

[2003 Fall A21] Predictors of postoperative analgesic requirement after major lower extremity amputations

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In this retrospective chart review at our major vascular center, we analyzed various predictors and management strategies of immediate post amputation pain.

After institutional board approval, we reviewed the charts of patients who underwent major amputations from February 2002 to March 2003. The following information was collected from the charts; age, sex, weight and ASA physical status of the patients, comorbid conditions, presence of diabetic neuropathy and nephropathy, hemodialysis treatment, preoperative chronic opioid intake, other non-narcotic analgesic use (anticonvulsants, neurontin and antidepressants), presence and severity (visual analog scale-VAS) of preoperative pain, type of anesthesia, duration of surgery, intraoperative narcotic use, analgesic requirements in the immediate postoperative period, 0-24 AND 24-48 hours after surgery and side effects. Statistical analysis was performed using SPSS 11.5 software. Logistic regression was used to identify the risk factors. Comparison of means was also analyzed using independent samples t test. A total of 52 major lower extremity amputations (above and below knee) were performed in 49 patients over a period of 14 months. Of these patients, 34 procedures received general anesthesia, 11 other received spinal anesthesia, 2 each received femorosciatic block, combined spinal and epidural block and one amputation was done using monitored anesthesia care. 14 patients received patient controlled intravenous analgesia, continuous epidural analgesia was used in 4 patients and the remaining patients were managed with nurse controlled intermittent i.v narcotic administration. Using Logistic regression analysis, none of the following predicted the total analgesic requirement in 0-48 hours; sex, preoperative VAS, chronic opioid intake, use of other analgesics such as neurontin, presence of neuropathy and nephropathy, hemodialysis treatment and intraoperative fentanyl dose. Patients in spinal anesthesia group had lower age group (72+ 8.6 years in GA group, 57+8.9 years, $p=0.001$) and higher preoperative VAS (4.3+3.2 in GA group, 6.6+ 1.7, $p=0.005$) compared to patients who received general anesthesia. Higher morphine consumption was noted in patients who received SA compared with GA in 0-24 hours (11.9+ 21 mg in GA , 68.6 + 91.5 mg in SA group, $p=0.004$) and 24-48 hours (10+23 in GA group , 50+ 77 in SA group= 0.008). Analgesia related side effects were severe nausea and vomiting requiring repeat doses of ondansetron (13 patients), mental status changes (3), excessive sedation (unresponsive) with no change in respiratory rate (4), respiratory depression requiring naloxone (2), respiratory arrest requiring intubation (1), respiratory depression requiring transient bag and mask ventilation (1), apneic episodes(1) and severe hypotension requiring discontinuing of epidural analgesia(1)

No definitive predictors of acute postoperative pain after major lower extremity amputations could be identified in this retrospective analysis. Increased analgesic consumption in single dose spinal anesthesia could be due to younger age group and increased preoperative pain in those patients. High incidence of opioid related side effects was noted

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