



# Letter to “Comparison of Transcutaneous Bilirubin Measurement with Total Serum Bilirubin Levels in Term Neonates with Hyperbilirubinemia: A Descriptive-Analytical Study”

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## Dear Editor,

I read an interesting study by Jalalodini and Ghaljaei published in the 2019 November issue of the Journal of Comprehensive Pediatrics (1). The authors compared the accuracy of transcutaneous bilirubin (TCB) versus total serum bilirubin (TSB) before and after phototherapy in a cohort of Iranian neonates. They found a strong correlation between TCB and TSB in neonates weighing 3,001 to 4,000 g before phototherapy ( $r = 0.74$ ,  $P < 0.001$ ). They also found a weak correlation between TCB and TSB in these neonates after phototherapy ( $r = 0.40$ ,  $P > 0.05$ ) and the cutoff value of bilirubin was 6 - 8 mg/dL. They reported the sensitivity and specificity of 100% and 90%, respectively, for bilirubin at the level of 6.7 mg/dL (1). They concluded that the TCB technique could be a reliable alternative to TSB, particularly in the induction of phototherapy with the bilirubin levels of 6 - 8 mg/dL. However, it was not a device with high accuracy after phototherapy (1). Apart from a few study limitations addressed by the authors, I assume that the following four points are relevant.

First, the study was done in a single center in Iran. Therefore, the results could not be generalized to various centers across the country. Large scale studies recruiting many centers are advocated to verify the already mentioned findings and conclusions.

Second, the authors mentioned that TCB readings were done using the BiliChek device (APEL, Japan) three times in the middle of the neonate's forehead (1). It is explicit that there are many different TCB meters in clinical settings to estimate TCB and different agreements of TCB measurement with each other and TSB have been noticed (2, 3).

Third, Iran is a multi-ethnic nation with various ethnic groups including Persians, Lurs, Kurds, Arabs, Baluchs, Turkmens, and Turkic tribes. The authors did not mention the ethnic standards of the studied cohort. I assume that the ethnic diversity could change the accuracy of the study results as it has been noted that the ethnicity could affect TCB bias when measurements were carried out on the forehead but not when they were carried out on the sternum (4).

Fourth, despite the abovementioned study limitations, the recent construction of TCB nomogram during the early neonatal period for Iranian neonates (5) facilitates the utilization of the TCB procedure in clinical neonatal fields and research institutions.

## Footnotes

**Authors' Contribution:** Mahmood Dhahir Al-Mendalawi did Concept, design, literature search, manuscript preparation, and editing.

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