

1. Update on the Evaluation and Management of Portal Hypertension

Gabriella Aitcheson, Carensa Cezar, Irene John, and Binu V. John. Update on the Evaluation and Management of Portal Hypertension. *Gastroenterology & Hepatology Volume 17, Issue 12 December 2021*. 569-578

The term compensated cirrhosis has been proposed to be referred to as compensated advanced chronic liver disease (cACLD) and is defined as advanced progressive hepatic fibrosis with a hepatic venous pressure gradient (HVPG) more than 5 mm Hg. cACLD can be further classified as mild portal hypertension with HVPG 5-10 mmHg and clinically significant portal hypertension (CSPH) with HVPG greater than or equal to 10 mm Hg. CSPH is an important predictor of varices, variceal haemorrhage, ascites, hepatic encephalopathy and death. Though HVPG measurement is the gold standard for the diagnosis of PH, it is invasive, expensive, requires a trained team and can have interobserver variations. This review article gives an update regarding the new non-invasive imaging modalities which can accurately predict PH and avoid endoscopy.

- a) *Transient Elastography (TE)*: This comprises of the quantification of the shear wave velocity generated by a transducer, as the liver stiffness (LS). Recently it was observed that LS less than or equal to 15 kPa plus a platelet count greater than $150 \times 10^9 /L$ was able to rule out CSPH in a high proportion of cases. Berger et al developed determination of platelets liver elastometry ratio (PLER) calculated by dividing the platelet count by the LS (in kPa). With a ratio of 17 or more than 17, the risk of high-risk varices is close to zero percent whereas high prevalence can be predicted with PLER less than or equal to 6.2. TE can also measure splenic stiffness (SS). A SS cut-off of less than or equal to 46 kPa was highly sensitive for ruling out HRVs. This modality is cheap but has limited utility in obese patients and ascites.
- b) *Magnetic Resonance Elastography (MRE)*: This utilises the shear waves, generated by low frequency vibrations, which are assembled as they create a map of the stiffness in the liver and spleen. It is more accurate than TE as it covers greater volume and processes more complex shear wave motion. It is very useful in diagnosing fibrosis in non-alcoholic fatty liver disease. This too has limited use in iron disposition, massive ascites, and obesity.
- c) *Multiparametric Magnetic Resonance Imaging (MMRI)*: It uses a series of images to quantify fat, iron and fibrotic changes and creates a comprehensive picture of liver pathology. It is not altered by presence of fat or fluid unlike the above two modalities.

Few newer modalities of management are also mentioned in this article.

- a) *Beta blockers*: The role of non-selective beta (NSSB) in the management of cirrhosis related complications is controversial. Few evidences suggest that they reduce the risk of initial variceal bleeding in compensated patients. Recently reports have come where NSBB reduced the incidence of ascites, rate of transplant and death in decompensated patients as well.
- b) *Statins*: They are emerging as agent which can reduce mortality in cirrhotic patients. They improve angiogenesis, reduce endothelial dysfunction, regress fibrosis and increase nitric oxide (NO) bioavailability in the liver, which decreases intrahepatic vascular resistance and consequently decreases portal pressure. Zafra et al studied the role of oral Simvastatin and observed that it decreased hepatic vascular resistance by approximately 10%, increased hepatic NO products by 14% and decreased post-prandial increase in HVPG.
- c) *Albumin*: The property of albumin to bind to damaged molecules and decrease systemic inflammation and oxidative stress there by reducing endothelial damage, prevents the reduction in cardiac output and increases plasma renin. The Italian Association for the Study of the Liver recommend use of long-term albumin in decompensated cirrhosis. There are many studies that approve as well as disapprove long term use of albumin. More concrete studies are warranted before a definitive recommendation.

2. Idiopathic chronic pancreatitis: Beyond antioxidants

Mehta RM, Pandol SJ, Joshi PR. Idiopathic chronic pancreatitis: Beyond antioxidants. *World J Gastroenterol. 2021 Nov 21;27(43):7423-7432. doi: 10.3748/wjg.v27.i43.7423. PMID: 34887640; PMCID: PMC8613740.*

Chronic pancreatitis (CP) still continues to intrigue clinicians. So far, a well-defined standard of care is lacking and the management of CP is limited to a combination of analgesics, pancreatic enzymes, adequate nutrition, and antioxidants. The role of antioxidants in providing sustained pain relief or reversing disease activity has not been established yet. This article focuses on the role of antioxidants in the pain management of CP as well as tries to explore the evidences for statins and N-acetylcysteine (NAC) in the management. There have been a mixed verdict regarding the role of antioxidants in the pain management of chronic pancreatitis. Recent Cochrane Systematic Review of 18 studies concluded that antioxidants could be helpful in slight reduction in pain in CP. It is known that impaired autophagy and mitophagy play an important role in the pathology of CP as the damaged cellular compounds are significant source of reactive oxygen species. Piplani et al observed that simvastatin can restore autophagy and mitophagy and thus reduce the oxidative stress. Another

drug NAC has been found to have antioxidant and antifibrotic effects and can have promising results in CP. More randomised trials would make the picture clear.

3. Bowel Preparation for Pediatric Colonoscopy

Mamula B, Nema N. *Bowel Preparation for Pediatric Colonoscopy*. *Front Pediatr*. 2021 Sep 1;9:705624. doi: 10.3389/fped.2021.705624. PMID: 34540766; PMCID: PMC8442953.

Adequate bowel preparation (BP) is the key to a successful colonoscopy. Almost 25% of patients undergoing colonoscopy have suboptimal BP resulting in longer procedure times, missed pathology, unsuccessful ileal intubation, and at times repeat procedure. This paper reviews the recent and past literature exploring factors related to BP. There are many variable BP practises around the world. Patient education remains an important component of BP in pediatric population. Many studies have pointed out the significance of improving patient education in order to improve the BP. A number of scales have been devised to assess the adequacy of BP, e.g. Aronchik scale, Ottawa Bowel Preparation Scale, and the Boston Bowel Preparation Scale. But they are not specific and have observer variations. ENDOANGEL is a novel AI software which can have high accuracy in assessing BP. Polyethylene glycol (PEG) is a synthetic water-soluble polymer which absorbs water and softens the stool. PEG comes with (PEG-ELS) and without electrolytes. PEG-ELS is efficacious and is widely used but is unpalatable and requires larger volume intake. Newer one

contains ascorbic acid also and has better palatability and is required in small volume. PEG 3350 without electrolytes is tasteless and has better acceptability but is to be given over 2-4 days. Sodium-based preparations as sodium picosulfate have been found to be equally effective as PEG-ELS. They are required in lower volumes, are more tolerable taste wise and are easy to administer. Senna is a stimulant laxative and is not systematically absorbed. As a monotherapy it is not very effective, can be used along with an osmotic laxative but requires 3-4 days of preparation. BP can be done either by giving the laxative at once over a short period or can be split into two dosages where half is given one day prior and the other half on the day of colonoscopy. Split dose regimen is more effective but has limited application in younger children as they are needed to be nil orally for a long period of time. Diet during BP also is crucial. Out of liquid diet and a low residue diet which includes dairy product, meat etc, the latter is more acceptable. Other than oral cleansing agents few cleansing devices have been introduced. Pure Vu is such an intra procedural device where a pump is used to irrigate the colon with vortex mixture of water and air which breaks up the fecal matter and the material to be disposed is collected in a sleeve attached to endoscope. Another less time-consuming device HyGleaCare R is consists of a nozzle which infuses warm water directly into the rectum and cleans it.

Compiled by **Dr Rimjhim Shrivastava**