

REVIEWER'S REPORT

Manuscript No.: IJAR- 51575

Date: 13/05/2025

Title: Umbilical Cord Coiling Index as a Marker of Maternal and Perinatal Outcome: A Retrospective Study

Recommendation:

- ✓ Accept as it is
 Accept after minor revision.....
 Accept after major revision
 Do not accept (*Reasons below*)

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

Reviewer Name: Dr. S. K. Nath

Date: 13/05/2025

Reviewer's Comment for Publication:

The study investigates the potential of the umbilical cord coiling index (UCI) as a marker for maternal and perinatal outcomes, finding that abnormal coiling—whether hypo- or hypercoiled—may be associated with adverse outcomes such as increased NICU admissions, abnormal fetal heart tracings, and lower APGAR scores. The research underscores the importance of UCI as a simple, non-invasive marker that could aid in risk stratification during pregnancy.

However, limitations such as a modest sample size, retrospective design, and incomplete methodological details suggest that further prospective studies with larger cohorts are necessary to validate these findings. Incorporating long-term follow-up and controlling for confounders would strengthen future research and potentially establish UCI as a standard parameter in obstetric assessments.

Reviewer's Comment / Report

Strengths:

- Comprehensive Data Analysis:** The study includes detailed statistical evaluations, such as mean, median, mode, standard deviation, and significance testing (p-values), indicating robust data analysis methods.
- Comparison with Multiple Studies:** The paper references several other studies (e.g., Bhojwani et al., Patil et al., Mustafa et al., Milani et al., Gupta et al., Chitra et al., Mittal et al.) across different parameters like NICU admissions, meconium-stained liquor, CTG findings, and APGAR scores. This comparative approach helps contextualize the findings.
- Focus on Both Maternal and Perinatal Outcomes:** The research considers diverse outcomes such as NICU admissions, meconium-stained liquor, fetal distress markers (like CTG changes), and APGAR scores, providing a holistic view of the implications of umbilical cord coiling.
- Clear Methodological Framework:** The study specifies ethical considerations, data collection methods, and statistical tools used, which adds to its credibility.

Weaknesses:

- Limited Sample Size and Scope:** Only 200 patients were included, which may limit the generalizability of the findings. Additionally, being retrospective, it could be prone to selection bias.
- Lack of Detailed Methodology Description:** The provided pages do not specify how the coiling index was measured, the criteria for categorizing coiling as hypocoiled or hypercoiled, or whether the observers were blinded, which are important for reproducibility.

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3. **Insufficient Discussion of Confounding Factors:** Factors such as maternal health, socioeconomic status, or obstetric history's impact on outcomes are not extensively discussed or controlled for, which could influence results.
4. **Absence of Long-term Outcomes:** The study focuses on immediate perinatal outcomes without exploring long-term neonatal health, which could provide more comprehensive insights.
5. **Limited Statistical Details:** While some p-values are mentioned, detailed statistical analyses (like regression analysis) to control for confounding variables are not evident from the provided pages.