but severe rectal variceal bleed occurs in only 0.5% to 5%.[338,339] The management approach should mirror that of nonpregnant patients.[340] Prophylaxis with NSBBs can be used in portal hypertensive colopathy, as 90% of patients concomitantly have GEV.[341] If lower endoscopy is indicated, sigmoidoscopy with tap water enemas are preferred. The safety of polyethylene glycol has not been adequately studied in pregnancy.[342]

Management of Splenic Artery Aneurysm

Splenic artery aneurysm (SAA) is a rare condition that affects patients with PHT and can present with rupture during pregnancy. SAA rupture is associated with a high fetal and maternal mortality of 15.6% to 90% and 21.9% to 70%, respectively. Limited data support treatment of SAA to prevent rupture. There is no established consensus for SAA therapy based on diameter, as risk appears to be highest when SAA is greater than or equal to 2 cm, but 50% of lesions presenting with rupture during pregnancy are smaller than 2 cm. More data are needed to make recommendations on treatment approaches to SAA based on size.

MANAGEMENT OF PHT AT DELIVERY AND POSTPARTUM

The increase in intra-abdominal pressure during vaginal delivery might increase portal pressure and risk of variceal rupture.[313,343,344] Assisted vaginal delivery to minimize straining and shorten the second stage of labor can reduce this risk. Cesarean delivery may increase risk of bleeding from direct injury to abdominal wall varices and increase risk for postpartum ascites.[336] For cesarean delivery, platelet counts should generally be greater than 50,000/mL. Ultimately, mode of delivery should be guided by obstetric indications.[345,346] Postpartum hemorrhage risk is increased in women with cirrhosis, which may be related to underlying thrombocytopenia or higher rate of cesarean deliveries.[310] Prevention by active management of the third stage of labor is the mainstay of therapy.

GUIDANCE STATEMENTS

- Endoscopic procedures require preoperative consultation with MFM specialists to coordinate fetal monitoring and maternal sedation.
- In women with cirrhosis, prepregnancy endoscopic variceal screening is recommended. Screening in the early second trimester is indicated if not performed within 1 year before conception or if there is ongoing liver injury or decompensation occurs.
- Meperidine, midazolam, propofol, and fentanyl may be used in pregnancy, with efforts to minimize the duration of anesthesia.
- For pregnant women with small GEV, primary prophylaxis using NSBBs should be considered.
- For pregnant women with medium or large GEV, primary prophylaxis using band ligation or NSBBs is recommended. Propranolol is the preferred NSBB.
- For pregnant women with acute variceal hemorrhage, standard therapy with octreotide or somatostatin, proton pump inhibitors, antibiotic therapy with cephalosporins, and endoscopy are recommended. Terlipressin should be avoided.
- Mode of delivery should be guided only by obstetric indications.

Liver Diseases Unique to Pregnancy and Their Management

HYPEREMESIS GRAVIDARUM

Hyperemesis gravidarum occurs in 0.35% to 2.0% of pregnancies.[347] It typically occurs in the first trimester and is characterized by persistent vomiting with weight loss greater than or equal to 5% of prepregnancy body weight, dehydration, and ketonuria (Table 7). Rarely, symptoms persist throughout the pregnancy. Abnormal liver enzymes occur in approximately 50% and are rarely greater than 1,000 IU/mL.[348,349] In general, ALT is greater than aspartate aminotransferase (AST), and jaundice rarely occurs. Biochemical abnormalities typically resolve with hydration and resolution of vomiting. Liver biopsy is rarely indicated, but, when performed, reveals normal parenchyma, mild fatty change, or bland cholestasis.[350]

Treatment includes rehydration, correction of electrolyte abnormalities, nutrition, thiamine supplementation to prevent Wernicke's encephalopathy,[351,352] and anti-emetic therapy. Anti-emetic agents with favorable pregnancy safety include ondansetron,