Validation of the Neonatal Pain, Agitation and Sedation Scale for the assessment of sedation in neonatal intensive care patients

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Abstract

OBJECTIVE: To validate the Neonatal Pain, Agitation and Sedation Scale (N-PASS) for the assessment of sedation in neonates.

DESIGN: Prospective observational study.

SETTING: Two 10-bed neonatal intensive care units at the University Children’s Hospital, Medical University of Vienna, Austria.

PATIENTS: 50 sedated neonates at 23 to 44 weeks’ postmenstrual age provided a total set of 503 paired observations.

METHODS: Paired assessments of both the N-PASS and the Nurse Interpretation of Sedation Score (NISS), reflecting the expert opinion of trained neonatal critical care nurses with regard to the level of sedation, were performed.

RESULTS: N-PASS scores were significantly different for the three NISS categories. Inter-observer agreement for the N-PASS sedation subscale was excellent (linearly weighted Cohen’s Kappa: .93) as was the internal consistency estimated by a Cronbach’s alpha of .88, which increased to .90 when the vital sign item was excluded from the N-PASS. There was no risk of under-sedation in patients with an N-PASS score < -5 and no risk of over-sedation with an N-PASS score > -2. The N-PASS reliably detected over-sedation. Detection of under-sedation was markedly improved by simultaneous assessment of N-PASS pain/agitation scores which were significantly different in patients being considered adequately sedated vs. inadequately sedated (median N-PASS pain/agitation subscale score: 2 vs. 5).

CONCLUSION: The N-PASS meets the requirements of a valid clinical tool to assess sedation in neonates and may facilitate the use of sedation algorithms in the neonatal intensive care unit.