

ABSTRACT

Epidemiology of Indirect Hyperbilirubinemia in Neonates admitted to the Bustamante Hospital for Children and their outcome in the First Year of Life.

Dr. Yanique Ashena Brown

Neonatal jaundice (hyperbilirubinemia) is a common cause for presentation to the newborn nursery worldwide. The long term outcome of severe hyperbilirubinemia is chronic bilirubin encephalopathy which is associated with significant morbidity and mortality. This study describes the epidemiology of the cases of significant indirect hyperbilirubinemia requiring medical intervention in neonates admitted to the Bustamante Hospital for Children (BHC) nursery and examines their outcome in the first year of life. This was a retrospective study of all neonates with indirect hyperbilirubinemia who were admitted to BHC special care nursery between the period January 1, 2003 to December 31, 2007. One hundred and sixteen neonates satisfied the criteria for inclusion in this study. Sixty-two percent of population studied were males. The majority of the patients were delivered at term. The common causes were: ABO incompatibility (30%), culture positive sepsis (23%), prematurity (19%), and culture negative sepsis (18%). Rhesus incompatibility accounted for only 9% of cases. Twenty-seven percent of cases were considered to be idiopathic in origin. The modal day of admission was day six of life. The mean total serum bilirubin (TSB) was $383.3 \pm 111.9 \mu\text{mol/l}$ and the mean maximum TSB documented was $417.6 \pm 110.8 \mu\text{mol/l}$. Twenty percent had features of bilirubin encephalopathy on admission. Nine cases did not survive and kernicterus was the common finding at post-mortem. Nine percent of surviving neonates had abnormal neurological examination at discharge. Delayed motor and language milestones were documented in seven of thirty five cases that were followed up. Glucose-6-phosphate dehydrogenase (G6PD) deficient neonates had a significantly higher mean TSB ($450.2 \pm 125.6 \mu\text{mol/l}$) on admission than those with a normal G6PD test ($p=0.017$). The mean maximum TSB and the mean TSB on admission were significantly greater in patients with bilirubin encephalopathy ($p=0.000$). Addressing the preventable causes of significant hyperbilirubinemia such as those cases due to Rhesus incompatibility, G6PD deficient neonates exposed to naphthalene (camphor) ball; and close follow up of those managed for hyperbilirubinemia are all paramount in improving outcome of these neonates.

Key Words: epidemiology, hyperbilirubinemia, outcome.

, but not least, I thank Jehovah God for giving me the motivation to complete this research.