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ENDOSCOPIC BARIATRIC AND METABOLIC THERAPY. WHERE ARE WE AND WHERE ARE WE GOING?

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Obese patients with nonalcoholic fatty liver disease/nonalcoholic steatohepatitis (NAFLD/NASH) require an endoscopy balloon or gastroplasty with/without duodenal mucosal resurfacing (DMR), while lean patients with NAFLD/NASH require endoscopic DMR. Duodenum is at the center of metabolic control; a sustained glycemic improvement is seen even after 12 months after a single DMR. Duodenal nutrient passage strongly influences insulin sensitivity, independent of weight change. DMR is safe and yields beneficial disease-modifying metabolic effects, especially in patients with high fasting plasma glucose levels. The newer DMR therapies include Laser, radiofrequency ablation (RFA) and electroporation.

RECET^{TM} is the first nonthermal endoscopic ablative therapy and, thus, the only therapy to ablate cells selectively. It is feasible with the technical success achieved in 100% of subjects. It is safe and well-tolerated, with a few mild to moderate and transient adverse events. No serious adverse events have been reported with RECET^{TM}. Duodenal RECET^{TM} results in durable and clinically meaningful improvement in glycemic control. A dose response has been observed, with higher energy doses being more effective without any increased risk of adverse events.

ENDOSCOPIC/RADIOLOGIC MANAGEMENT OF NONVARICEAL PORTAL HYPERTENSIVE BLEEDING

Dr Vikram Bhatia, New Delhi

Nonvariceal portal hypertensive bleeding is bleeding in the gastrointestinal tract caused by portal hypertension (PHT), but not from esophageal or gastric varices. Instead, it involves bleeding from other sources within the digestive system due to increased pressure in the portal vein system. The four most common types of nonvariceal portal hypertensive bleeding include:

- **Portal hypertensive gastropathy (PHG):** It is attributed as the cause of 4% of all acute bleeding in chronic liver diseases (CLD). A study has shown that transjugular intrahepatic portosystemic shunt (TIPS) can improve the endoscopic appearance of PHG lesions in 6 to 12 weeks, with reduced transfusion requirements.
- **Gastric antral vascular ectasia (GAVE):** In argon plasma coagulation (APC) treatment of GAVE, more profound mucosal injuries must be avoided. Additionally, studies have shown that the recurrence-free rate following this treatment is 50% for 1 year and 35% for 3 years. In the case of APC-refractory GAVE, the RFA treatment method can be used as it yields comparable results to APC. Endoscopic variceal ligation (EVL) is superior to APC and RFA treatment of GAVE with a success rate of 81% to 87.8%. TIPS is not effective for treating GAVE
- **Portal hypertensive duodenopathy (PHD):** The frequency of PHD among cirrhosis patients with esophageal varices is 14%. This condition can be treated with TIPS and APC.
- **Portal hypertensive colopathy (PHC):** This chronic condition has a 3% to 71% prevalence in cirrhosis patients. Although bleeding from PHC is uncommon, it is seen in 0% to 9% of cases.

Some of the additional key points to remember are:

- PHG, PHD and PHC are poorly defined entities with an unclear clinical correlation.
- There is a dearth of data on the frequency and significance of bleeding from PHT-related non-variceal sources.
- Treatment for bleeding from PHG, PHD and PHC should be individualized.

ROUTE OF LIVER BIOPSY – PERCUTANEOUS, EUS, TJLB, LAPAROSCOPIC: HOW TO CHOOSE?

Dr Manas Panigrahi, Bhubaneswar

A liver biopsy is usually the most specific test to assess the nature and severity of liver diseases, such as multiple parenchymal liver disease, abnormal liver tests of unknown etiology and fever of unknown origin. In addition, it can be helpful in monitoring and detecting focal or diffuse abnormalities in imaging studies.

Several methods are currently available for obtaining liver tissue: percutaneous biopsy, transjugular biopsy,

endoscopic ultrasound (EUS) and laparoscopic biopsy. Each of these methods has its advantages and disadvantages.

Plugged liver biopsy (PLB), a modification of percutaneous liver biopsy, is performed in patients with impaired coagulation where transjugular liver biopsy (TJLB) is unavailable. It also provides greater access to both hepatic lobes, thereby increasing the adequacy and yield of tissue.

Additionally, this method is cost-effective, requires less technical skills, is suitable for patients who are obese, and results in lower post-procedure discomfort. Hence, it can be used in various clinical settings.

On the other hand, TJLB is known to reduce the overall risk of complications associated with PLB. This method can also be used in a patient with coagulopathy and acute liver failure.

However, noninvasive methods are gaining acceptance at present. They are also considered reliable and applicable tools for predicting the course of liver cirrhosis, such as EUS-guided liver biopsy (EUS-LB). This method can diagnose the presence of liver disease that progresses in a zonal fashion, such as primary sclerosing cholangitis, viral hepatitis and nodular regeneration. In contrast, some of the disadvantages associated with this are the complexity and expensive nature of the procedure.

The laparoscopic method can be used to visualize the peritoneum and to decide between operation and conservative treatment strategies in cases of peritoneal carcinomatosis. Also, this is used to biopsy hepatic masses when vascular structures limit the transcutaneous approach.

Remember, "*One size does not fit all*", so an individualized approach is the key to finding an appropriate modality. Furthermore, the choice of one technique over the other depends on the following:

- Availability
- Personal preference
- Clinical situation.

TRANSJUGULAR LIVER BIOPSY AND HEPATIC VEIN PRESSURE GRADIENT

Dr Sreedhara B Chaluvashetty, Chandigarh

- TJLB is an alternative to a percutaneous liver biopsy.
- Specimens obtained from TJLB have a reduced risk of hemorrhage compared to those obtained with the percutaneous technique.
- Its clinical role has expanded due to the possibility of performing hemodynamic evaluation.
- TJLB is indicated in failed percutaneous liver biopsy or in a patient with a contraindication to percutaneous biopsy, in coagulopathy (a most common indication), massive ascites, patients requiring hemodynamic evaluation as part of their diagnostic workup, morbid obesity, liver transplant or with serum bilirubin >6, in patients undergoing a TIPS procedure.
- There are no real contraindications for a TJLB. However, relative contraindications include a lack of suitable venous access and a biopsy of a focal lesion.
- An international normalized ratio (INR) of >2 and a platelet count of <30 should be corrected before a patient is taken up for the TJLB procedure. The Society of Interventional Radiology (SIR) guidelines establish that additional blood products should be administered if the INR is >2.5 times the control and the platelet count is <30,000.
- Overall, TJLB is a highly efficacious, well-tolerated and safe procedure. Adequate liver samples of good quality for diagnostic and staging purposes can be obtained with minimal risks.
- Hepatic vein pressure gradient (HVPG) is the safest and most reproducible method to measure portal pressure.
- HVPG is the pressure difference between the wedge hepatic vein pressure (WHWP) and the free hepatic vein pressure (FHVP).
- HVPG >10 mmHg indicates clinically significant portal hypertension (CSPH). Patients with CSPH are at high risk of developing clinical complications, including variceal bleeding, ascites and encephalopathy.
- While a biopsy sample represents only a small liver area, serial HVPG measurements characterize the overall degree of fibrosis or cirrhosis, reflecting an underlying heterogeneous disease process.
- HVPG is the gold standard for PHT measurement, and its safety and reproducibility are well-proven. It has become an important diagnostic and prognostic tool and can be adopted in routine practices as per the Baveno VII consensus.