Validation of the Ramsay scale for invasive procedures in pediatrics

David Lozano Díaz

General Hospital La Mancha Centro, Ciudad Real 13600, Spain

Abstract:

Background: The Ramsay scale (RS) is the most widely used scale during pediatric procedures. It has not been formally validated for this use.

Objective: To validate the RS during invasive procedures under sedation in pediatrics by comparing it with the University of Michigan Sedation Scale (UMSS), the Sedation scale for procedures of the Niño Jesús Hospital (SSPNJH) and the bispectral index (BIS).

Methods: A prospective analytic study was conducted in two hospitals. All the patients ≥6 months that were undergoing invasive procedures under sedation were enrolled. All procedures were monitored with the BIS. All were recorded, and these videos were edited and randomized. 150 videos were scored by four observers (a pediatrician, a PICU nurse, an anesthetist and an operating room nurse). All videos were scored with the RS, UMSS and SSPNJH. These observers were blinded from the BIS and during the administration of the drugs. To evaluate test-retest reliability, 50 videos were randomly selected and reevaluated.

Results: 65 patients were included. The intraobserver agreement was rho=0.884. The RS showed an interobserver reliability with an ICC=0.94, an ICC=0.86 and an ICC=0.345 when comparing it with the UMSS, SSPNJH and BIS, respectively. The internal consistency was ⍺=0.91. The construct validity was demonstrated by the changes in the scoring of the RS after administrating the sedatives (p<0.0001). Regarding the criterion validity, the RS had a high correlation with the UMSS (r=0.621), a moderate correlation with the SSPNJH (r=0.405) and a low correlation with the BIS (r=-0.247).

Conclusions: The RS is valid and reliable to monitor sedation for invasive procedures under deep sedation in pediatrics, when comparing it with other sedation scales. It has not been correlated with the BIS. The applicability is limited in radiological procedures..

Biography:

Dr. David Lozano Díaz completed the Bachelor of Medicine and Surgery in 2000. He has completed his doctorate with 42 years at the University of Castilla-La Mancha. He carries out his work in the Neonatal and Pediatric ICU and in Pediatric Pulmonology of the General Hospital La Mancha Centro.

Publication of speakers:

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3. Diaz-Quijano, Fredi. (2020). Aula: Revisões sistemáticas e metanálise. 10.13140/RG.2.2.17585.20323/1.

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