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REVIEWER'S REPORT

Manuscript No.: IJAR- 58501

Title: Umbilical Cord Serum Albumin as a Predictor of Significant Neonatal Hyperbilirubinemia in Late Preterm and Term Neonates: A Cross-Sectional Study,

Recommendation:
Accept after minor revision

Rating	Excel.	Good	Fair	Poor
Originality		✔		
Techn. Quality			✔	
Clarity			✔	
Significance	✔			

Reviewer's ID: Bilqees Hamza

Detailed Reviewer's Report

The manuscript evaluates whether umbilical cord serum albumin (CSA) levels measured at birth can predict the development of significant neonatal hyperbilirubinemia requiring phototherapy in late preterm (≥ 34 weeks) and term neonates. Conducting a hospital-based cross-sectional study of 95 newborns, the authors stratify cord serum albumin into three tiers ($\le 2.8 \text{ g/dL}$, $2.9\text{--}3.3 \text{ g/dL}$, and $\ge 3.4 \text{ g/dL}$) and track phototherapy outcomes over a 72–96 hour follow-up period.

The topic is clinically practical, particularly in resource-limited or high-volume obstetric settings where early postnatal discharge is common and early risk stratification for hyperbilirubinemia is crucial. The statistical findings demonstrate a clear inverse relationship between cord serum albumin levels and phototherapy requirements in both late preterm ($p = 0.0007$) and term ($p = 0.005$) neonates.

Despite the clear clinical premise, the draft exhibits several methodological ambiguities, data inconsistencies in tables, missing predictive accuracy metrics (such as ROC curve analysis), and minor typographical/formatting errors that must be resolved prior to publication.

Key Areas for Improvement

1. Methodological and Analytical Enhancements

- **Lack of Receiver Operating Characteristic (ROC) Analysis:** The manuscript establishes a statistical association using Chi-square tests. However, to evaluate cord serum albumin as a true "predictor" or screening tool, the authors should report sensitivity, specificity, positive predictive

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value (PPV), negative predictive value (NPV), and Area Under the ROC Curve (AUC) for the cut-off threshold of 2.8 g/dL.

- **Confounder Adjustment:** While univariate Chi-square tests were performed for birth weight, sex, and mode of delivery, a multivariable logistic regression model should be conducted to confirm whether low cord serum albumin remains an independent predictor when controlling for gestational age and birth weight.

2. Discrepancies and Inconsistencies in Data Presentation

- **Table 2 Formatting and Headers:** In Table 2 (lines 103–106), the column header row for "Variable / Phototherapy Yes / Phototherapy No / p value" is duplicated midway through the table above the "Gender" variable. This header duplicate should be removed to restore standard table structure.
- **Table 3 Data Alignment for Cord Serum Albumin:** In Table 3 (lines 107–110), the row for cord serum albumin $<2.8 \text{ g/dL}$ is written as <<2.8. Furthermore, the total counts for term neonates across the albumin sub-groups ($11 + 13 + 26 = 50$) match Table 1, but the inequality operator should be standardized to $\le 2.8 \text{ g/dL}$ to match the text and methods section.
- **Textual vs. Table Statistical Values:** In the text (line 167), the authors mention a safe discharge cutoff of "-3.4 g/dl". This typographical error (stray negative sign) should be corrected to $\ge 3.4 \text{ g/dL}$.

3. Literature Comparison and Synthesis

- **Clarification of Cited Literature:** In the Discussion (lines 150–164), the authors compare their percentages with previous literature (Mishra et al., Trivedi et al., Reshad et al.). The comparative narrative is informative, but references 2, 3, 5, 6, 8, 11, 12, and 13 cited in the discussion text show minor misalignments with the superscript numbering versus the end-reference list numbers (e.g., lines 49–50 cite references 2,3,4,6 in superscripts that do not fully map to the bibliography order). The bibliography numbering throughout the text must be thoroughly cross-checked and harmonized.

4. Formatting and Typography

- **Units and Mathematical Expressions:** Standardize spacing between numbers and units throughout the text (e.g., 2.8 g/dL rather than 2.8g/dl, 2 kg rather than 2kg).
- **Incomplete Sentence / Line Artifacts:** Ensure clean transitions in Section "INTRODUCTION" (lines 48–51) where trailing reference numbers and sentence fragments appear.

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Recommendation

Revision Required.

The study offers valuable local clinical data supporting cord serum albumin as an effective, inexpensive risk-stratification tool for neonatal hyperbilirubinemia. To make the paper publication-ready, the authors must carry out the following revisions:

1. **Incorporate Predictive Statistics:** Perform ROC curve analysis to calculate Sensitivity, Specificity, PPV, NPV, and AUC for cord serum albumin thresholds (particularly $\le 2.8 \text{ g/dL}$).
2. **Clean and Standardize Tables:** Remove duplicate column headers in Table 2, correct typographical errors (<<2.8 and -3.4) in Table 3 and the Discussion text, and verify that all row percentages sum accurately.
3. **Audit Citation and Reference Numbers:** Thoroughly align all numeric superscripts in the body text with the formal end-references list.
4. **Multivariable Analysis:** Perform a multivariate logistic regression to demonstrate independence from gestational age and birth weight.

Final Evaluation

Recommendation: Accept with Minor Revisions