CORRELATION OF TRANSCUTANEOUS BILIRUBIN LEVEL AND SERUM BILIRUBIN LEVEL AMONG JAUNDICED NEONATES IN A TERTIARY HOSPITAL IN DAVAO CITY.

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Objective: Determine the correlation between transcutaneous and serum bilirubin level among jaundiced neonates in a tertiary hospital in Davao City.

Design: Retrospective cross-sectional design.

Setting: Two-month study conducted in a private tertiary hospital in Davao City

Participants: Medical charts of 106 neonates born from September 2017 to December 2019.

Main Outcome Measures: Fisher's Exact Test and Pearson correlation was used to analyze the relationship of transcutaneous bilirubin (TcB) and TSB. Wilson/Brown method was used to test for sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV). Receiver Operator Curve (ROC) analysis was performed to determine the Area Under the Curve (AUC) at different cut-off points.

Results: Neonates were equally represented in both sexes. All were term and appropriate for gestational age. TcB has a sensitivity of 100%, specificity of 32.5%, NPV of 100%, and PPV of 70.97%. There was a significant correlation between TcB and TSB (p=<0.001, *r*=0.88). At >95th hour of life TcB underestimated TSB. The cut-off values were as follows: 7.65mg/dL at <24th hour (AUC=1.00, 95% CI=1.00-1.00, p>0.05) with sensitivity of 0.857 and 1-specificity of 0.00; 11.95 mg/dL at 24 to 47th hour (AUC=.784, 95% CI=.646-.922, p=0.007) with sensitivity of 0.656 and 1-specificity of 0.200; 13.75mg/dL at 48-71st hour (AUC=.898, 95% CI=.783-1.00, p<0.000) with sensitivity of 0.867 and 1-specificity of 0.125; 14.55mg/dL at 72 to 95th hour (AUC=.986, 95% CI=.943-1.00, p=0.001) with sensitivity of 0.875 and 1-specificity of 0.111; 15.90mg/dL at 96-119th hour (AUC=1.00, 95% CI= 1.00-1.00, p=0.050) with sensitivity of 1.00 and 1-specificity of 0.00.

Conclusions: Transcutaneous bilirubinometer can be used as a screening tool for hyperbilirubinemia since it correlates well with TSB. However, it is recommended to perform a serum bilirubin determination when the transcutaneous bilirubin level reaches ≥15mg/dL.

Keywords: *transcutaneous bilirubin (TcB), total serum bilirubin (TSB), significant hyperbilirubinemia*