Effect of introducing the mucosal atomization device for fentanyl use in out-of-hospital pediatric trauma patients

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Abstract:

Background: Pain associated with pediatric trauma is often under-assessed and undertreated in the out-of-hospital setting. Administering an opioid such as fentanyl via the intranasal route is a safe and efficacious alternative to traditional routes of analgesic delivery and could potentially improve pain management in pediatric trauma patients. Objective: The study sought to examine the effect of introducing the mucosal atomization device (MAD) on analgesia administration as an alternative to intravenous fentanyl delivery in pediatric trauma patients. The hypothesis for the study is that the introduction of the MAD would increase the administration of fentanyl in pediatric trauma patients. Methods: The research utilized a 2-group design (pre-MAD and post-MAD) to study 946 pediatric trauma patients (age ,16) transported by a large, urban EMS agency to one of eight hospitals in Marion County, which is located in Indianapolis Indiana. Two emergency medicine physicians independently determined whether the patient met criteria for pain medication receipt and a third reviewer resolved any

disagreements. A comparison of the rates of fentanyl administration in both groups was then conducted. Results: There was no statistically significant difference in the rate of fentanyl administration between the pre-MAD (30.4%) and post-MAD groups (37.8%) (P5.238). A subgroup analysis showed that age and mechanism of injury were stronger predictors of fentanyl administration. Conclusion: Contrary to the hypothesis, the addition of the MAD device did not increase fentanyl administration rates in pediatric trauma patients. Future research is needed to address the barriers to analgesia administration in pediatric trauma patients.

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