IS PCA SUPERIOR TO NURSE-CONTROLLED ANALGESIA FOR CARDIAC SURGERY?

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INTRODUCTION:
Patient-controlled analgesia (PCA) has been advocated as superior to conventional nurse-controlled analgesia (NCA) with less risk to patients.[1] We conducted a meta-analysis of randomized trials of PCA versus NCA in patients undergoing cardiac surgery in order to determine whether PCA improves clinical and resource outcomes.

METHODS:
A comprehensive search was undertaken to identify all randomized trials of PCA versus NCA. Medline, Cochrane Library, Embase, and conference abstract databases were searched from the date of their inception to January 2005. The primary outcome was defined as visual analogue scores at 24 hours. Secondary outcomes included VAS at 48 hours, cumulative morphine equivalents consumed within 24 hours and 48 hours, sedation, nausea and vomiting, patient discontinuation, ventilation time, and length of stay (LOS). Odds ratios (OR) or weighted mean differences (WMD) and their 95% confidence intervals were calculated for discrete and continuous outcomes, respectively.

RESULTS:
Six trials involving 470 patients were included in the meta-analysis. 86% of patients underwent coronary artery bypass while the remainder underwent valve surgery or combined procedures. Compared to NCA, PCA reduced VAS at 48 hours [WMD -0.59, 95%CI -1.17, -0.17], a relative reduction of 20%. VAS scores were not statistically different at 24 hours [WMD -0.42, 95%CI 1.04, 0.20]. No significant difference was found for cumulative morphine equivalents consumed within 24 hours [WMD 2.87, 95%CI -0.02, 5.75], 48 hours [WMD 3.18, 95%CI -4.65, 11.01], and ventilation time [WMD 1.05, 95%CI 0.29-2.40]. Insufficient data was reported to allow for meta-analysis of sedation, constipation, pruritis, and length of stay (LOS).

CONCLUSIONS:
PCA appears to be superior to NCA in the management of pain following cardiac surgery, however the absolute differences are small. Whether certain subgroups would benefit more (patients on chronic narcotic therapy) from PCA treatment remains to be studied.

REFERENCES:
1. BJA, 89: 409-423.