



# Scoring Tools to Predict Neonatal Mortality: Where Do We Stand Today?

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Assessment of a sick neonate at birth, at the triage area in the health facility, and during admission is critical to assessing the severity of the illness, planning the management, and also prognosticating for the family. These scoring tools include the clinical risk index for babies (CRIB), the score for neonatal acute physiology (SNAP, SNAP-II), the extended sick neonatal score (ESNS), and the modified sick neonatal score (MSNS), etc. and have included data regarding birth weight, gestation, admission temperature, perfusion, arterial blood gas analysis, and blood sugar estimation [1–3]. These tools quantify the physiologic aspects of the illness and, therefore, can be used as predictors of mortality and increased morbidity.

Jayasheel et al. report, in this issue of the Journal, the evaluation of the modified extended sick neonate score (MESNS) to predict hospital mortality in children admitted to resource-poor settings in rural India [4]. The present study tested a scoring system that included 8 variables of ESNS (excluding mean BP) and 2 variables (birth weight and gestational age) from MSNS. The retrospective review of 521 neonates showed a sensitivity and specificity of 86.27% and 86.60%, respectively, for modified ESNS and 90.20% and 84.89%, respectively, for MSNS, in predicting mortality. The MESNS score has a practical importance in that all components are clinical and it does not include time consuming investigations like PaO<sub>2</sub>, blood pH, base deficit, etc. which may not be easily available at every newborn care facility. However, it is equally challenging to have an accurate assessment of gestation in resource-poor settings by dating ultrasonography, and it takes a minimum of 5 min to do modified Ballard scoring by an experienced person. The study, as the authors pointed out, is retrospective, has a small sample size, and is single hospital-based. It is important to know how much time it takes to evaluate 10 parameters.

Several authors compared different neonatal illness severity scores in predicting mortality [5]. However, it is also critical to have a tool that predicts treatment needs and outcomes and thereby assists both health care providers and researchers. All neonatal scoring tools have their own strengths and limitations. It is important to see the ease of administration and the available clinical environment and have a close monitoring system in place to review the clinical condition and follow the progress of the treatment.

The ideal scoring tools for the future should be able to quickly quantify severity, be easy to use, based on clinical parameters, preferably noninvasive ones, reproducible, and generalizable.

## Declarations

**Conflict of Interest** None.

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