

Comparison of divided dose vs bolus medication form of morphine sulfate for management of Acute Pain in traumatic fracture in patients admitted to emergency department of Imam Khomeini hospital in Sari in 2015

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Background: Pain is one of the most common reasons patients visit emergency departments. morphine has been used extensively in pain management but there is no consensus about the effectiveness method of administration. The aim of this study was to comparison of divided dose vs bolus medication form of morphine sulfate for management of acute pain in traumatic fracture.

Methods: we design a randomized double-blind clinical trial. On base of inclusion and exclusion criteria, 160 patients with acute traumatic fracture were enrolled to the study and randomly divided into two groups. The first group (bolus group) receive 0.1mg/kg morphine and then 0.1mg/kg normal saline every 5 minutes. The second group (titration group) received 0.1mg/kg of morphine in divided doses every 5 minutes. All injections were intravenously. The primary outcome was pain and before of injection, 15 minutes and 60 minutes after injection was recorded. Data were analyzed using SPSS 19.

Results: 77 patients, included 49 (63.6%) male with mean age of 47.42 ± 13.15 years were in titration group and 83 patients included 47 males (56.6%) with mean age of 52.40 ± 15.62 years were in bolus group. The complication rate was significantly higher in bolus group (75.9% vs 53.2%, $P < 0.0001$). The need to extra morphine injection in bolus and titration group were 62.7% and 28.6%, respectively ($P < 0.0001$). The mean pain score before and at 15 and 60 minutes after injection were 9.56 ± 1.03 , 6.61 ± 1.86 and 1.85 ± 1.13 in titration group and 9.76 ± 0.48 , 6.53 ± 1.59 and 0.61 ± 0.46 in bolus group, respectively. the pain score was significantly lower in titration group at 60 minutes after injection ($P < 0.0001$).

Conclusion: The results of this study showed that titration of morphine is a safe and effective method in compared with bolus administration to reducing acute pain in traumatic fracture.

Key words: titration, morphine sulfate, acute pain control

