Predicting Risk for Opioid-Induced Sedation and Respiratory Depression in Hospitalized Patients

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Introduction: Pain assessment and management is a fundamental part of nursing care. Opioids are one of the interventions utilized to manage pain within the hospital setting and have a known adverse effect called Opioid-Induced Sedation and Respiratory Depression (OSRD).

Identification of the problem: There is a lack of consensus regarding the risk factors that predict OSRD. Therefore, this study served as a first step in the creation of a risk screen tool for OSRD.

Purpose of the Study: The purpose of this quantitative study was to create a prediction model with the known risk factors, present on admission, for OSRD to determine how well they predict OSRD.

Methodology: The combination of factors that most accurately predict the risk of OSRD in patients on admission to an acute care healthcare institution was determined through a retrospective case control analysis. Risk factors present on admission of a case group who had succumbed to OSRD after an opioid administration were compared to a control group who did not. A binary logistic regression analysis determined how well age, body mass index, obstructive sleep apnea, pulmonary disease, respiratory disease, renal failure, and no opioid use (i.e., being opioid naïve) predicted OSRD.

Results: The presence of pulmonary disease, renal disease, cardiac disease, diabetes, and being opioid naïve most accurately predicted OSRD. Pulmonary and renal disease were statistically significant, while cardiac disease, diabetes and being opioid naïve increased patient odds of OSRD, but were not statistically significant.

Discussion: The advantage of only examining risk factors present on admission substantiates the purpose of this study and narrowed the focus from all the risk factors in the literature throughout the continuum of care. This allowed for a magnified view of factors to be screened on admission in a simplified tool.

Conclusion: The results extend the knowledge in the field on the topic and confirm other the findings of similar studies that used the case-control design to predict the risk factors for OSRD.

Implications for perianesthesia nurses and future research: Through understanding the factors that predict OSRD, a screening tool was created for future research, that could save lives in hospital institutions by supporting better clinical decision making and care.