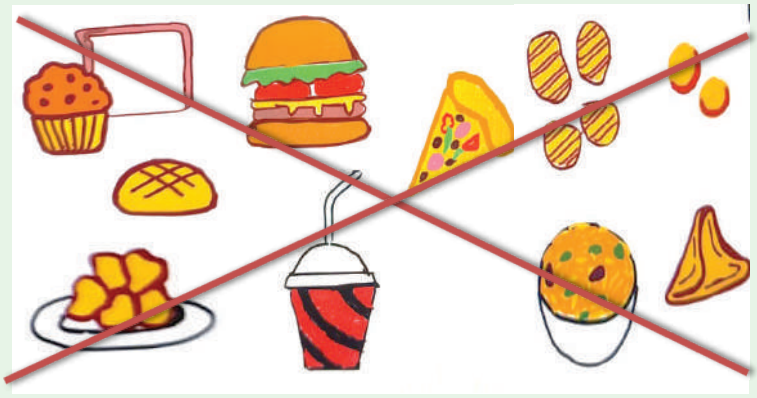
- In some cases, individuals with advanced liver disease may require additional interventions, such as liver transplant, for further stabilisation.

It is important to note that the treatment of NAFLD is highly individualized, and the best course of treatment.will depend on a variety of factors such as the severity of the condition, the presence of underlying conditions, and the individual's overall health. It is always recommended to consult a healthcare provider to determine the most appropriate treatment course.

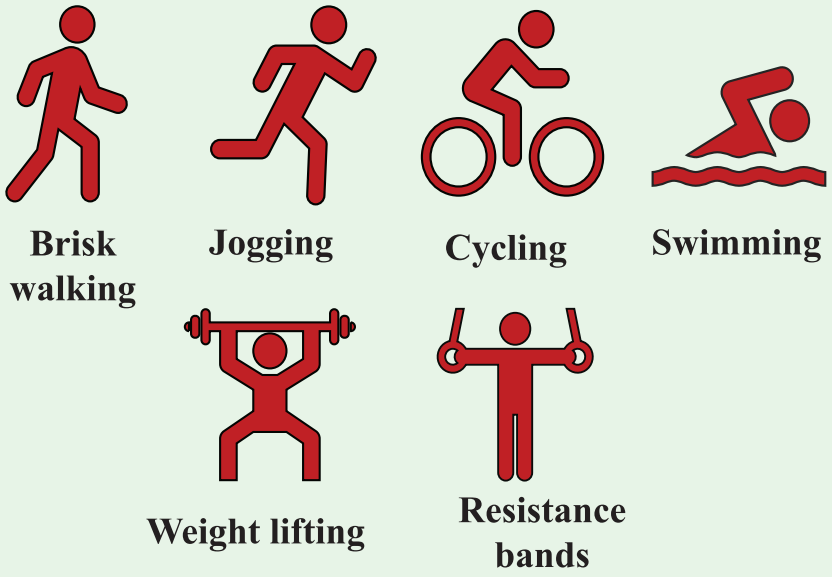
Q How can you protect yourself from this disease?

A As they say prevention is better than cure; incorporating simple and easy lifestyle modifications can indeed help prevent the development of NAFLD altogether. Some of these are:

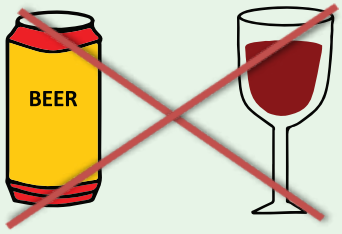
- **Maintain a healthy body weight:** Easier said than done, but weight control can go a long way in nipping the disease in its buds. Focus on eating a balanced diet that is rich in fruits, vegetables, whole grains, lean proteins, and healthy fats. Take water instead of sweetened/carbonated drinks. Tea and coffee in moderation do no harm. Avoid saturated/ trans-fats such as those found in red meat, butter, cheese. Avoid processed/ pickled and fried foodstuff.



- Exercise regularly and aim for at least 30 minutes of moderate intensity exercise on most of the days of the week.



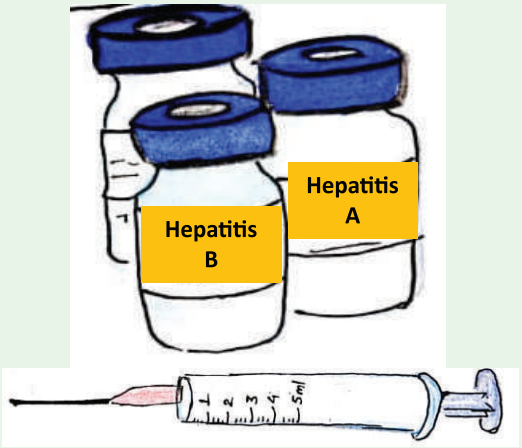
- Abstain from smoking / alcoholism: Alcohol consumption consumption, even in small amounts, can contribute to liver damage and should be totally avoided.



Avoid self-medication especially on the basis of discussions that go on various social media platforms

- 

Timely Vaccinations for healthy liver: Esp. for diseases such as Hepatitis A and B.



- **Management of other medical conditions:** Certain medical conditions, such as Type 2 diabetes mellitus, high blood pressure, and high cholesterol, OSA (obstructive sleep apnoea) can increase the risk of NAFLD. Working closely with your healthcare provider would not only help in better management of these medical conditions but would also reduce your chances of ending up with NAFLD. Timely screening and appropriate referral to a hepatologist by your health care provider can save you from the dreaded complications of this disease.

FREQUENTLY ASKED QUESTIONS

NUTRITION IN CIRRHOSIS

CONVENOR:

Vivek Saraswat

MEMBERS:

Pankaj Puri
Pooja Lakhani
Sunil Taneja
Vineeta Bansal

FAQs on Nutrition in Cirrhosis

1. I have developed jaundice with nausea and loss of appetite for the last few days and have been told to avoid a lot of things, What dietary precautions should I take?
2. I have recently been diagnosed to have cirrhosis of the liver and told that I am likely to be malnourished, How do I know whether I am malnourished or not? Are there any tests for identifying malnutrition?
3. I have been told by my doctor that I have excessive fluid in my tummy due to liver cirrhosis and must restrict my salt intake, Why must I restrict salt in my food? How much salt should I consume daily?
4. Do I have to stop salt completely in my diet? Can I freely use salt substitutes like sendha namak (Kaala namak or rock salt), K-salt, pink salt, Himalayan salt, LoNa salt etc? Please suggest what food items should I avoid due to their salt content!
5. Are there any other precautions I can take to ensure that I adhere to my daily salt allowance?
6. I have excessive fluid in my tummy due to liver cirrhosis; Should I restrict my fluid intake? How much water and fluids should I consume daily?
7. Can I take fruit juices and coconut water regularly? How much can I take every day? Do I have to monitor my fluid intake daily?
8. Are there any tips to help me stay within the permitted allowance of fluids?

9. I was admitted to a hospital recently following drowsiness and swelling of the body due to liver cirrhosis and advised to restrict protein in my diet, Should I avoid a high protein diet and animal proteins in my diet?
10. Can I use milk in my diet? Would cow's milk be better or buffalo's milk? What are sources of protein in vegetarian diet? Is it necessary to use protein supplements?
11. I am overweight, suffer from liver cirrhosis and have been told to reduce my weight, How much fat can I consume in my diet?
12. Which fat would be better? Can I use ghee, butter, coconut oil or should I use only refined vegetable oils?
13. I am overweight, suffer from liver cirrhosis and am trying to reduce my weight, Can I follow an intermittent fasting schedule to lose weight? Can I consume herbal products and powders (eg. Herbalife, Livomyn, Liv 52, milk thistle, etc.) to help in weight loss?
14. I suffer from liver cirrhosis and have been advised to take frequent meals and snacks, especially in the evening, Why do I need a late evening snack?
15. I suffer from liver cirrhosis and have been advised to take vitamin and calcium pills, Can I not get the necessary vitamins and minerals in my diet? What are essential vitamins and pills that I should take?
16. I am overweight, suffer from liver cirrhosis and have had blood vomiting and water in my tummy. Which exercises can I do to improve my muscle strength? How often and how long should I do exercises?

SHIVRAM PRASAD SINGH
PRESIDENT

MAMUN-AL-MAHTAB
SECRETARY GENERAL

UNDER THE AUSPICES OF SAASL WOMEN IN HEPATOLOGY FORUM

AABHA NAGRAL
CHAIRPERSON

LUBNA KAMANI
CO-CHAIRPERSON

ROKSHANA BEGUM
MEMBER SECRETARY

SAMRIDDHI POYEKAR
FAQ's CO-ORDINATOR

Q I have developed jaundice with nausea and loss of appetite for the last few days and have been told to avoid a lot of things, What dietary precautions should I take?

A

- You may have developed jaundice due to acute viral hepatitis. During the first few days, there may be severe loss of appetite, nausea and vomiting. In this period, fluid balance should be maintained by intake of liquids and semi-solid food by mouth, as far as possible. Fried and fat-rich food may be avoided till nausea and vomiting subside.

- After the first few days, NO dietary restriction is advised in jaundice due to acute hepatitis. Turmeric and other spices used in home cooking should not be restricted. There is no role for bottle gourd and radish water or avoidance of milk and milk products. Although sugar cane is not harmful, the conditions underwhich it is prepared is often not hygienic and hence best avoided. Nutrient intake is sub-optimal with bland unpalatable meals which are low in fat, contributing to delayed recovery and a complicated illness. You should consume a high calorie diet in small frequent, tasty meals that include the usual amounts of fat and household spices.

Q I have recently been diagnosed to have cirrhosis of the liver and told that I am likely to be malnourished, How do I know whether I am malnourished or not? Are there any tests for identifying malnutrition?

A

- Under-nutrition and loss of muscle mass (sarcopenia) are very common in cirrhosis. This may be masked by weight gain due to fluid retention in your tummy and legs. Common features of nutritional deficiencies are dry flaky skin and cuts in the angles of the mouth. Loss of muscle mass and weakness affecting daily activities like getting up from a chair and brisk walking suggest malnutrition. Other symptoms include unplanned weight loss of more than 5% in the previous 3-6 months and < 50% dietary intake for more than 5 days. If you develop water in their tummy (ascites) or drowsiness and coma due to liver disease (hepatic encephalopathy) you are at risk for malnutrition.

Weakness and loss of appetite are common signs of early malnutrition.

- A simple bedside method to assess body fat is determining the body mass index [BMI = Weight (kg)/ (Height in meters)2]). BMI <18.5 kg/m2 suggests undernutrition. Corrected BMI is calculated by modifying the BMI for body fluid. Hand grip strength is a simple bed side test to screen for malnutrition. Other bedside clinical tests to assess muscle function include chair stand, balance and walk test, etc. Specific imaging studies are needed to diagnose sarcopenia.

Q I have been told by my doctor that I have excessive fluid in my tummy due to liver cirrhosis and must restrict my salt intake, Why must I restrict salt in my food? How much salt should I consume daily?

A

- Salt restriction is not needed in cirrhosis if you have never had water in the tummy (ascites). As cirrhosis progresses, the weak liver causes the kidneys to retain sodium (salt) and water, leading to ascites. Restricting salt and using medicines that make the kidneys lose salt in the urine (diuretics) is the treatment for ascites.

- Do not add salt while cooking your food. Since hidden salt of up to 1 gm is present in your uncooked food, up to 4 grams of iodized table salt can be added daily to the dishes you eat so that meals are palatable and the required quantity of food is consumed. 1-gram sachets of table salt are convenient to use.

RESTRICT YOUR SALT INTAKE TO 4GM/DAY

Q Do I have to stop salt completely in my diet? Can I freely use salt substitutes like sendha namak (Kaala namak or rock salt), K-salt, pink salt, Himalayan salt, LoNa salt etc? Please suggest what food items should I avoid due to their salt content!

A

- It is best to use table salt as advised by your doctor and avoid other substitutes. None of the substitutes can be used freely as all contain varying amounts of sodium. Some also contain potassium (LoNa) and other minerals which may be restricted if your heart or kidneys are affected.

- Avoid salty foods like chips, tortillas, pickles, savouries (daal moth, bhujia, chiwda etc.) and snacks (mathari, samosa, pakodas, etc.). Avoid bakery products (bread, biscuits, cakes, etc.) which contain sodium in the form of baking soda. Avoid breakfast cereals, packaged rice, pasta and noodles with flavour mixes, farsaans, etc. Avoid eating dried fish and shell fish as it has high salt content.

Q Are there any other precautions I can take to ensure that I adhere to my daily salt allowance?

A

Check nutrition labels and choose foods that have less than 120 mg of sodium per 100 g. Eat home-cooked food. Avoid ready-to-eat or preserved foods. At home, use herbs and spices to enhance the flavour of your meals (eg. pepper, garlic, cumin, asafoetida(hing), lime, chillies, oregano, mixed herbs etc.). Avoid adding salt to meals while cooking.

Q I have excessive fluid in my tummy due to liver cirrhosis; Should I restrict my fluid intake? How much water and fluids should I consume daily?

A

- You should NOT restrict water and fluids IF you have never had ascites. If your serum sodium levels are normal you can consume fluids as per your thirst (around 1.5 -2 ltrs).
- Severe fluid restriction to one liter per day or less is RARELY needed even in patients with low levels of serum sodium (hyponatremia < 125 mEq/L), which can be treated with medicines. Strict monitoring of intake and output is advised if you need salt restriction and diuretic therapy.

Q Can I take fruit juices and coconut water regularly? How much can I take every day? Do I have to monitor my fluid intake daily?

A

- Fruit juices can be consumed within the overall fluid restrictions advised by the doctor, if not restricted for other reasons (eg. diabetes, overweight, high serum potassium, etc.). Fresh juices are better than packaged ones, which contain preservatives that are hidden sources of sodium. Although coconut water can be consumed within the overall fluid restrictions, it has no extra benefits. Beverages richer in calories and protein like milk, shakes, lassi, juices etc. are recommended.
- Monitoring fluid intake and output is very important in patients with ascites. Intake should be measured with a measuring glass and output with a urine pot with markings. A diary recording daily fluid intake and output must be maintained. Daily fluid balance (output subtracted from input) should be noted. Weekly fluid balance and weight loss targets set by the doctor should be met. The doctor should be contacted early if they cannot be met.

Q Are there any tips to help me stay within the permitted allowance of fluids?

A Some useful tips are given below.

- Eat your water - consume foods such as watermelon, cucumber, strawberries, pineapple, broccoli, bell peppers, etc. High natural water content released from such foods maintains a steady state of hydration.
- Suck on a piece of cardamom, ginger or clove to prevent drying of the mouth and thirst.
- Consume thick gravies and dals. Cutting down on water added to gravies and dals increases their nutrient density and also saves water for drinking.
- Carry your water bottle filled with 300 ml less than your daily fluid allowance and drink water in small sips, only from this bottle.

Q I was admitted to a hospital recently following drowsiness and swelling of the body due to liver cirrhosis and advised to restrict protein in my diet, Should I avoid a high protein diet and animal proteins in my diet?

A

- It has been a common misconception that if you have chronic liver disease you should be given a low protein diet. On the contrary, you are very likely to be malnourished and need a high protein intake (1.2-1.5 gm/kg dry body weight).
- The quality of protein from vegetarian sources, dairy products and animal sources is similar. Protein intake should be encouraged to the level advised by the doctor or the dietitian based on your dietary preferences.

Q Can I use milk in my diet? Would cow's milk be better or buffalo's milk? What are sources of protein in vegetarian diet? Is it necessary to use protein supplements?

A

- You are strongly encouraged to consume milk and milk products. Both cow's milk and buffalo's milk are rich in protein and calcium. Milk is the most important dietary source of calcium in a vegetarian diet. Weakness of bones (osteoporosis) is very common among patients with cirrhosis, especially in women. Buffalo's milk has a higher fat content and should be avoided in patients who are overweight. Skimmed milk and milk products should be preferred in them.

- Milk, curd, paneer, chhena, tofu, roasted chana, sprouts, all pulses and beans, soya bean, soya nuggets, besan products like cheela and khamman, sprouts, dry fruits like peanuts, almonds, cashew, pista and walnuts are rich sources of protein for vegetarians.

High Protein Diet

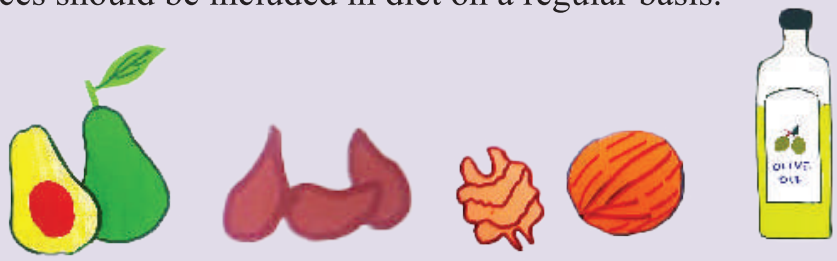
- In most patients, protein requirement of 1.2 to 1.5 gm/ kg can be fulfilled from dietary sources only. Protein supplements are needed only if protein target cannot be met with diet alone if you have severe undernutrition, severe loss of appetite, ascites, hepatic encephalopathy, etc.

Q I am overweight, suffer from liver cirrhosis and have been told to reduce my weight, How much fat can I consume in my diet?

A

- Even in overweight people, fat is part of a balanced diet. About 20-30% of total calories in the diet should be from fats. Weight loss is achieved by reducing total calories in the diet while keeping the diet balanced. Your dietitian will advise you a suitable diet. In general, up to 500 ml of visible fat (that is oil added to food) can be consumed per month. This amount is sufficient to derive health benefits from fats and avoid weight gain at the same time.

- Olive oil, avocado, fatty fish (Salmon and mackerel), walnuts and flax seeds are rich in omega-3 fatty acids and one of these sources should be included in diet on a regular basis.



Avacado | Flax seed | Walnut | Olive oil

Q Which fat would be better? Can I use ghee, butter, coconut oil or should I use only refined vegetable oils?

A

Saturated fats such as desi ghee, butter and coconut oil can be consumed in small quantities (5-10 ml daily). All vegetable oils have different nutritional benefits. It is best to keep changing the type of oil once in every 6-8 weeks. For example, if you are using sunflower oil at present, switch to soybean oil followed by rice bran oil and groundnut oil and then repeat this cycle.

Q I am overweight, suffer from liver cirrhosis and am trying to reduce my weight, Can I follow an intermittent fasting schedule to lose weight? Can I consume herbal products and powders (eg. Herbalife, Livomyn, Liv 52, milk thistle, etc.) to help in weight loss?

A

- Weight-loss regimes that include any kind of fasting are NOT recommended if you have cirrhosis since liver reserves of glycogen, which is the storage form of glucose, are depleted with cirrhosis. Prolonged fasting risks development of low blood sugar levels. In fact, frequent small meals, including a late evening snack, are recommended for you.

- Complementary and alternative medicines (CAM), Ayurvedic herbal products and over-the-counter remedies for weight loss are NOT recommended if you have cirrhosis. Most are polyherbal preparations with multiple active ingredients that have not been fully studied and some may contain toxic compounds that can cause drug-induced liver injury leading to liver failure which may even be fatal.

Q I suffer from liver cirrhosis and have been advised to take frequent meals and snacks, especially in the evening, Why do I need a late evening snack?

A

- If you have cirrhosis, your liver stores of glycogen are poor, which leads to breakdown of muscle to maintain blood levels of sugar and fat between meals and during fasting periods. A calorie dense late evening snack helps in preventing loss of muscle and may improve sarcopenia.

- Some easy, healthy and tasty snack ideas for a late evening snack or snacks at any time during the day are suggested below:

  - ✓ Paneer/Tofu/Egg roll - apply home-made chutney or unsalted butter to roti, add spices of choice (except salt) to tofu/egg/paneer, roll in roti and enjoy.
  - ✓ Fruit of choice with roasted nuts and seeds (tossed together to combine flavors)
  - ✓ Fruit smoothie (curd, fruit of choice, oats and nuts)
  - ✓ Roasted chana or peanuts (non-salted)
  - ✓ Dal dosa with vegetable stuffing
  - ✓ Rice pudding with fruits and nuts
  - ✓ Milk with high protein supplement
  - ✓ Dry fruit laddoo
  - ✓ Sprouted lentil chaat

Evening Snack

Roasted nuts

Sprouted lentil chaat

Egg roll

Dry fruit ladoo

Q I suffer from liver cirrhosis and have been advised to take vitamin and calcium pills, Can I not get the necessary vitamins and minerals in my diet? What are essential vitamins and pills that I should take?

A

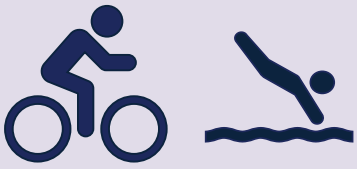
- Most vitamins and minerals are present in a normal balanced diet. However, due to poor dietary intake, an imbalanced diet and poor appetite, you may not get adequate doses of vitamins and minerals in food and it is prudent to supplement them.

- Your physician or dietitian will advise you about intake of multivitamin supplements. Recommended daily allowances of Calcium, Vitamin D, B complex vitamins, other fat-soluble vitamins (A, D, E and K), iron, zinc and magnesium should be taken regularly since most patients with liver cirrhosis have moderate to severe malnutrition. In case deficiency of any specific vitamins and mineral is identified, your doctor will advise you to take higher or therapeutic doses to correct the deficiency.

Q I am overweight, suffer from liver cirrhosis and have had blood vomiting and water in my tummy. Which exercises can I do to improve my muscle strength? How often and how long should I do exercises?

A

- You are likely to have decompensated cirrhosis and should perform exercises only under the supervision of the liver doctor and a qualified trainer. A proper combination of flexibility, balance, strengthening and endurance exercises should be followed.
- After baseline evaluation to ensure safety and status of frailty and sarcopenia, a personalized exercise program is developed for you. A gradual build-up of duration and intensity of exercise should be done following important do's and don'ts for exercise in cirrhosis.



AEROBIC TRAINING

Cycling
Jogging
Walking
Light swim

RESISTANCE TRAINING

Weights
Chair dips
Resistance bands
Squats

BALANCE TRAINING

Side/Back leg raise
Sit & stand reps
Go around chair
Toe stand

FREQUENTLY ASKED QUESTIONS

POST LIVER TRANSPLANT CARE

CONVENOR:
Sanjiv Saigal

MEMBERS:
Joy Varghese
Parijat Gupte
Vibha Varma

FAQs on Post Liver Transplant Care

1. When can I start exercising after liver transplant surgery. When can I start to going to the gym. Should I avoid abdominal exercises?
2. What type of diet and what restrictions in diet are advisable for post liver transplant recipients?
3. Why do I need to take medicines after liver transplant. Do I need to continue them life long?
4. Do these medicines have side effects.Is there any way to reduce side effects. What happens if I don't tolerate a particular drug?
5. What should I do If I miss a dose of medicine?
6. If there is increased risk of infections, then do I need to isolate myself at home and avoid public contact?
7. Is my risk of getting cancer more because of these drugs?
8. Can I use other Brands of the same medicines for better availability or cheaper cost?
9. If necessary for other medical conditions, Can I use other medicines safely?
10. Can I take vaccines or complete remaining vaccination schedule of a child?

11. When is it safe to get pregnant after a liver transplant. Are immunosuppression drugs safe in pregnancy?
12. What are the tests other than LFT & Tacrolimus level, that I should be doing regularly after liver transplant surgery?
13. Prior to liver transplant surgery, I did not have diabetes. Now I have diabetes and need medications. Is it a side effect of surgery. For control of diabetes, is insulin or oral drugs better?
14. My daughter underwent liver transplant surgery at the age of 2 years and now her cholesterol level is slightly higher than normal. What should be done further?
15. I underwent liver transplant surgery 3 years ago and I weigh 126 kgs and now I have been found to have grade II fatty liver. What are the effects of fatty liver in post liver transplant recipients?
16. Can I go ahead with Bariatric surgery to reduce my body weight. Can I do intermittent fasting or any other diet plan after liver transplant surgery?
17. Which diseases tend to recur after transplant and how is it monitored?

SHIVRAM PRASAD SINGH
PRESIDENT

MAMUN-AL-MAHTAB
SECRETARY GENERAL

UNDER THE AUSPICES OF SAASL WOMEN IN HEPATOLOGY FORUM

AABHA NAGRAL
CHAIRPERSON

LUBNA KAMANI
CO-CHAIRPERSON

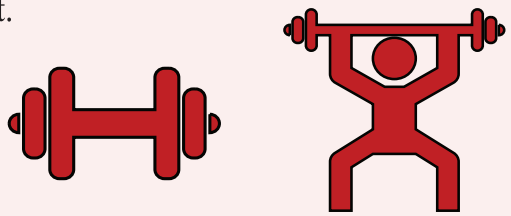
ROKSHANA BEGUM
MEMBER SECRETARY

SAMRIDDHI POYEKAR
FAQ's CO-ORDINATOR

Q When can I start exercising after liver transplant surgery. When can I start to going to the gym should I avoid abdominal exercises?

A

- Usually, regular physical activity like brisk walking, jogging is advisable after four to eight weeks from liver transplant.
- Strenuous exercises like weight lifting, frequent bending, abdominal exercises are strictly not advisable during the three months, due to risk of development of hernia.
- After three months, liver transplant patients can start attending gyms. However, it varies with the recovery of the patient following liver transplant.



To be avoided during first three months

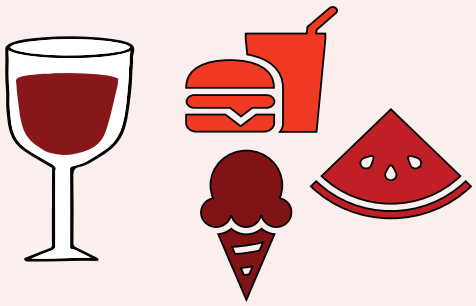
Q What type of diet and what restrictions in diet are advisable for post liver transplant recipients?

A

- Maintain clean, hygienic and proper cooking methods.
- Have a balanced diet consisting of whole grains and cereals, vegetables and few servings of fruits with adequate fibre. Lean meats, poultry and fish can be included in diet. Use low-fat milk or eat other low-fat dairy products.
- Avoid street food, ice and water containing foods and raw foods outside.
- Avoid alcohol, especially if you had alcohol related liver disease.

- Take plenty of water to maintain hydration.
- Avoid grapefruit and grapefruit juice due to its effect on a group of immunosuppression medications (tacrolimus or cyclosporin). Please note that grapefruit is a fruit which is different from grapes.
- Avoid added salt and foods with high salt like pickles, papads, dry fish, etc .

Consume balanced diet consisting of whole grains, pulses, fruits, vegetables, fish, lean meat, low fat milk and egg. Food should be freshly made and home cooked



Avoid raw, street food, alcohol in any form

Q Why do I need to take medicines after liver transplant. Do I need to continue them life long?

A

- Our body's immune system is designed to fight against any foreign (non-self) material. It helps fight infections, allergens and tumours.

- The new liver (though put in patient's body as life saving measure) is recognised as a foreign material/tissue by patient's immune system. (even though it may have been donated by a close relative). The immune system mounts a response with the help of immune cells and proteins to eliminate this foreign organ. In medical terminology, it is called 'Rejection'. Rejection can lead to failure of new liver in matter of days to months if not treated in time.

- To keep immune system in check and prevent 'Rejection', patients need to take medicines which are collectively called 'Immuno-suppressants (medicines which suppress immunity).

- Yes you need to continue the immunosuppression lifelong. In Immediate post transplantation period, number and doses of medicines are higher. As the time after transplant advances, body accommodates the new organ. Both number and doses of medicines reduce with time but are never completely stopped. Only select children, who have undergone transplantation at an early age, may come off immunosuppressants, approximately a decade after transplantation.

Q Do these medicines have side effects. Is there any way to reduce side effects. What happens if I don't tolerate a particular drug?

A

- Yes, like any other medicines, they do have side effects.
- Steroids, which are used in initial 2-3 months cause weight gain, acne, increase in blood sugar and muscle and bone weakness. Steroids are usually withdrawn after 2-3 months.
- Drugs such as Tacrolimus/cyclosporine (CNIs) can cause increase in blood pressure, blood sugar, irritability and kidney problems. But regular monitoring of levels, adjusting the doses, change in drug or adding medicines to counter side effects usually takes care of these problems.
- Other group of drugs like MMF or Azathioprine can cause drop in blood counts and increased frequency of stools.
- Relatively new drugs such as Everolimus (mTOR inhibitors) can cause increase in lipids and protein loss in urine.
- Proper timing of medication and strict adherence to instructions and check-ups will definitely help in reducing the side effects. Self-medication or stopping medications without prior instructions is not advisable at any time and can lead to major complications.
- Your doctor can change the drug or regimen of drugs if you do not tolerate it and obtain the same desired effect.

Q What should I do If I miss a dose of medicine?

A It is advisable not to miss doses. Use phone alarms or ask your close relatives or colleagues to remind you. In case you miss one dose, do not take double the regular dose next time. Continue with regular dose next time. In case you miss medicines 2 days or more, then it is advisable to consult your doctor.

Q If there is increased risk of infections, then do I need to isolate myself at home and avoid public contact?

A No. Normal life is encouraged after the transplant. At home, keep good general and personal hygiene. Avoid close contact with people with cough cold, fever. In public, one needs to avoid contact with individuals with respiratory symptoms, wear masks in high-risk areas such as hospitals and closed public gatherings etc. Regular cleaning of hands and/or use of sanitisers can help reduce risk of infections.ext time. Continue with regular dose next time. In case you miss medicines 2 days or more, then it is advisable to consult your doctor.

Wear mask at public places

Q Is my risk of getting cancer more because of these drugs?

A Though it is marginally higher than general people, it can be significantly reduced by avoiding use of tobacco, smoking (oral cavity, neck and lung cancers), use of sunscreens in long exposure to the sunlight (Skin cancer – in fair skin individuals) and regular surveillance. Surveillance includes:

- Mammography and cervical pap smear for breast and cervical cancer respectively, at intervals advised by your doctor in women.
- Prostate specific antigen (blood test for prostate cancer), oral cavity examination in tobacco chewers, annual skin examination for all, is also recommended.
- Screening for colon cancer will be recommended by your doctor with stool tests and if required colonoscopy beginning at age of 50 years.

Q Can I use other Brands of the same medicines for better availability or cheaper cost?

A In some countries, many generic brands are available for one medical compound. Avoid changing brands unless very essential, especially in early days after the transplant. Drug levels in body may change with change of brands. Consult your transplant team before you do so.

Q If necessary for other medical conditions, Can I use other medicines safely?

A Yes, but with caution. Immuno-suppressants can interact with other medicines. It may lead to loss of effect or increased side effects. Always avoid using medicines without consulting doctors. Please show your regular prescription of medicines to the doctors before them prescribing new medicines.
Certain food items interact with these medicines, get information from your doctors or nurse co-ordinators.

Q Can I take vaccines or complete remaining vaccination schedule of a child?

A

- As a general rule, Live attenuated vaccines (where organisms are live but are incapable of infection in a normal individual), should be avoided.
- Live vaccines include MMR, oral polio, chicken pox vaccines. Contact with children who take these vaccines also should be avoided for few days as they may shed virus after vaccination.
- Recommended vaccines for liver transplant recipients include pneumococcal, hepatitis A and B, tetanus diphtheria and yearly influenza.
- Vaccines in their standard doses may be less effective due to immune suppression. You may require increased dose, frequency to obtain the desired effect.

VACCINES RECOMMENDED

- Pneumococcal
- Hepatitis A
- Hepatitis B
- Influenza

Q When is it safe to get pregnant after a liver transplant. Are immunosuppression drugs safe in pregnancy?

A Consult your transplant team and gynaecologist before planning pregnancy. It is advisable to avoid pregnancy till liver function settles and drug levels are steady. Most methods of contraception are safe if liver function is good. In patients who desire to conceive, high risk medicines are electively changed to safer ones. Key medicines such as Tacrolimus, steroids and azathioprine are safe in pregnancy. Mycophenolate should be avoided in pregnancy. Levels of these drugs may change through pregnancy, which requires close and frequent monitoring. Drugs considered safe during pregnancy are safe in breast feeding period.

Q What are the tests other than LFT & Tacrolimus level, that I should be doing regularly after liver transplant surgery?

A

- It is highly recommended for all post liver transplant patients to check their sugar levels regularly. The frequency for monitoring varies with the time duration from the date of transplant and the sugar control. During the first month, blood sugar levels may fluctuate drastically and everyday monitoring is advisable. After two to three months, patients should check blood sugars once or twice a week. From three months to one year, once in a month monitoring of blood sugar will suffice.
- Cholesterol and triglyceride levels should be checked once in every three months for 1 year post transplant. After one year of transplant, once in a year monitoring is advised.
- Once in a year- kidney function test (serum creatinine, urine routine, urine protein /creatine ratio), cardiac checkup (ECG, echocardiogram), serum calcium, vitamin D levels, DEXA scan, Blood sugar level, lipid profile, complete blood count, thyroid function test and ultrasound abdomen with doppler scan of the liver. AFP is done in those who had a hepatocellular carcinoma. Screening for extrahepatic cancers is also recommended as mentioned above.

Q Prior to liver transplant surgery, I did not have diabetes. Now I have diabetes and need medications. Is it a side effect of surgery, For control of diabetes, is insulin or oral drugs better?

A

- Diabetes is not a side effect of surgery. However, it can be due to effect of medications given after liver transplant especially steroids and tacrolimus. Other factors contributing to diabetes include – genetic predisposition, dietary factors, sedentary life style, obesity.
- Both oral hypoglycaemic drugs and insulin can be used in post-transplant patients. In early post operative period, insulin has better sugar control than oral drugs.
- A stepwise treatment approach with dietary modification, oral hypoglycaemic drugs followed by addition of insulin as per the diabetologist is advised later on.

Q My daughter underwent liver transplant surgery at the age of 2 years and now her cholesterol level is slightly higher than normal, What should be done further?

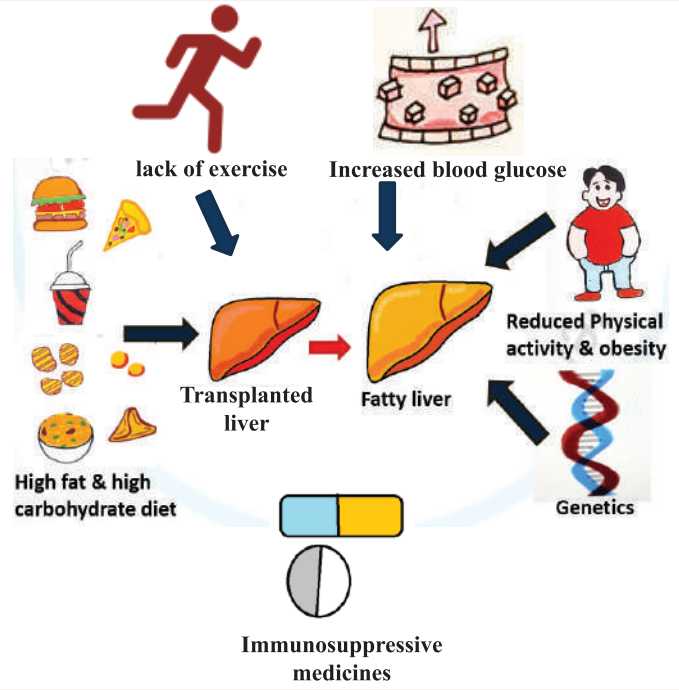
A

- Increase in cholesterol levels could be the effect of medications given to maintain functioning of the liver. Close monitoring and adherence to instructions is recommended.
- Liver transplant recipients with high cholesterol levels should be treated, irrespectively of whether they are lean or obese. Even in lean patients, high cholesterol increases the risk of heart attack, stroke, fatty liver, etc
- To avoid such complications, dietary and medical management is mandatory in these patients
- Avoid intake of sweets, refined sugars, junk foods, soft drinks, etc
- Increase the physical activity.

Q I underwent liver transplant surgery 3 years ago and I weigh 126 kgs and now I have been found to have grade II fatty liver, What are the effects of fatty liver in post liver transplant recipients?

A

- Fatty liver in a post liver transplant is the result of side effects of immunosuppressive medicines, diabetes and dyslipidemia post-transplant, sedentary lifestyle, unhealthy eating habits, genetic predisposition.
- Fatty liver imposes excessive stress on the normal functioning of the liver. In post-transplant individuals, progression of fatty liver is much faster when compared to normal people. Although the effects are silent during the initial phase, it can result in serious issues if left unaddressed. Apart from liver damage, it also increases the risk of cardiac issues, stroke and can affect the overall well-being.
- All patients diagnosed with fatty liver after liver transplant should undergo complete screening for metabolic syndrome- check blood pressure, waist circumference, body mass index (BMI), fasting lipid profile, blood sugar levels, fibroscan to assess degree of liver scarring.



Q Can I go ahead with Bariatric surgery to reduce my body weight, Can I do intermittent fasting or any other diet plan after liver transplant surgery?

A

- Treatment of fatty liver includes strict adherence to dietary modification (Low carbohydrate, low fat hypocaloric diet) and regular physical activity as advised by your doctor. Bariatric surgery is advisable for patients refractory to dietary and medical treatment for obesity in post-transplant patients. There is no evidence to suggest any advantage of special diets for post-transplant patients.

Q Which diseases tend to recur after transplant and how is it monitored?

A

- Liver transplant removes the fibrotic liver, however the new liver is likely to get scarred if the causative factors persist.
- Autoimmune diseases which tend to recur include autoimmune hepatitis, primary biliary cirrhosis and primary clerosing cholangitis. Few liver transplant recipients may develop autoimmune hepatitis first time after liver transplant (denovo autoimmune hepatitis) due to modification of the patients's immune system by the donor immune cells and the immunosuppressive drugs. Regular checkup helps detect the recurrence at early stage which then can be kept under control by adjusting the immunosuppressive drugs.
- Though alcoholic liver disease and fatty liver are not transmissible but tend to recur if one fails to maintain alcohol abstinence and lifestyle modifications (diet and exercise) respectively post-transplant.

- Preexisting risk factors such as obesity, diabetes, dyslipidemia (which may also worsen post-transplant), physical inactivity, unhealthy dietary habits, side effects of immunosuppressive drugs and genetic makeup all predispose you to develop fatty liver post-transplant.

- Liver cancer can also recur after transplant and need regular surveillance. Use of certain drugs such as everolimus (mTOR inhibitors) may prolong the time to recurrence. Even if you did not have liver cancer prior to transplant, there is a risk of developing a new cancer in the transplanted liver and hence requires regular monitoring.

- Hepatitis B and Hepatitis C can recur post-transplant as the immune suppression allows rapid viral multiplication. However, the risk is minimal if medications to suppress viral replications are taken properly. Medications for HepatitIs B need to be taken life-long whereas those for Hepatitis C are for a restricted period of 3-6 months.

FREQUENTLY ASKED QUESTIONS

PRIMARY SCLEROSING CHOLANGITIS

CONVENOR:
Kaushal Madan

MEMBERS:
Ashish Kumar
Mukta Bapat
Randhir Sud

FAQs on Primary Sclerosing Cholangitis

1. What is Primary sclerosing cholangitis (PSC) and how is it caused?
2. Did I develop the disease because of poor eating or drinking habits?
3. How is PSC diagnosed?
4. Do I need liver biopsy?
5. How do I know if I have PSC?
6. Is there a likelihood of my other organs being involved?
7. Can PSC affect children and pregnant women?
8. Is PSC treatable? What options do I have to cure this disease?
9. Do I have a risk of developing any cancer because of PSC? What do I need to do for an early diagnosis?
10. When will I need a liver transplant? Can I get PSC again after transplant surgery?

SHIVRAM PRASAD SINGH
PRESIDENT

MAMUN-AL-MAHTAB
SECRETARY GENERAL

UNDER THE AUSPICES OF SAASL WOMEN IN HEPATOLOGY FORUM

AABHA NAGRAL
CHAIRPERSON

LUBNA KAMANI
CO-CHAIRPERSON

ROKSHANA BEGUM
MEMBER SECRETARY

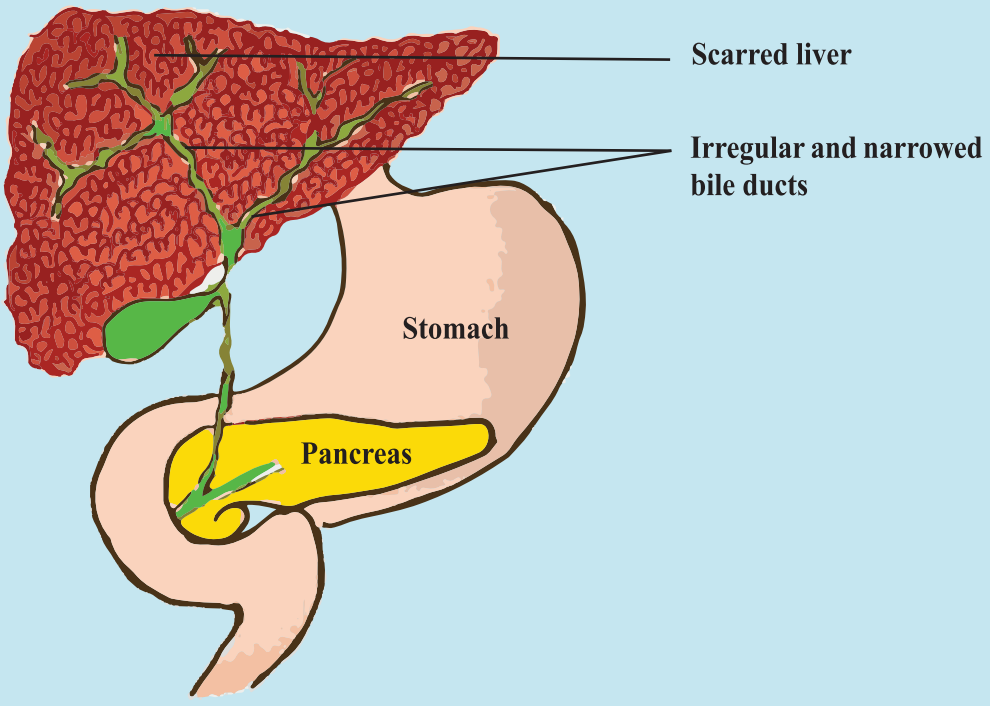
SAMRIDDHI POYEKAR
FAQ's CO-ORDINATOR

Q What is Primary sclerosing cholangitis (PSC) and how is it caused?

A

- Primary sclerosing cholangitis (PSC) is a condition where the body's altered immune system starts fighting against its own bile ducts leading to their damage.
- Bile ducts are a branched system of ducts, that collect bile from liver and deliver it to the intestine, so that it can be mixed with food for purpose of digestion. The damage of bile ducts lead to narrowing and obstruction in the bile ducts which causes the ultimate problems. It is more commonly seen in males.
- Long standing damage can lead to cirrhosis (scarring of the liver) and tumours in the liver (cholangiocarcinoma).

Primary sclerosing cholangitis (PSC)



Q Did I develop the disease because of poor eating or drinking habits?

A No. As explained above, it is a disease of a dysfunctioning immune system. It does not happen with either poor eating or drinking habits. But once a patient has this kind of liver disease, any amount of drinking of alcohol can lead to worsening.

Q How is PSC diagnosed?

A

- Although, some suggestive signs and symptoms along with certain blood tests can support the diagnosis of PSC, it is mostly diagnosed on an imaging test that outlines the bile ducts.
- Classically in the past (2-3 decades back), the diagnosis was made by subjecting the patient to endoscopic retrograde cholangiopancreatography (ERCP) which used to be done endoscopically and was associated with risk of bacterial infections.
- Nowadays it is done non-invasively using MRI. This process where an MRI is done to outline the bile ducts is called Magnetic Resonance Cholangio-pancreatography (MRCP).
- The blood tests (liver related blood tests such as raised GGT, gamma glutamyl transferase, or alkaline phosphatase, suggest obstruction and infection in the bile duct).
- Fibroscan may suggest how bad or hard, the liver has already become.
- Endoscopy and colonoscopy may also be required to look for complication of PSC and associated conditions like inflammatory bowel disease.
- There are many other diseases which mimic PSC (having irregular bile ducts on imaging), such as HIV, IgG4 cholangiopathy, certain infections and these have to be excluded by appropriate tests.

Q Do I need liver biopsy?

A

- Most patients are diagnosed based on MRCP in presence of suggestive symptoms.
- Rarely however, the process of bile duct injury and scarring involves the smaller microscopic ducts inside the liver (small duct PSC). In such cases, a piece of liver might be taken with the help of a needle in order to examine it under a microscope to make this diagnosis. Liver biopsy may also give an idea about the stage of the disease.

Q How do I know if I have PSC?

A

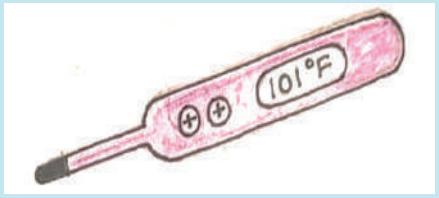
- PSC may present with symptoms suggestive of obstruction to the bile duct. In the early stages PSC is usually asymptomatic.
- When symptoms do arise, they usually take the form of generalized itching, jaundice (yellowing of eyes), recurrent fevers with chills, pain in abdomen. These may present as relapsing attacks also.
- Some patients may be diagnosed to have PSC during their course of inflammatory bowel disease such as ulcerative colitis or Crohn's disease.
- Some patients with progressive disease can come directly with advanced cirrhosis, ascites (fluid in abdomen) and hematemesis (blood in vomiting) or even cholangiocarcinoma (cancer of bile duct).

SYMPTOMS OF PSC

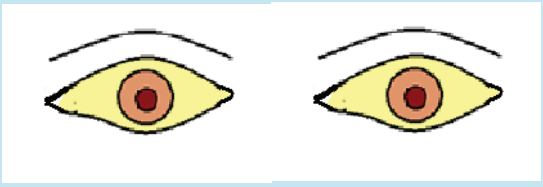
SYMPTOMS DURING EARLY STAGES OF PSC

Itching

Pain in abdomen

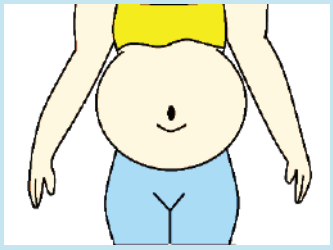


Fever



Jaundice

SYMPTOMS DURING LATE STAGES OF PSC



Fluid in belly (ascites)

Blood in vomitus (hematemesis)

Q Is there a likelihood of my other organs being involved?

A

- Yes. A proportion of patients with PSC may have associated illnesses such as ulcerative colitis or Crohn's disease. These conditions are associated with ulcerations and inflammation of the large and/or small intestinal mucosa and may present with diarrhea and bloody stools.
- PSC may also be associated with joint symptoms, especially the joints of the spine, as a condition called ankylosing spondylitis. There may be involvement of other joints as well.

Q Can PSC affect children and pregnant women?

A

PSC is a disease of young adult males but can be seen in children as well pregnant women. Women with PSC can have normal pregnancy. The diagnosis and treatment remains similar. Outcome of pregnancy in PSC appears to be normal provided liver status is stable and inflammatory bowel disease (if present) is under control. Nearly one third patients may find their liver tests worsened during pregnancy. A close watch will be necessary for liver function, bowel disease , development of infection and any complications of liver disease during entire course.

Q Is PSC treatable? What options do I have to cure this disease?

A

- Liver transplant is the only definitive treatment option for PSC, because this disease has a tendency to progress slowly over time. One treatment goal after diagnosis is to be able to prolong the time it takes to progress to the stage requiring transplantation.
- Medications are given to control itching, infection, jaundice, nutritional and vitamin deficiencies. Patients who have elevated cholesterol are given cholesterol lowering drugs. The silver lining is that a large number of drugs are undergoing trial for PSC and we may have effective drugs to slow down the progression of disease in the future.
- Patients need periodic check-ups for liver function evaluation and to evaluate for and preempt complications that may arise.
- Patients who manifest with symptoms of cholangitis (infection of the bile ducts) need antibiotics and if needed endoscopic stenting of bile duct strictures by doing ERCP.

Q Do I have a risk of developing any cancer because of PSC? What do I need to do for an early diagnosis?

A

- Patients with PSC are at an increased risk of developing cancer of the bile duct or of the gall bladder. They need regular surveillance with MRI/MRCP, blood tests like CA19-9 especially in adults with large bile duct involvement. Even gall bladder cancers and hepatocellular cancer in PSC with cirrhosis are more common.

- Since PSC is associated with inflammatory disease of the bowel, the patients with both the conditions, may also be prone to develop colo-rectal cancers (cancer of the rectum and large intestine). Patients with ulcerative colitis need regular colonoscopic surveillance for early detection of colon cancer.

Q When will I need a liver transplant Can I get PSC again after transplant surgery?

A

Liver transplant is the only cure for this disease so all patients are potential candidates. It is indicated when there is end stage liver disease, recurrent infections, persistent itching (pruritus), severe jaundice (high bilirubin) and in select hepato-biliary cancers. PSC can recur in up to one third of patients with PSC, but it can be caught early and managed since the patients are on regular monitoring.

FREQUENTLY ASKED QUESTIONS

TROPICAL INFECTIONS OF LIVER

CONVENOR:
Jayanthi Shastri

MEMBERS:
Aruna Bhave
Mala Kaneria
Sanjay Chandnani

FAQs on Tropical Infections Of Liver

1. Can jaundice be caused only by viral hepatitis? Are there other infections which can also cause jaundice? Is it possible to dianose these infections as a cause of liver injury?
2. Is the liver directly involved in these infections, as in acute viral hepatitis?
3. Is liver involvement in these infections fatal? Can it cause permanent damage leading to long term consequences like liver failure?
4. What is a liver abscess and how does it present?
5. How will my liver abscess be treated?
6 What is a hydatid cyst, and how does it occur? Can it be prevented?
7. What are the symptoms of hydatid cyst? How is it diagnosed?
8. How will my hydatid cyst be treated?

SHIVRAM PRASAD SINGH
PRESIDENT

MAMUN-AL-MAHTAB
SECRETARY GENERAL

UNDER THE AUSPICES OF SAASL WOMEN IN HEPATOLOGY FORUM

AABHA NAGRAL
CHAIRPERSON

LUBNA KAMANI
CO-CHAIRPERSON

ROKSHANA BEGUM
MEMBER SECRETARY

SAMRIDDHI POYEKAR
FAQ's CO-ORDINATOR

Q Can jaundice be caused only by viral hepatitis? Are there other infections which can also cause jaundice? Is it possible to diagnose these infections as a cause of liver injury?

A

- Besides viral hepatitis (i.e. hepatitis A, B, C, D and E), jaundice or yellowish discolouration of the eyes can also be caused by certain tropical infections like malaria, leptospirosis, scrub typhus, dengue and typhoid, where in the patient can present with fever and jaundice and abnormal liver function tests (blood tests) along with other disease related symptoms.

- On most occasions, these tropical infections present as acute onset of fever with liver and/or kidney involvement. Based on the clinical symptoms and signs, blood tests such as complete blood counts, the pattern of liver derangement on the liver function tests and the definitive diagnostic tests for these infections, it is possible to diagnose these infections as a cause of liver involvement. On many occasions, the definitive tests, such as smear for malarial parasite, rapid malaria antigen test or tests for dengue, etc may be negative and these fevers are labelled as Acute febrile illnesses (AFI) with liver involvement or undifferentiated fevers.

Q Is the liver directly involved in these infections, as in acute viral hepatitis?

A The involvement of the liver in these tropical infections may be direct or indirect.

- In malaria, the red blood cells infected by the malarial parasites may rupture leading to a mild form of jaundice and anaemia, where the liver is not directly involved in the causation of the jaundice.
- In more severe forms of malaria (falciparum malaria), there may be direct involvement of the liver by the clogging of the small blood vessels in the liver with the infected red blood cells (RBCs) or by an effect of the toxins released by the parasites.
- Sometimes, antimalarial drugs (drugs given to treat malaria) may also cause jaundice, especially primaquine by causing rupture of RBCs if your body lacks an enzyme called Glucose 6 phosphate dehydrogenase.
- Additionally, liver involvement may be due to severe infection due to malaria.
- In leptospirosis and scrub typhus, the liver involvement is caused by toxins, which leads to vasculitis (swelling of blood vessels), which in turn may lead to jaundice.
- In typhoid and dengue, usually, there is no obvious jaundice. However, the liver function tests may show abnormality of liver enzymes which is detected by your doctor. In severe cases however, there may be direct involvement of the liver or secondary infection, leading to jaundice.
- Besides the above causes, tropical infections, particularly dengue can also trigger an immunological condition called haemophagocytic lymphohistiocytosis (HLH), which may affect the liver.

Q Is liver involvement in these infections fatal? Can it cause permanent damage leading to long term consequences like liver failure?

A

- The liver functions usually return to normal in most of the patients, as the infection resolves. When these tropical infections take a severe course (eg. sepsis, HLH, etc), recovery may be prolonged, but the liver eventually does recover once the patient stabilizes.
- In contrast to viral hepatitis B and C which can lead to chronicity, liver involvement in the tropical infections is transient and recovery is complete.

Q What is a liver abscess and how does it present?

A

- A liver abscess is a collection of pus inside the liver. It is caused by either bacteria (pyogenic liver abscess) or protozoal infections (amoebic liver abscess). Infection can reach the liver from intestine or from other organs through blood. Pyogenic liver abscesses are usually associated with infection of the bile ducts or infection in the intestine /other organs in abdomen (e.g. appendicitis).
- A liver abscess usually presents with fever, chills, pain in the abdomen (especially below the right rib cage where the liver is situated) and/or jaundice. If untreated, it can lead to severe illness like shock (low blood pressure) and multiple organ failures. In our country, amoebic liver abscess (a protozoal organism found in contaminated water) is most common cause. A complicated liver abscess can present with rupture of liver abscess into abdominal cavity or in the cavity surrounding the lung (pleural cavity) or heart (pericardial cavity).

Q How will my liver abscess be treated?

A

- General management of abscess depends on age of the patient, symptoms and size of the liver abscess and other associated illnesses like diabetes or presence of immunity lowering illness or drugs.
- Oral or intravenous antibiotics forms the mainstay of treatment in amoebic liver abscess. Administration of antibiotics results in resolution of fever and pain in majority of patients after 48-72 hours. Drainage of abscess via a small needle and catheter insertion through skin will be advised if the size of abscess is large, presence of abscess in the left part of liver, abscess being very close to the surface of the liver, or if the abscess is not responding to antibiotics alone within 72 hours.
- Pyogenic abscesses are treated with antibiotics, managing the cause of bile duct obstruction if present, management of any associated abdominal infection and draining the abscess with a catheter if large. Aspiration (removal by a needle) of pus from the abscess and culture of the same may also be done for tailoring the antibiotics accordingly.
- Your doctor may advise periodic ultrasound to monitor the size of abscess to look for resolution.
- Surgical option is reserved for those situations where liver collection has breached the liver surface and has spilled into the abdominal cavity (Peritonitis). This is an emergency situation.

Q What is a hydatid cyst, and how does it occur? Can it be prevented?

A

Hydatid cyst is caused by infection by a tapeworm called Echinococcus. These tapeworms live inside sheep and dogs. Humans acquire the infection on ingestion of food or water contaminated with dog faeces (which contain the egg of tapeworm).

The risk of acquiring the infection increases with

- Handling infected dogs
- Sharing the eating or drinking space with the infected dog
- Eating fruits and vegetables contaminated with soil containing the eggs.
- Unhygienic personal or animal conditions
- Slaughtering of sheep

Hydatid cyst is a preventable disease and the following measures can reduce the risk of infection

- Periodic deworming of dogs with praziquantel by a trained veterinarian
- Wash fruits and vegetables properly
- Wash hands with soap and water after handling dogs and before preparing food/eating
- Improved hygiene in slaughtering of sheep

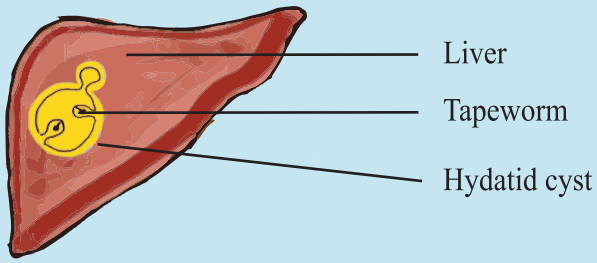
Q What are the symptoms of hydatid cyst? How is it diagnosed?

A

Hydatid cyst most commonly infects the liver, but other organs such as lung, spleen, muscles, kidneys, brain, pancreas may also be involved.
The symptoms of liver hydatid cyst are:

- There may be no symptoms if small in size and calcified
- Pain in right upper part of abdomen
- Loss of appetite
- Nausea and vomiting
- Lump/swelling in right upper abdomen
- Jaundice and fever
- Hives

The diagnosis of Hydatid cyst is generally made by imaging (Ultrasound or CT scan of the abdomen) and blood tests. Hydatid cysts may be visualized and evaluated with ultrasonography, computed tomography (CT), or magnetic resonance imaging (MRI). CT/MRI abdomen are best mode for determining the number, size, and location of the cysts. CT scans may also be used for monitoring lesions during therapy and to detect recurrences. IgG ELISA is most sensitive blood test.



SYMPTOMS OF HYDATID CYST

Pain in abdomen

Nausea and Vomiting

Q How will my hydatid cyst be treated?

A

The treatment of hydatid cyst depends on its location, size and symptoms of patient and will be decided by your doctor taking into account the above mentioned factors.

It includes

- Medication: Antiparasitic drug - albendazole or mebendazole are used for treatment. For smaller sized cysts <5cm medical therapy alone can be used for treatment. It is also used with surgery and percutaneous aspiration of cyst. The treatment may last for 3-6 months. Monitoring of white blood cell count and liver function tests are recommended during the therapy.
- Percutaneous treatment; PAIR (puncture, aspiration, injection and re-aspiration): In this technique a needle is used to drain the cyst and then an antiparasitic chemical agent is injected into the cyst and re-aspirated. (sucked out with a needle and syringe).
- This procedure is repeated until the cyst is completely empty of its contents.
- Surgery: It can be done by open or laparoscopic method where the cyst or a part of liver is removed. It is usually done for large complicated cysts. During the surgery there is risk of the cyst spilling into your abdomen.

FREQUENTLY ASKED QUESTIONS

VARICEAL BLEEDING

CONVENOR:
Rokshana Begum

MEMBERS:
Arifa Tasnim
Jhumur Ghosh
Narwana Khaleque

FAQs on Variceal Bleeding

1. What are varices? How do the varices in the esophagus (food pipe) develop?
2. What are the chances that I have esophageal varices if I have cirrhosis? What are the chances that I will develop bleeding from the varices?
3. What are the symptoms of varices?
4. How are varices diagnosed?
5. How are varices treated ?
6. Is band ligation safe or are there any side effects of this procedure?
7. Do we need to take medications regularly? Are these easily available?
8. Can variceal bleeding recur after treatment? Are there any warning signs for variceal bleeding?
9. What lifestyle changes can help prevent variceal bleeding?
10. Can variceal bleeding be life threatening?

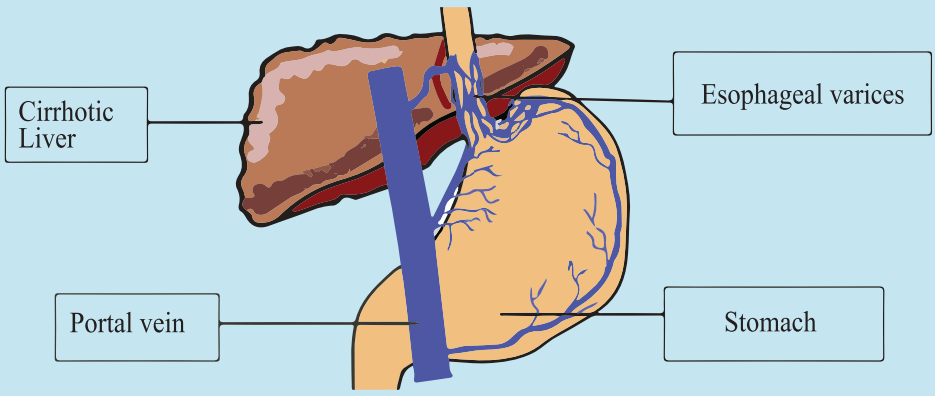
Q What are varices? How do the varices in the esophagus (food pipe) develop?

A

- Varices are veins that are swollen compared to normal veins. These swollen veins can leak or sometimes burst to cause massive bleeding known as variceal bleeding.

- In advanced liver injury called cirrhosis (in which there is permanent scarring of liver), these types of dilated veins or varices are found in different parts of intestine from foodpipe to anus. The most common site is the food pipe (esophagus). These enlarged veins in esophagus are called esophageal varices. The second most common site of varices is your stomach when they are called gastric varices.

- When the liver becomes scarred, the passage of blood from the portal vein (vein which carries blood from intestine to liver) through the liver becomes difficult. This increases the pressure of blood in the portal vein also called as Portal hypertension. Eventually, portal hypertension causes the blood to flow through other small veins in the foodpipe (which normally do not carry large amount blood) and stomach which are connected to the portal vein. Thus these veins enlarge and swell up to form varices which can also burst causing bleeding.



Q What are the chances that I have esophageal varices if I have cirrhosis? What are the chances that I will develop bleeding from the varices?

A Esophageal and gastric varices are seen in about 40% of those with early stages of cirrhosis while they are seen in 70% of those with advanced cirrhosis. The risk of bleeding from them is around 5-15% per year depending on stage of cirrhosis and size of varices. This risk can be reduced by controlling liver injury and regular follow up with your doctor who will do an endoscopy to keep a check on size of these varices. Even if you do not have varices on endoscopy at present , you are still at risk of developing them at the rate of 7-8% per year, hence regular follow up with your doctor and endoscopy is essential.

Q What are the symptoms of varices?

A Varices do not cause any symptoms until they become large enough and then burst to cause bleeding. When bleeding occurs, the following symptoms may be found

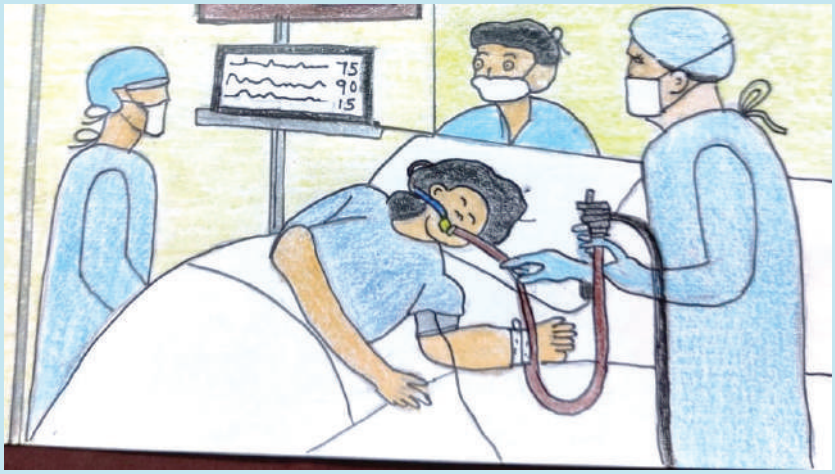
- Vomiting of large amount of blood which is usually coffee coloured
- Black tarry stool which is also foul smelling.
- Due to loss of blood in vomitus, you may develop lightheadedness, decrease in your blood pressure, decreased level of consciousness.

Hematemesis (vomiting of blood)

Q How are varices diagnosed?

A

- **Upper Gastro-Intestinal (GI) Endoscopy:** An endoscope is a flexible tube having a tiny camera at the tip. This tube is introduced down the throat to the oesophagus, stomach, and part beyond the stomach known as the duodenum (first part of small intestine). Dilated veins at the lower end of the oesophagus (most common site), stomach, or duodenum can be detected by a camera, and photographs are taken. If varices are seen, your doctor also measures its size and looks for presence of any red markings or spots which indicate risk for bleeding.



- If your doctor finds any high risk signs for bleeding, elastic bands may be applied on to the varices(also called variceal band ligation). If no high risk markers for bleeding are seen, your doctor will advise you to undergo endoscopy at regular intervals to keep a check on the varices.

- **Imaging tests:** Ultrasound of abdomen and and portal doppler or CT scan or MRI of the abdomen provide information about the portal and splenic veins and give information on the presence of varices.

- **Fibroscan:** Fibroscan is another imaging test which gives an idea about the degree of liver scarring and probability of finding varices on endoscopy.

Q How are varices treated?

A

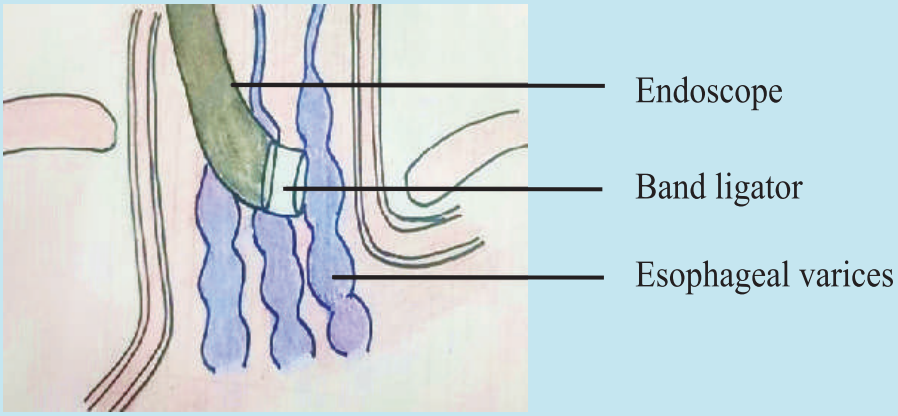
Treatment of varices depend on the patients' condition - whether it is actively bleeding varices or diagnosed before bleeding. Varices are treated in the following two situations

- Preventing varices from bleeding
- Control of bleeding when it occurs

Bleeding prevention:

- **Medication:** The main cause of varix development and bleeding is portal hypertension. Some drugs can reduce the pressure in the portal vein and hence in the varices thereby reducing the risk of bleeding. These drugs include propranolol, nadolol, carvedilol (Beta-blocker group of drugs). These drugs are associated with few side effects such as tiredness, lightheadedness, shorthness of breath, nausea, constipation, sexual/erectile dysfunction. If you develop any of these side effects , you need to report to your doctor.

- **Band ligation:** When varices are large sized and threaten to bleed, a popular treatment is done endoscopically known as Endoscopic Variceal/Band Ligation (EVL/EBL). Here the elastic band is applied over varices to prevent or stop bleeding.



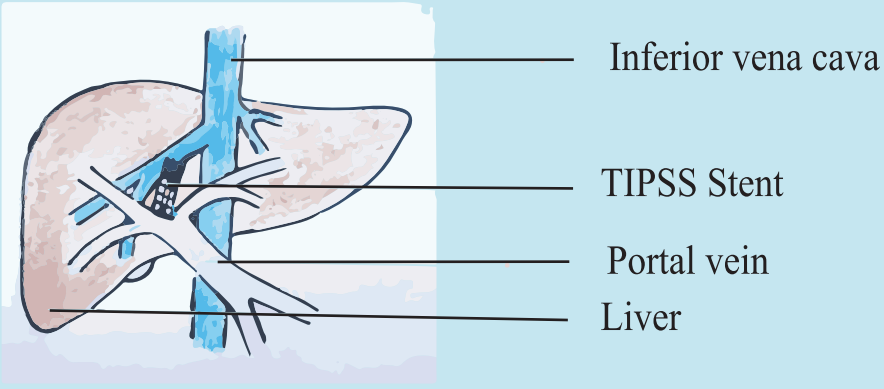
ENDOSCOPIC VARICEAL BAND LIGATION

Treatment for bleeding varices:

Bleeding varices is a life-threatening emergency condition and patients should be treated at the hospital.

- Blood transfusion and IV fluids are needed to meet up the ongoing blood loss.
- An antibiotic is given to prevent infection.
- Medications like octreotide and vasopressin given as injections (into the veins) are available which slow down the blood flow to the portal vein and control bleeding. These drugs can be given up to 5 days after a bleeding episode.
- Special rubber bands are placed on the varices (endoscopic variceal band ligation) or injection of chemical substances (sclerosants or glue) in to the varices.
- In complicated cases with uncontrolled or repeated bleeding procedure called TIPSS is performed.

Transjugular intrahepatic portosystemic shunts (TIPSS): A stent is placed between the portal and another vein namely the Inferior Vena Cava to reduce pressure in the varices.



TIPSS PROCEDURE

- Oesophageal tamponade: Balloon is used to give pressure over varices to stop massive bleeding as a life saving measure.
- Oesophageal Stent: Stent is placed over varices with the help of endoscopy may help control bleeding.
- Liver transplantation is the ultimate treatment of severe liver disease and portal hypertension in an eligible patient.

Q Is band ligation safe? Are there any side effects of this procedure?

A

- Yes, band ligation is safe.
- It does not damage the oesophageal wall. Most people think that banding is a kind of operation but practically it is just an endoscopic procedure. It can be done as emergency procedure during bleeding episodes when it can be life saving. It can also be done on outpatient basis when there is no bleeding episode as a part of regular checkup.
- However, it has a small risk of complications, like bleeding, scarring of the oesophagus, post-bleeding ulcer, temporary chest pain, etc. All these problems are easily manageable.

Q Do we need to take medications regularly? Are these easily available?

A

- Variceal bleeding can be prevented by medications called Beta blockers like Propranolol, carvedilol, etc. These medicines should be continued indefinitely.
- Availability of Medicine: Yes, these drugs are a group of anti-hypertensive drugs that are inexpensive and freely available.

Q Can variceal bleeding recur after treatment? Are there any warning signs for variceal bleeding?

A

- Variceal bleeding has a high risk of recurrence after treatment. Beta-blockers and endoscopic band ligation are the recommended treatments to help prevent re-bleeding.
- After initial banding treatment, upper GI endoscopy is repeated at regular intervals and several sessions of banding may be required until the esophageal varices are abolished or are small enough to reduce the risk of further bleeding.
- No, there are no symptoms or warning signs which can alert us to the possibility of variceal bleeding.

Q What lifestyle changes can help prevent variceal bleeding?

A

Lifestyle changes are not directly associated with the prevention of variceal bleeding but we know that variceal bleeding commonly occurs in patients with cirrhosis. So, maintaining liver health may help the management of varices. Following lifestyle measures can be taken:

- Avoiding alcohol abuse.
- Regular screening of hepatitis B and C virus and vaccination against hepatitis B virus which may otherwise cause liver cirrhosis.
- Eating a balanced diet and maintaining a healthy weight.
- Avoiding drugs called NSAIDs - these are commonly used pain killers which can induce bleeding eg ibuprofen, diclofenac, numesulide, etoricoxib etc. Paracetamol is a safe pain killer to be taken for patients of cirrhosis.
- If cirrhosis has developed for any reason, an upper GI endoscopy needs to be performed for the development of varices at timely intervals.

Q Can variceal bleeding be life threatening?

A Variceal bleeding is a life-threatening condition and the risk of dying because of variceal bleeding is 15-20%. However, if proper management is provided in a timely manner, a patient can survive after variceal bleeding and treatment should be continued to prevent rebleeding.

FREQUENTLY ASKED QUESTIONS

WILSON DISEASE

CONVENOR:

Aabha Nagral

MEMBERS:

Ashish Bavdekar
Moinak Sen Sharma
Pettarusp Wadia

FAQs on Wilson Disease

1. What is Wilson Disease?
2. When should one suspect Wilson Disease?
3. How is Wilson Disease diagnosed?
4. What are the chances that my family members will also have the disease? Any precautions to be taken if I am getting married?
5. Is Wilson Disease treatable with drugs? Do I have to take them lifelong?
6. What is the life expectancy? Can I lead a normal Life?
7. What foods do we need to avoid? Will my child have to be on a copper free diet lifelong?
8. My child has neurological Wilson Disease. His school performance has deteriorated. He is unable to speak clearly or walk fast. His behaviour has also changed. Will all this get better with medications?
9. When does a patient of Wilson Disease need a liver transplant? Can a close family member be a liver donor?
10. Are there any support groups providing knowledge and help to patients of Wilson Disease?

SHIVRAM PRASAD SINGH
PRESIDENT

MAMUN-AL-MAHTAB
SECRETARY GENERAL

UNDER THE AUSPICES OF SAASL WOMEN IN HEPATOLOGY FORUM

AABHA NAGRAL
CHAIRPERSON

LUBNA KAMANI
CO-CHAIRPERSON

ROKSHANA BEGUM
MEMBER SECRETARY

SAMRIDDHI POYEKAR
FAQ's CO-ORDINATOR

Q What is Wilson Disease?

A Wilson Disease (WD) is a rare genetic disorder that causes copper to accumulate in the liver, brain and other vital organs. It is named after Dr. Samuel Wilson who first described the disorder in 1912. It affects approximately 1 in 30,000 people worldwide. Most people with Wilson disease are diagnosed between the ages of 5 and 35, but it can affect younger and older people, as well. Copper is a trace metal which is present in many foods. Everyone needs small amounts of copper to remain healthy. Normally, the body can get rid of any excess copper that is not required by the body. This excess copper is secreted by the liver into the intestine and excreted into the faeces. However, in patients with Wilson Disease, due to their genetic defect, the body is not able to get rid of this excess copper and so it builds up in the body. Too much copper in the liver is harmful and leads to liver damage. Similarly excess copper in brain causes damage to brain tissue mainly in an area called the lenticular nucleus. Hence, Wilson Disease is sometimes also called hepatolenticular degeneration. When diagnosed early, Wilson Disease is treatable, and many people with the disorder live normal lives.

Q When should one suspect Wilson Disease?

A Copper deposition in the body starts very early in life since the genetic defect is present at birth. However, it takes a few years for copper to build up to a level where it causes significant damage, and the patient starts getting problems. Problems typically start to develop between the ages of 5 and 35 years, but it can occasional affect younger and older people, as well. The patient with WD is more likely to get liver problems in early childhood and neurological problems in adolescents and adulthood, but both may be affected simultaneously, causing liver, neurological, and psychiatric problems. Besides primarily affecting the liver and brain, Wilson Disease can also cause problems in the kidneys, bones, eyes and occasionally other organs in the body. Being a genetic disease, there could be another family member who has been diagnosed to have Wilson Disease or have signs and symptoms suggestive of it. Wilson Disease can have a very varied presentation and should be suspected if a person has any of the following:
Signs and symptoms of liver disease:

- Jaundice
- Fatigue (tiredness)
- Loss of appetite
- Abdominal swelling
- Anemia - low hemoglobin

Nervous system and psychiatric signs and symptoms:

- Slowness of movement
- Drooling of saliva
- Change in speech
- Difficulty in swallowing
- Difficulty in writing/Deterioration in handwriting
- Tremors
- Difficulty walking
- Loss of coordination
- Difficulty in schoolwork
- Depression, anxiety and mood swings

Other signs and symptoms

- Eye involvement - KF Ring, Sunflower cataracts which do not affect vision
- Bone and joint problems (knock knees, fractures)
- Kidney problems (kidney stones, renal tubular acidosis)
- Menstrual problems

Q How is Wilson Disease diagnosed?

A It is important to diagnose Wilson disease as early as possible. Permanent neurologic dysfunction and serious liver disease may occur if diagnosis is delayed or missed. Wilson disease is diagnosed based upon a detailed patient history, thorough medical evaluation, and specialized laboratory tests. There is no single reliable test that is used for making a diagnosis of WD. A battery of tests are required. These tests include:

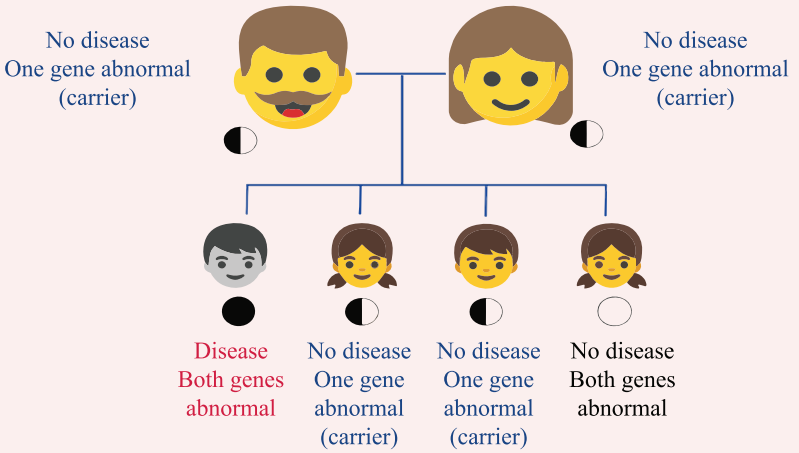
- A blood test to measure ceruloplasmin. This is a protein that binds copper in the blood. The level is low in most people with Wilson disease. Other blood tests may also be performed to test blood counts and liver function.

- A urine test to measure the amount of copper in the urine. This is tested on the urine produced over a 24-hour period. The urine copper is typically higher than normal.

- An examination of the eye by an ophthalmologist may show the golden, brown rings (Kayser-Fleischer rings) if they have developed. (They are not present in all WD cases but are usually present in patients with neurological problems).
- A small sample (biopsy) of the liver may be taken to look at increased copper in the liver and the extent of liver damage.
- Molecular genetic tests may be done to detect the mutation causing Wilson disease. This test is helpful when positive.
- Occasionally other tests like MRI of brain or Ultrasound of abdomen may be done to determine if there is significant brain damage or liver damage respectively.

Q What are the chances that my family members will also have the disease? Any precautions to be taken if I am getting married?

A Wilson disease (WD) is an "autosomal recessive" disease. This means that one of the two genes from each parent is carrying the disease (half a circle) while the other one is not (the other half of circle). The normal gene is stronger than the diseased gene. Hence the parent will not manifest with symptoms. When having children there is a chance that the two diseased genes will combine to produce a diseased child, (two diseased half circles joining to form a full diseased circle). However, the chances of this is 25% in each pregnancy.



Hence when one child is diagnosed, it is important to screen for this disease in the apparently normal siblings as well, as they may have silent disease. If two Wilson disease patients get married, then there is a 100% chance of disease in the child. Hence it is not wise to marry within the family or to another Wilson disease patient. Screening of cousins is not mandatory but advisable if there is a strong history of Wilson disease in more than one generation, indicating that there is a genetic transmission. Once Wilson disease is diagnosed, any unknown liver disease or neurological (brain related) or psychiatric illness in any blood related family member should be viewed with strong suspicion and brought to the notice of the physician.

Q Is Wilson Disease treatable with drugs? Do I have to take them life-long?

A

- Wilson disease is definitely treatable with drugs. Drugs such as D penicillamine, trientine and zinc are essential drugs that will remove copper from the body. Since there is a lot of retained copper in the body and more supply coming from food daily, these drugs are required lifelong. Even if symptoms disappear and all appears well, these drugs need to be taken for maintaining normal copper levels in the body. If discontinued at any point of time, the copper levels will rise and the disease is likely to return some time or the other. Once the disease returns, it will be difficult to control and often more severe than the previous time. Hence compliance to medications is the sole mantra and key to healthy living in Wilson disease.

- When a patient is on medicines, tests must be done from time to time (as per your physician's guidance) to see if the disease is in control or if there are any silent side effects of medicines. These mostly include blood and urine tests for monitoring. The dosage of the drugs may need to be modified to get a proper balance and ensure drug safety.

Q What is the life expectancy? Can I lead a normal life?

A Most persons with Wilson's disease once adequately chelated (i.e. copper removed from the body with correct medication) will do well in the long term. Many of them get gainful employment, have a life partner and can have most of the joys normal people have. With good treatment life expectancy can be on par with that of the country population. To maintain a normal life though it is very important that adequate chelating medication or zinc is taken and doses are not missed or discontinued. Regular monitoring is required which includes 24-hour urinary copper and regular follow ups with the doctors who are treating Wilson disease. Discontinuation of therapy, default of therapy can have hazardous complications with acute worsening of Wilson disease. Patients with liver cirrhosis not improving despite chelation may need additional treatment for the liver cirrhosis including a liver transplantation.

Q What foods do we need to avoid? Will my child have to be on a copper free diet lifelong?

A It would be prudent to only restrict specific copper-rich food items like nuts, soy, organ meat and chocolates especially in the first year of medication. The rationale is to allow adequate time for these drugs (chelators) to remove as much copper from body in the first year and attain stability without overloading the system with excess dietary sources of copper. Diet must be modified region- specific. Cereals, sugars, most lentils, fruits, vegetables and dairy products contain very little copper and should be an essential part of the diet. For non-vegetarians, egg and fish are safe. Red and white meat are also safe but should be cooked without the liver.

FOOD ITEMS ALLOWED (LOW COPPER)

Nuts, soya bean, soy milk and soya nuggets contain high copper and hence preferably restricted. Spices despite containing high copper, can be allowed in diet as the quantity consumed per day is very little. However, packaged, canned, tinned, roasted and pickled items can accumulate higher copper during its processing or shelving, hence best avoided. For those patients with advanced liver disease, giving high protein nutrition is more important than restriction of copper items in the diet. Parents and caregivers should consult the dietitian or physician for a carefully prescribed diet..

FOOD ITEMS RESTRICTED (HIGH COPPER)

Q My child has neurological Wilson Disease. His school performance has deteriorated. He is unable to speak clearly or walk fast. His behaviour has also changed. Will all this get better with medications?

A

- A child with neurological presentation of Wilson disease may show some or all of the above symptoms. The initial months may include worsening of school performance and a child who becomes very dull with reduced speech.
- Once we start de-coppering (chelating) there is a gradual improvement in the symptoms of patients. Chelation has to be done very slowly. Sudden mobilization of copper can cause initial worsening of symptoms despite starting with low doses of chelating agents (eg. D Penicillamine or Trientine). However, if we continue the medication gradually the child starts improving. Once the speech improves behaviour changes may be noticed including aggression, irritability and a change in personality.
- Over a period of 1-2 years with adequate chelation most of these symptoms improve significantly.
- During the acute phase of Wilson disease, we need a multidisciplinary approach with the requirement of various doctors and rehabilitation specialists in the team. Depending on the situation apart from the neurologist the child may need a physiotherapist, speech therapist, psychologist, psychiatrist and gastroenterologist (if there is liver involvement).
- There are specific medications which can be given in addition to chelating agents to improve the mood, behaviour, control aggression and also help with some of the involuntary movements like tremors or to reduce slowness of movement. These drugs can be subsequently reduced once the neurological symptoms improve with long term chelation.

Q When does a patient of Wilson Disease need a liver transplant. Can a close family member be a liver donor?

A Wilson disease is completely treatable with medications if diagnosed early. However, patients may not get diagnosed early and sometimes present for the first time with liver failure - deep jaundice, inability of the blood to clot and coma (encephalopathy). There is often the presence of hemolytic anemia (free copper circulating in the blood causes damage to the red blood cells and destroys them). In these situations, there is a high likelihood that the patient may survive only if he receives a liver transplant. Occasionally liver failure develops in a patient who stops taking medications on his or her own. In patients with liver failure who get transplanted, if there is presence of neurologic symptoms, these will also get corrected with a liver transplant. Even if a patient has only severe neurologic symptoms, a liver transplant has shown to be helpful in resolving the neurologic symptoms although this subgroup of patients are likely to have a higher rate of complications. If the close relatives are proven to not have the disease or are carriers of the disease, then they can donate a part of the liver.

Q Are there any support groups providing knowledge and help to patients of Wilson Disease?

A Support groups serve the function of creating a bonhomie between patients and their families. These meetings encourage exchanging notes with the others who are similarly affected. This is especially true for rare diseases as patient families feel isolated and helpless. The meetings also provide an opportunity for participants to have all their queries answered by experts on various aspects of the disease. There are many support groups for Wilson disease. The Wilson Disease Association International **(http://www. wilsonsdisease.org)** has several activities for patients of Wilson disease including publishing a newsletter and organizing regular support group meetings. In India, the Children's liver foundation **(https://childrenliverindia.org)** organizes regular support group meetings for patients of Wilson disease and the proceedings can be accessed online. It also provides help for investigations and drugs for needy patients. KEM Hospital Pune runs a support group **"ROWIKEM"** managed by patients and parents of children with Wilson disease. Besides conducting annual meetings, this group provides multi-disciplinary medical and non-medical support to the patients.