Endoscopy in the management of portal hypertension

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INTRODUCTION

Endoscopy plays a central role in the management of portal hypertension contributing to: early detection of esophageal and gastric varices (EGV); stratification of patients in terms of their risk of bleeding; primary or secondary prophylactic therapy; monitoring the effect of prophylactic therapies on bleeding risk; and treatment of acute variceal bleeding, portal hypertensive gastropathy (PHG), and ectopic varices. The goal of this chapter is to provide an evidence-based approach to the endoscopic management of portal hypertension.

ENDOSCOPY IN PRIMARY PROPHYLAXIS

Screening

The detection of esophageal varices (EV) in patients with cirrhosis has been used to direct therapy for the primary prevention of variceal bleeding. Up to 90% of patients with cirrhosis develop EGV during their lives and up to 40% develop variceal bleeding. Variceal bleeding is a major cause of death in patients with cirrhosis and the mortality rate with the first episode of bleeding is high (20–50%). Several randomized controlled trials (RCTs) have confirmed that medical and endoscopic therapies may reduce the risk of variceal bleeding and possibly death. Therefore, a strategy of endoscopic screening followed by primary prophylactic therapy has the potential to reduce morbidity, increase survival and lessen attendant health care costs.

Whether all patients with cirrhosis should undergo endoscopic screening (universal screening) is controversial. The American College of Gastroenterology (ACG) and the American Association for the Study of Liver Disease (AASLD) recommend a screening endoscopy in patients with cirrhosis every 2 years followed by medical prophylactic therapy in patients with large varices. However, the efficacy of endoscopic screening in an unselected population of patients with cirrhosis is unproved. In contrast, a
benefit is established for high-risk patients selected according to clinical criteria. A recent cost-effectiveness analysis has shed more light: empiric β-blocker therapy for the primary prophylaxis of variceal bleeding was a cost-effective strategy while the use of screening endoscopy to guide therapy added a significant cost with only a marginal increase in effectiveness. Prospective comparisons of empiric versus screening-directed prophylaxis are needed.

Selective screening endoscopy

What means are available to select high risk patients for endoscopic screening? The clinical factors that correlate with a higher bleeding risk are Child–Pugh classes B and C (in particular, the parameters ascites and encephalopathy), advanced age, and alcohol-induced cirrhosis. One should also consider the patient’s life expectancy, comorbid illnesses (e.g. hepatocellular carcinoma), and motivation. The ratio of the platelet count to the maximum spleen diameter measured ultrasonographically may predict the presence or absence of EV. This ratio was independently associated with the presence of EV in a multivariate analysis of cirrhotic patients including those with compensated cirrhosis. A platelet count (n/mm³) to spleen diameter (mm) ratio > 909 confers a negative predictive value of 100% for the diagnosis of EV while a ratio ≤ 909 confers a positive predictive value of 74%.

Screening initiatives require affordable screening methods. Screening cirrhotic patients according to the platelet count/spleen diameter ratio was far more cost effective than uniform endoscopic screening. Unsedated transnasal endoscopy, an attractive alternative to conventional endoscopy because of its lower cost, was compared to conventional endoscopy in 15 patients with cirrhosis. Both methods detected 10 EV and 2 GV, but the transnasal approach missed one case of PHG.

Although the efficacy of screening is apparent in high risk patients, physicians’ implementation of screening is far from complete. Only 46% of patients referred to a liver transplant center had undergone either endoscopy or radiological studies to detect varices.

Risk stratification of esophageal and gastric varices

Once varices are identified on screening, the endoscopist must stratify the patients according to their risk of experiencing first bleeding in order to direct therapy targeted at reducing this risk. Stratification is based on endoscopic appearance, clinical and laboratory parameters.

Esophageal varices

Overall, unselected patients with known EGV have a low risk of variceal bleeding in the first year (3.5%) and the benefit of medical therapy is likely not better than placebo. Propranolol did not prevent the development of large varices in patients with small or absent varices. Therefore, a careful selection of patients who are most likely to benefit from β-blocker therapy is important in order to effectively manage their illness. Patients with large