TABLE 367e-5 LIPID STORAGES DISEASES

Gaucher's
Niemann-Pick
Abetalipoproteinemia
Tangier
Fabry's
Types I and IV hyperlipoproteinemia

include abetalipoproteinemia, Tangier disease, Fabry's disease, and types I and V hyperlipoproteinemia (Table 367e–5). Hepatomegaly is present due to increased fat deposition, and increased glycogen is found in the liver.

Porphyrias The porphyrias are a group of metabolic disorders in which there are defects in the biosynthesis of heme necessary for incorporation into numerous hemoproteins such as hemoglobin, myoglobin, catalase, and the cytochromes (Chap. 430). Porphyrias can present as either acute or chronic diseases, with the acute disorder causing recurring bouts of abdominal pain, and the chronic disorders characterized by painful skin lesions. Porphyria cutanea tarda (PCT) is the most commonly encountered porphyria. Patients present with characteristic vesicular lesions on sun-exposed areas of the skin, principally the dorsum of the hands, the tips of the ears, or the cheeks. About 40% of patients with PCT have mutations in the gene for hemochromatosis (*HFE*), and ~50% have hepatitis C; thus, iron studies and *HFE* mutation analysis as well as hepatitis C testing should be considered in all patients who present with PCT. PCT is also associated with excess alcohol use and some medications, most notably estrogens.

TREATMENT PORPHYRIAS

The mainstay of treatment of PCT is iron reduction by therapeutic phlebotomy, which is successful in reversing the skin lesions in the majority of patients. If hepatitis C is present, this should be treated as well. Acute intermittent porphyria presents with abdominal pain, with the diagnosis made by avoidance of certain precipitating factors such as starvation or certain diets. Intravenous heme as hematin has been used for treatment.

INFILTRATIVE DISORDERS

Amyloidosis Amyloidosis is a metabolic storage disease that results from deposition of insoluble proteins that are aberrantly folded and assembled and then deposited in a variety of tissues (Chap. 136). Amyloidosis is divided into two types, primary and secondary, based on the broad concepts of association with myeloma (primary) or chronic inflammatory illnesses (secondary). The disease is generally considered rare, although, in certain disease states or in certain populations, it can be more common. For example, when associated with familial Mediterranean fever, it is seen in high frequency in Sephardic Jews and Armenians living in Armenia and less frequently in Ashkenazi Jews, Turks, and Arabs. Amyloidosis frequently affects patients suffering from tuberculosis and leprosy and can be seen in upwards of 10–15% of patients with ankylosing spondylitis, rheumatoid arthritis, or Crohn's disease. In one surgical pathology series, amyloid was found in <1% of cases. The liver is commonly involved in cases of systemic amyloidosis, but it is frequently not clinically apparent and only documented at autopsy. Pathologic findings in the liver include positive staining with the Congo red histochemical stain where there is an apple-green birefringence noted under polarizing light.

Granulomas Granulomas are frequently found in the liver when patients are being evaluated for cholestatic liver enzyme abnormalities. Granulomas can be seen in primary biliary cirrhosis, but there are other characteristic clinical (e.g., pruritus, fatigue) and laboratory findings (cholestatic liver tests, antimitochondrial antibody) that allow for a definitive diagnosis of that disorder. Granulomatous infiltration can also be seen as the principal hepatic manifestation of sarcoidosis, and this is the most common presentation of hepatic granulomas (Chap. 390). The vast majority of these patients do not require any specific treatment other than what would normally be used for treatment of their sarcoidosis. A small subset, however, can develop a particularly bothersome desmoplastic reaction with a significant increase in fibrosis, which can progress to cirrhosis and liver failure. These patients may require treatment with immunosuppressive therapy and may require liver transplantation. In patients who have granulomas in the liver not associated with sarcoidosis, treatment is rarely needed.

Diagnosis requires liver biopsy, and it is important to establish a diagnosis so that a cause for the elevated liver enzymes is carefully identified. Some medications can cause granulomatous infiltration of the liver, the most notable of which is allopurinol.

Lymphoma Involvement of the liver with lymphoma can sometimes be with bulky mass lesions but can also be as a difficult-to-diagnose infiltrative disorder that does not show any characteristic findings on abdominal imaging studies (Chap. 134). Patients may present with severe liver disease, jaundice, hypoalbuminemia, mild to moderately elevated aminotransferases, and an elevated alkaline phosphatase.

A liver biopsy is required for diagnosis and should be considered when routine blood testing does not lead to a diagnosis of the liver dysfunction.