RELIABILITY AND VALIDITY OF THE SEDATION SUBSCALE OF THE MODIFIED NEONATAL PAIN, AGITATION AND SEDATION SCALE (MN-PASS)

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Background: Sedation is necessary and a widely accepted practice in the mechanically ventilated (MV) neonate despite ill defined methods for measuring its depth. Benzodiazepines (BENZ) like IV Lorazepam (IVL) are used off-label as sedatives. The dosing of IVL is extrapolated from adults/older children. In animals, BENZ produce dose related neurotoxicity. Similar toxicity can be expected in the human brain with inappropriate dosing.

Aim:

1) test Reliability of the mN-PASS;

2) test Validity of the mN-PASS against the Sedation Behavior Scale(SBS) used as gold standard to measure the depth of sedation in neonates on MV.

Methods: Two trained observers scored sedation depth independently but simultaneously using the mN-PASS and SBS, pre and 30 minutes post a single 0.1 mg/kg dose of IVL. Reliability and validity was evaluated using inter-rater agreement (intra class correlations (ICC)) and correlations between the two scales (Pearson's correlation), respectively.

Results: 39 neonates (GA 29.7 + 6.7, PCA 39.7+ 6.5, BW 1.58 + 1.19kg) with a total of 156 observations for each scale for the 2 observers. ICC for pre and post IVL was 0.493 to 0.78 suggesting a weak inter rater agreement. The correlation between SBS and mN-PASS was weak but significant pre and post IVL for both observers combined (r=0.45, p=0.00; r=0.34, p=0.002; respectively) with similar trend for separate data analysis for each observer.

Conclusion: mN-PASS may not reliably assess the depth of sedation in neonates on MV. Newer scales for measuring sedation depth are needed.