

Effectiveness of a Pre-discharge Bilirubin Screening in High-risk Neonates-Is the Evidence Robust Enough?

I would like to commend the authors on their prospective study looking at the incidence and predictors of significant jaundice in late preterm infants [1]. Pre discharge transcutaneous bilirubin on its own might help identify significant hyperbilirubinemia but there no randomized trials demonstrating a decrease in hospital readmission or bilirubin encephalopathy with its use. There are two studies looking at this. Bhutani, *et al.* [2] highlight the importance of the universal approach not just measurement of TcB in their study. In the systems-based approach, all babies had pre-discharge bilirubin estimation (serum bilirubin or transcutaneous bilirubin), and follow-up care for jaundice was provided either at the hospital (more than 85% of cases) or at home within 24–48 hours of discharge. Other components of the approach included lactation support, provision of information regarding jaundice to parents, and close follow-up of jaundiced babies based on their hour-specific bilirubin levels [2]. Eggert, *et al.* [3] evaluated the effectiveness of a bilirubin screening programme in a private healthcare organisation involving 18 hospitals. The authors concluded that a universal screening program coupled with evaluation of bilirubin using a percentile-based nomogram can lead to significant reduction in the incidence of hyperbilirubinemia and hospital readmissions for phototherapy. These studies are not randomized control trials. There are no studies which contemporaneously evaluate an approach of bilirubin measurement for high risk newborns when clinically jaundiced versus universal pre discharge screening of all high risk neonates irrespective of whether they are clinically jaundiced or not.

The predictive accuracy of clinical risk factors, pre-discharge bilirubin levels expressed as risk zones, and a combination of pre-discharge bilirubin and additional risk factors have been evaluated prospectively elsewhere. Keren, *et al.* [4] demonstrate that the predictive accuracy of pre-discharge bilirubin risk zone assignment was not significantly different from that of multiple risk factors. After combining clinical risk factors with pre-discharge bilirubin risk zone assignment, the only factors that remained statistically significant were gestational age and percentage weight loss per day. This combination model showed improved predictive accuracy when compared

with the pre-discharge bilirubin alone.

National Recommendations in the United Kingdom feel there is a lack of high-quality evidence to show that universal pre-discharge bilirubin measurement reduces the frequency of hospital readmission, exchange transfusions and bilirubin encephalopathy. The UK National Institute for Clinical Excellence (NICE) guidelines on neonatal jaundice recommends neonates with a gestational age under 38 weeks, a previous sibling with neonatal jaundice requiring phototherapy, and mother's intention to breastfeed exclusively receive an additional visual inspection by a healthcare professional within 48 hours of birth if discharged early without clinical jaundice [5].

In the study by Lavanya, *et al.* [1] pre discharge TcB as a predictor variable was similar or sometimes even better than clinical risk factors alone for prediction of significant jaundice. The measured bilirubin was compared with the hour specific total serum bilirubin (TSB) nomogram of AAP guidelines. A major limitation of the hour-specific bilirubin nomogram was that babies with conditions such as ABO incompatibility were excluded. The nomogram may not, therefore, be applicable to other populations of newborn infants. Would it be better to devise a local nomogram for Indian conditions to better evaluate the question from a sub continental perspective?

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