ABSTRACT

BiliScore: CLINICAL PREDICTIVE SCORING USING PREDISCHARGE TRANSCUTANEOUS BILIRUBIN AND CLINICAL FACTORS AS SCREENING TOOL FOR SEVERE HYPERBILIRUBINEMIA IN LATE PRETERM AND TERM INFANTS

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Background: The early identification and appropriate management of infants who are at risk for hyperbilirubinemia is an important aspect of neonatal care.

Objective: This study aims to create a clinical prediction tool using the predischarge transcutaneous bilirubin (TcB) values and clinical risk in predicting subsequent severe hyperbilirubinemia within the first week of life in late preterm and term Filipino infants born at St. Luke's Medical Center – Quezon City.

Methods. This is a retrospective case control study conducted using medical records 71 hyperbilirubinemia cases and 142 controls among healthy late preterm and term Filipino newborn infants from November 2019 to July 2021. The routinely measured transcutaneous values at ≥ 24^{th} hour of life or prior to discharge and all predischarge clinical characteristics were collected. Multivariable logistic regression was used to find a clinical prediction model to predict subsequent severe hyperbilirubinemia within 7 days after birth.

Results. The best clinical predictors for subsequent severe hyperbilirubinemia were: hour of life the transcutaneous bilirubin was determined, transcutaneous bilirubin value in mg/dL, birthweight in grams, sex and mother's gravidity. The risk score derived from these, BiliScore, predicted subsequent severe hyperbilirubinemia with a good ROC Curve (AUC: 0.905 [95% CI: 0.861–0.948; P-value <0.001) in four risk group, strong, moderate, mild and low.

Conclusions. This study was able to create a clinical prediction scoring tool using the predischarge TcB values and clinical risk factors in predicting subsequent severe hyperbilirubinemia within the first week of life in late preterm and term Filipino infants born at St. Luke's Medical Center – Quezon City. This score classified late preterm and term newborn infants into 4 distinct risk levels and may be useful to identify high-risk infants for outpatient follow-up of subsequent severe hyperbilirubinemia.

Keywords: *BiliScore, Severe hyperbilirubinemia, Transcutaneous bilirubin, Predischarge screening, Scoring tool*