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ASSESSMENT OF MAJOR AND MINOR HAEMORRHAGE IN A HIGH RISK NEONATAL POPULATION USING A VALIDATED STRUCTURED BLEEDING ASSESSMENT TOOL

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Background: Infants admitted to neonatal intensive care are at high risk of bleeding. Our objective was to develop and pilot a bleeding assessment tool (BAT) and validate its use in neonates admitted to intensive care

Methods: The BAT was developed, reviewed and modified from the WHO bleeding score by a team of neonatologists, haematologists and statisticians. It was used as a 14 day prospective daily record of bleeding to assess incidence of all bleeding in neonates admitted for high dependency/intensive care in 6 tertiary NICUs over 2-4 week admission period. Independent personnel performed duplicate assessmentsin order to standardise and validate the tool.

Results: 74 neonates were assessed for 648 days. Median birth weight:1725 (IQR 890-3380)g, median gestational age: 30 (IQR 26-38) weeks. 30/74 (41%) babies developed some form of bleeding. Incidence of bleeding (represented as bleeding days/study days) was: severe 48/648 (7.4%); major 74/648 (11.5%); moderate 21/648 (3.2%); minor 183/648 (28.2%). Babies born at < 28 weeks gestation had a greater incidence of both overall bleeding (68% vs 27% $p< 0.05$) and major/severe bleeding (30% vs 10% $p< 0.05$). Major bleeds included: intraventricular haemorrhage (12%), rectal haemorrhage (6%); pulmonary haemorrhage (7%). 218 of 648 daily assessments were duplicated. 86% of duplicate records matched ($p< 0.001$).

Conclusions: One in five babies in this study experienced major or severe bleeds. Minor bleeding is common although its significance remains unclear. Interventions to reduce bleeding in neonates will benefit from a validated recording system such as this BAT developed specifically for use in neonates.