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Evaluation of Abnormal Liver Tests 1
Tinsay A. Woreta and Saleh A. Alqahtani

Serum biochemical tests play an important role in the diagnosis and management of acute and chronic liver disease. Their routine use has led to the increased detection of liver enzyme abnormalities in otherwise asymptomatic patients. These tests consist of markers of hepatocellular injury, tests of liver metabolism, and tests of liver synthetic function. Liver injury can be characterized as primarily hepatocellular versus cholestatic based on the degree of elevation of aminotransferases compared with alkaline phosphatase. A comprehensive history, physical examination, and assessment of pattern of liver injury with additional directed laboratory testing establish the cause of hepatobiliary disease in most cases.

Removal Notice to “An Overview of Emerging Therapies for the Treatment of Chronic Hepatitis C” R1
Jawad A. Ilyas and John M. Vierling

Chronic Hepatitis B Virus Infection 39
Brian J. McMahon

Over 400,000 people worldwide are chronically infected with hepatitis B virus (HBV), and are at increased risk of developing hepatocellular carcinoma (HCC) and cirrhosis. HBV infected persons need regular lifelong follow-up. Candidates for antiviral therapy include patients with moderate-to-severe liver disease as determined by elevated alanine aminotransferase and/or liver biopsy and elevated HBV DNA levels above 2000 IU/mL, per evidenced-based guidelines. Pegylated interferon, tenofovir and entecavir are the first line drugs of choice for those needing treatment. All patients undergoing cancer chemotherapy or immunosuppressive therapy should be screened for hepatitis B surface antigen (HBsAg) and given HBV antiviral prophylaxis if positive.

Review of Treatment Options for Nonalcoholic Fatty Liver Disease 55
Richele L. Corrado, Dawn M. Torres, and Stephen A. Harrison

Nonalcoholic fatty liver disease (NAFLD) remains the most common chronic liver disease in the western world and its prevalence is rising
elsewhere. Among patients with NAFLD, those with nonalcoholic steatohepatitis (NASH) represent a large potential public health concern with risk for development of cirrhosis and hepatocellular carcinoma. The ability to diagnose and treat NAFLD and NASH has improved and continues to improve as understanding of the pathogenesis of this disease develops. This article highlights the key features of NAFLD and NASH, as well as the available and future promising treatment options.

Cholestatic Liver Disease
Andrea A. Gossard and Jayant A. Talwalkar

Cholestatic liver disease may involve both extrahepatic and intrahepatic bile ducts, or may be limited to one or the other. Cholestasis may be due primary bile duct disease or secondary causes such as stones or tumors. Care of the patient with cholestasis depends on identifying the probable cause, initiating appropriate treatment or intervention, and the recognition and management of potential complications.

Metal Storage Disorders: Wilson Disease and Hemochromatosis
Pushpjeet Kanwar and Kris V. Kowdley

Hereditary hemochromatosis and Wilson disease are autosomal recessive storage disorders of iron and copper overload, respectively. These metals are involved in multiple redox reactions, and their abnormal accumulation can cause significant injury in the liver and other organs. Over the last few decades clinicians have developed a much better understanding of these metals and their mechanism of action. Moreover, sophisticated molecular genetic testing techniques that make diagnostic testing less invasive are now available. This article updates and discusses the pathogenesis, diagnosis, and management of these metal storage disorders.

Hepatocellular Carcinoma and Other Liver Lesions
Reena Salgia and Amit G. Singal

Patients with cirrhosis are at greatest risk for development of hepatocellular carcinoma (HCC) and should undergo semiannual surveillance using ultrasound, with or without alpha fetoprotein. Patients with positive surveillance testing should undergo contrast-enhanced MRI or 4-phase CT for diagnostic evaluation. There are therapeutic options for most patients with any tumor stage; however, treatment decisions must be individualized after accounting for degree of liver dysfunction and patient performance status. A multidisciplinary approach to care is recommended for optimal communication and treatment delivery. The aim of this review is to provide an up-to-date summary of the diagnosis and management of HCC.

Management of End-stage Liver Disease
Iris W. Liou

Major complications of cirrhosis include the development of ascites, spontaneous bacterial peritonitis, hepatorenal syndrome, variceal hemorrhage, hepatic encephalopathy, and hepatocellular carcinoma. Careful evaluation and management of ascites and varices with judicious use of prophylactic
therapy can improve survival. Diagnosis of hepatic encephalopathy can lead to appropriate intervention without protein restriction. Patients should undergo hepatocellular carcinoma surveillance routinely every 6 months. The development of any decompensating event should prompt referral to a liver transplant center.

When to Consider Liver Transplant During the Management of Chronic Liver Disease

Rena K. Fox

With rising rates of end-stage liver disease and hepatocellular carcinoma, there is a growing demand for liver transplantation. The decision to allocate a liver to a patient is an extensive process in a transplant center, but the timing of initial referral for transplant evaluation will commonly be the responsibility of the primary care physician. This article discusses the indications and contraindications for liver transplantation. The criteria to determine timing of transplant referral are reviewed, and integration of these criteria into long-term management of patients with cirrhosis is emphasized.