Making a case for hepatitis A vaccination in glucose-6 phosphate dehydrogenase deficient subjects

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Making a case for hepatitis A vaccination in glucose-6 phosphate dehydrogenase deficient subjects

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Abstract

G6PD deficiency is the most common inherited enzyme deficiency worldwide. Acute viral hepatitis A is widely prevalent in India. A chance association of these two relatively common conditions is therefore to be expected and has been reported from India and from other parts of the world.

Of 481 hepatobiliary referrals over a period of 39 months seen at our centre fulminant hepatic failure (FHF) was present in 26 cases. Hepatitis A was etiologic agent in 12 cases and 3 children had both hepatitis A and hepatitis E infection. Nine patients with hepatitis A also had G6PD deficiency, out of which 5 developed FHF (55.6%). All of them were anemic and their G6PD levels were less than 100 mu / 109 RBC. The mean peak serum bilirubin was 56.8 mg/dl (range 24.7-87 mg/dl) and rate of rise was more than 10mg/dl in 24 hours. Three patients were ventilated electively because of worsening encephalopathy. Four developed renal dysfunction of which two required hemodialysis. One child underwent a living related liver transplant. There were four children with concomitant hepatitis A and G6PD deficiency who did not develop FHF. Mean serum bilirubin in this group was 28.1 mg/dl (range 18-42 mg/dl). Although the rise was not as much as in the patients who developed FHF, it was higher than that found in patients with hepatitis A infection 16 mg/dl (range 6 – 20 mg/dl) without an associated G6PD deficiency.

HAV infection is considered to be a mild disease in majority of cases. This virus, however, in children with G6PD deficiency can cause hemolytic anemia, severe hyperbilirubinemia, renal failure and fulminant hepatic failure. Given the serious manifestations, there is need for hospitalization and advanced medical intervention (dialysis, intensive care management or even liver transplantation). So, we believe that there is a case for vaccinating children with G6PD deficiency against hepatitis A virus infection to prevent the occurrence of severe hepatitis and fulminant hepatic failure.

References:

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