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# Frequency of hyperbilirubinemia at 72 hours of life in term newborns with a high-intermediate risk serum bilirubin level at 48 hours of life, at a tertiary care hospital in karachi

Neonatal jaundice is common in newborns affecting over half (50-60%) of all babies in the first week of life. Severe jaundice can result into significant morbidity in the form of Kernicterus. Early screening along with, quick treatment of neonatal jaundice helps to reduce the risk of developing severe hyperbilirubinemia, hence Kernicterus. There is strong evidence that screening newborns with hour-specific serum bilirubin level measurements can help in identifying, risk of developing hyperbilirubinemia in newborns. In a study conducted at Pennsylvania Hospital, 12.5% of the study population (356/2840) had Total Serum Bilirubin (TSB) values in the high-intermediate risk zone (between 75th and 95th percentile) at 18 to 72 hours; of these, 12.9% (46/356) progressed into high risk zone within 24-48 hours post-discharge. There are studies available from developed countries regarding hyperbilirubinemia and newborns with underlying risk factors for hyperbilirubinemia; however, there is insufficient data from developing countries. A study done at National Institute of Child Health Karachi, which included all newborns admitted in Neonatal ICU, showed the incidence of the neonatal hyperbilirubinemia as 13.15% but there is no data available for significant hyperbilirubinemia in term healthy newborns. In 2004, American Academy of Pediatrics (AAP) published guideline for the management of hyperbilirubinemia which recommends that every newborn be assessed for the risk of developing severe hyperbilirubinemia, by using pre-discharge TSB or Transcutaneous Bilirubin (TcB) measurements and/or assessment of clinical risk factors before discharge. In contrast, a recommendation statement from the US Preventive Services Task Force (USPSTF), concludes that evidence is insufficient to make that recommendation. This creates ambiguity whether to screen newborns for hyperbilirubinemia or not. Newborns are usually screened for hyperbilirubinemia at 48 hours of life at some private sector hospitals in city. Those falling within high-risk zone and requiring intervention are usually admitted and treated accordingly. While newborns falling within high-intermediate risk zone or with borderline TSB level are usually followed clinically and TSB repeated later; but we do not know how many out of those require readmission or intervention. Based on a previous study, 12.9% of newborns with high-intermediate risk zone TSB level between 18 to 72 hours of life progressed to high risk zone, resulting in readmission for the treatment of neonatal hyperbilirubinemia. This study will help the physician to anticipate and manage newborns with high-intermediate zone TSB and will also help to established specific management guideline for these newborns to prevent bilirubin induced neurological damage. All term newborns of either gender (fulfilling inclusion criteria) with TSB level at high-intermediate risk zone at 48 hours of life, born at Aga Khan University Hospital were included in this study. Their demographics were recorded in structured proforma. Results were collected and analyzed by SPSS software, version 20.0. A total of 173 newborns were enrolled. There was a female predilection 56.6% (n=98). One-third of the newborns having TSB in high-intermediate risk zone at 48 hours of life progressed to level of significant hyperbilirubinemia requiring treatment (31.2%; n=54). Those who required phototherapy had the mean rate of rise of 5.00 mg/dL/day (0.20 mg/dL/hr). For future implementations we recommended that early recognition, monitoring and early treatment of neonatal hyperbilirubinemia may help in reducing morbidity. Neonates with high-intermediate risk serum bilirubin level should be followed at 24 hours intervel for assessment and possible treatment.

**Biography:** Taha Jamal is a pediatrician by profession and works with one of the state of the art hospital in Karachi, Pakistan. He holds a M.B.B.S. degree from Dow Unisersity of Health Sciences and completed his post-graduate pediatrics residency training from the Aga Khan University Hospital Karachi. He has presented his research works at conferences in London and Washington DC. He is currently instructed for Pediatrics at the Aga Khan University Hospital Karachi and passionate about working with neonates.

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