Adverse Effects of Analgesics in Orthopaedic Trauma: Are We Safe Enough?

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Purpose: Analgesia is a critical component of fracture care for which analgesics are prescribed after surgery, and upon discharge from the hospital. Effectiveness of the analgesics in providing adequate pain control if often variable, and adverse events may not always be noticed. This prospective study aimed to determine pain control and incidence of adverse events with routinely prescribed oral analgesics in patients undergoing surgery for proximal femoral fractures, and possible risk factors.

Methods: A total of 48 adult patients with proximal femoral fractures were recruited between June-December 2022. Data on oral analgesics prescribed postoperatively, at discharge, and on the first follow-up visit at 1 week was recorded. Pain score and incidence of adverse events were noted at 1- and 2-week follow-up. Adverse event rate was calculated in terms of events/person-year. The relation of adverse events to age and gender was analyzed using logistic regression.

Results: The overall adverse event rate was 5.4 events/person-year. Two unexpected adverse events of hypoglycemia and mortality were observed in 80- and 86-year-old patients. Both had femoral neck fractures with diabetes mellitus, hypertension, and cardiac disease. One was prescribed a combination of acetaminophen, tramadol, aspirin, and pregabalin at discharge and then acetaminophen on as-needed basis at a 1-week follow-up. He developed bilious vomiting and abdominal distension before death. The second patient experienced symptoms of hypoglycemia while on concomitant administration of insulin with acetaminophen and diclofenac. Notably, reports on hypoglycemic effect of acetaminophen and diclofenac are scarce Stratification showed that analgesic combinations of acetaminophen, tramadol, and aspirin with or without the addition of diclofenac or pregabalin are likely harmful, particularly in old age and with comorbidity. Celecoxib with acetaminophen and aspirin or a combination of acetaminophen and meloxicam appeared safe. No significant relation was found between adverse events and age or gender.

Conclusion: Results of this study show that routinely prescribed analgesics which are generally considered safe have a substantial incidence of adverse events and association with mortality in elderly patients. Certain combinations appear more unsafe than others. This information provides scientific rationale for the development of patient-specific guidelines for optimal, safe analgesia after proximal femoral fracture surgery, and warrants pharmacovigilance in patients with proximal femur fractures.