Precise and effective treatment of hepatic emergencies, both during and immediately after pregnancy, is crucial for maternal and fetal outcomes. This document provides an overview of hepatic disorders during pregnancy, focusing on mild to moderately affected conditions.

Hepatic Disorders During Pregnancy

Hepatic Disorders Mildly to Moderately Affected by Pregnancy: Medical and Obstetric Management

Hepatic, biliary, and pancreatic disorders are often complex and clinically challenging during pregnancy. Hepatic disorders can affect the pregnancy and vice versa. The differential diagnosis of hepatic diseases is particularly broad during pregnancy because it includes disorders related to, and unrelated to, pregnancy. This article discusses the physiologic effects of pregnancy on liver function; the differential diagnosis of hepatic findings during pregnancy; modifications of abdominal imaging and hepatobiliary endoscopic procedures during pregnancy; and the medical and obstetric management of hepatic, biliary, and pancreatic diseases that are mildly to moderately affected by pregnancy.

Hepatic Disorders Severely Affected by Pregnancy: Medical and Obstetric Management

Hepatic disorders severely affected by pregnancy include choledochoj cysts that can be compressed by the gravid uterus and potentially rupture; hepatic adenomas that exhibit accelerated growth because of hyperestrogenemia during pregnancy; acute intermittent porphyria that is exacerbated by increased female sex hormones during pregnancy; splenic artery aneurysms that can
rupture during pregnancy because of compression by the gravid uterus; Budd-Chiari syndrome that is promoted by hyperestrogenemia; and hepatitis E and herpes simplex hepatitis that are particularly severe during pregnancy. Hepatic disorders unique to pregnancy include intrahepatic cholestasis of pregnancy; acute fatty liver of pregnancy; preeclampsia and eclampsia; and hemolysis, elevated liver function tests, and low platelet count (HELLP) syndrome. Most disorders uniquely related to pregnancy are treated by prompt fetal delivery as soon as the fetus is sufficiently mature.

**Hepatic Failure: Complications and Therapy**

**Acute Liver Failure Including Acetaminophen Overdose**

Robert J. Fontana

Acute liver failure (ALF) is a dramatic, highly unpredictable clinical syndrome defined by the sudden onset of coagulopathy and encephalopathy. Acetaminophen overdose, the leading cause of ALF in the United States, has a 66% chance of recovery with early N-acetylcysteine treatment and supportive care. Cerebral edema and infectious complications are difficult to detect and treat in these patients and may cause irreversible brain damage and multiorgan failure. One-year survival after emergency liver transplantation is 70%, but 20% of listed patients die, highlighting the importance of early referral of patients who have ALF with a poor prognosis to a transplant center.

**Hepatic Encephalopathy**

Santiago J. Munoz

Hepatic encephalopathy (HE) is a syndrome of neuropsychiatric dysfunction caused by portosystemic venous shunting, with or without intrinsic liver disease. Patients with hepatic encephalopathy often present with the onset of mental status changes ranging from subtle psychologic abnormalities to profound coma. Several hypotheses have been proposed to explain the mental impairment associated with portosystemic shunting and liver disease. Clinicians diagnosing HE frequently have the opportunity to intervene and reverse severe HE, even hepatic coma. The recent advances in understanding and management of HE are the subject of this article.

**The Hepatorenal Syndrome**

Santiago J. Munoz

The onset of renal failure in a patient with cirrhosis or acute liver failure is alarming because it raises the possibility of the hepatorenal syndrome (HRS). Periodic surveillance of renal function is helpful in patients with severe liver disease to detect
HRS early and to help correct reversible contributing factors. Once established, HRS responds relatively poorly to medical management, although recent advances have brought hope for an improved prognosis. In this article the diagnosis, pathophysiology, and management of HRS are discussed in detail, with an emphasis on recent diagnostic and therapeutic advances.

Management of Chronic Liver Failure Until Liver Transplantation 839
Gaurav Arora and Emmet B. Keeffe

Chronic liver failure is an important cause of morbidity and mortality and is the long-term consequence of many chronic liver diseases. In addition to determining the specific cause of the chronic liver disease, which may be amenable to targeted therapy, it is important to treat the sequelae of chronic liver failure effectively to improve quality of life, to prolong survival, and to provide a bridge to liver transplantation. Once a patient who has chronic liver failure develops hepatic decompensation, liver transplantation is the definitive treatment for those who qualify. Management of chronic liver failure is the focus of this article.

Liver Transplantation: Indications, Pretransplant Evaluation, Surgery, and Posttransplant Complications 861
Alan Koffron and Julie Stein

Liver transplantation is the therapeutic option of choice for acute and chronic end-stage liver disease. The indications and contraindications to liver transplantation have become established, as has the operative and postoperative management. This article provides a practical clinical approach to the evaluation and management of patients with acute and chronic liver failure, with particular emphasis on liver transplant recipient selection, clinical management, and complications. The goal is to provide helpful guidelines to caregivers involved in the multidisciplinary care of these complex patients.

Pancreatic and Biliary Diseases

Acute Pancreatitis: Etiology, Clinical Presentation, Diagnosis, and Therapy 889
Mitchell S. Cappell

Acute pancreatitis is a relatively common disease that affects about 300,000 patients per annum in America with a mortality of about 7%. About 75% of pancreatitis is caused by gallstones or alcohol. Other important causes include hypertriglyceridemia, medication toxicity, trauma from endoscopic retrograde cholangiopancreatography, hypercalcemia, abdominal trauma, various infections,
autoimmune, ischemia, and hereditary causes. In about 15% of cases the cause remains unknown after thorough investigation. This article discusses the causes, diagnosis, imaging findings, therapy, and complications of acute pancreatitis.

**Choledocholithiasis, Ascending Cholangitis, and Gallstone Pancreatitis**  
Sriroon Attasaranya, Evan L. Fogel, and Glen A. Lehman  
Gallstone disease is encountered commonly in clinical practice. The diagnosis of biliary stones has become less problematic with current, less-invasive imaging methods. The relatively invasive endoscopic techniques should be reserved for therapy and not used for diagnosis. Acute cholangitis and gallstone pancreatitis are two major complications that require prompt recognition and timely intervention to limit morbidity and prevent mortality or recurrence. Appropriate noninvasive diagnostic studies, adequate monitoring/supportive care, and proper patient selection for invasive therapeutic procedures are elements of good clinical practice.

**Minimally Invasive and Standard Surgical Therapy for Complications of Pancreatitis and for Benign Tumors of the Pancreas and Duodenal Papilla**  
Robert P. Jury and Nabil Tariq  
The treatment of severe pancreatitis and its complications is rapidly evolving because of increasing clinical application of effective, minimally invasive techniques. With ongoing innovations in therapeutic endoscopy, image-guided percutaneous techniques, and minimally invasive surgery, the long-standing traditional management algorithms have recently changed. A multidisciplinary approach is necessary for the treatment of complicated inflammatory diseases of the pancreas and benign periampullary tumors. Surgeons, gastroenterologists, and therapeutic radiologists combine expertise as members of a team to offer their patients improved outcomes and faster recovery.

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