Introduction

Neonatal hyperbilirubinemia is a yellowish discoloration of skin and whites of the eyes. It is quite common affecting nearly 70% of term and 80% of preterm neonates during the first week of life. Luckily; majority of times it is a physiological jaundice resulting from increased bilirubin load due to breakdown of red blood corpuscles, defective uptake, conjugation or excretion by immature liver and increased enterohepatic circulation. While pathological jaundice resulting from increased production or limited elimination of bilirubin during the initial days of neonatal period. This occurs in nearly 5 to 25% of neonates. The common causes include sepsis, G6PD deficiency, blood group incompatibilities and the majority being idiopathic; the other less common causes include polycythemia and extravasations of blood ***(Maisels , 2005: B)***

Almost every newborn has a total serum bilirubin level more than 1mg/dl, the upper limit of normal for an adult and there are 2 of every 3 newborn are jaundiced to clinician's eyes, this type of transient hyperbilirubinemia has been called physiological jaundice but when TSB levels exceed a certain value, the infant is often described as having pathological jaundice. Jaundice is safe for most term infants but high levels of bilirubin can cause brain damage in a susceptible newborn. So effective screening and surveillance are essential to ensure that infants with sever hyperebilirubinemia are not missed ***(Maisels, 2005: B).***

An increasing number of newborn infants are discharged from hospital within 48 hours after birth, so the detection of neonatal jaundice before discharge becomes less often than it was in the past. Every newborn should be assessed for the risks of developing severe

hyperbilirubinemia to avoid its hazard ***(Carbonell et al., 2001)***. The AAP recommends 2 clinical options used individually or in combination for the systematic assessment of risk: Predischarge measurement of the bilirubin level using TCB or TSB and/or assessment of clinical risk factors ***(Stevenson et al., 2001).***

There are many risk factors predisposing the incidence of neonatal jaundice and they are classified into major risk factors as blood group incompatibility, gestational age 35-36 weeks, previous sibling received phototherapy, cephalohematoma and predischarge TCB or TSB in the high risk zone. Minor risk factors as predischarge TSB or TCB level in the high intermediate-risk zone, gestational age 37-38 weeks, previous sibling with jaundice, macrosomic infant of a diabetic mother and male infant. While there are factors associated with decreased the risk of significant jaundice as TCB or TSB in the low risk zone, gestational age >41 weeks, exclusive breastfeeding and black races ***(Moyer et al., 2000).***

TCB measurements have demonstrated a linear correlation with TSB and several studies have recommended their use as a screening device to detect the neonatal hyperbilirubinemia and thus decrease the need for frequent blood sampling in the well term infant. In addition, both the BiliChek and Konica Minolta JM-103 have been trialed and had good correlations with total serum bilirubin ***(Maisels et al., 2004: B).***