Idiopathic Neonatal Hepatitis

Definition

Idiopathic neonatal cholestasis is a term used when a cause for neonatal cholestasis cannot be found despite extensive evaluations. Cholestasis affects 1 in every 2,500 – 5,000 infants (1). In the 1970’s, “INH” was responsible for up to 65% of cases of neonatal cholestasis. As more genetic causes were identified, this figure decreased to 25 – 30% of cases in the 1980’s (2). Currently only about 15% of neonates with cholestasis remain undiagnosed and hence have been labeled as having “INH” (3).

Etiology

By definition, the cause of idiopathic neonatal cholestasis is unknown (4).

Pathogenesis

Wang et al (4) have postulated that some infants with idiopathic neonatal cholestasis may have reduced antioxidant protection, decreased bile-acid independent bile flow and/or defects in the hepatocellular canalicular adenosine triphosphate (ATP) dependent transport system involved in bile formation (5). In other infants, spontaneously resolving forms of neonatal cholestasis could have resulted from perinatal distress leading to hepatic hypoxia or ischemia (6). Since idiopathic neonatal cholestasis is likely due to diverse etiologies, our knowledge of the precise pathogenetic mechanisms is evolving.

Clinical Features

Infants with idiopathic neonatal cholestasis present with protracted jaundice and may or may not have other symptoms such as failure to thrive and acholic stools.

Diagnosis

There are many causes of infantile cholestasis (3). Diagnostic evaluation is guided by the clinical situation. Typically biliary atresia, choledochal cyst, alpha-1-antitrypsin deficiency, Alagille syndrome, panhypopituitarism, congenital infection, and cystic fibrosis are excluded. If a comprehensive workup fails to reveal a specific cause, the infants are categorized as having idiopathic neonatal cholestasis. A liver biopsy may show giant cell hepatitis but this finding can be seen in a number of disorders with specific etiologies such as neonatal panhypopituitarism. Electron microscopy and immunohistochemistry can sometimes direct further metabolic and genetic studies, so consultation with pathologists in advance of the biopsy can assure proper handling of the specimen. Unlike the other specific causes of neonatal cholestasis there is no universally accepted list of diagnostic tests needed to establish a diagnosis of INH; it is by definition, a
diagnosis of exclusion. Likewise there are no universally accepted histopathologic features associated with a diagnosis of \textit{INH}. 

**Genetics**

Since the causes are unknown, there is no genetic test for this condition.

**Treatment**

The treatment is supportive. This would include alimentation with an elemental formula if breast feeding does not promote growth and supplementation with fat soluble vitamins. Many experts \cite{3} would also utilize ursodeoxycholic acid to promote bile flow and attempt to reduce jaundice.

**Prognosis**

The majority of infants will normalize bilirubin by 3 – 4 months of age although some remain jaundiced for much longer \cite{4}. Normalization of AST usually happens after normalization of bilirubin – more like 6 – 7 months of age although some infants exhibit elevated AST for years after diagnosis. The ultimate prognostic information likely relates to the underlying cause of cholestasis.

**References**


