458997 - A RANDOMIZED DOUBLE-BLIND COMPARISON OF A MORPHINE-FENTANYL COMBINATION VS. MORPHINE ALONE FOR PATIENT-CONTROLLED ANALGESIA FOLLOWING BOWEL SURGERY

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Introduction: An ideal patient controlled analgesia (PCA) opioid would have both a rapid onset and a long duration of action, attributes, which are not available in currently existing opioids including morphine, the most widely used agent. A mixture of rapid onset and long acting opioids may potentially achieve both these qualities. In this study, we compared a PCA fentanyl-morphine mixture to morphine alone.

Methods: The study received Research Ethics Board approval. Patients undergoing major bowel surgery were recruited. The combination solution was prepared according to a 1:75 fentanyl to morphine potency ratio (fentanyl 13.33 mcg/ml and morphine 1 mg/ml). The morphine alone solution contained 2 mg/ml. Patients were randomly allocated to one of the regimens and were then evaluated 4 times during the first 48 hours following surgery. Time to relief, visual analog pain scores, opioid consumption, demands, deliveries, and side effects on an opioid-related symptom distress scale were recorded.

Results: 64 patients were recruited and 58 completed the protocol. Groups were well matched for age, weight and sex. There were no significant differences between groups in time to relief, opioid consumption, pain scores or side effects other than the occurrence of nausea, which was lower for the combination group in one visit.

Discussion: Despite the theoretical advantage, this study failed to show a significant advantage to a mixture of fentanyl and morphine over that of morphine alone. Time to relief, consumption and pain scores were similar for both groups in all 4 visits during the first 48 hours. Although nausea was consistently lower in the mixture group, the difference reached statistical significance in only one of the four post-operative visits. The results are similar to a previous study which failed to achieve better or faster pain control with an opioid mixture.¹ It is possible that a higher concentration of fentanyl in the mixture (i.e. a 1:50 potency ratio) would have achieved better results. It is also possible that patient satisfaction was better in the mixture group. However, it is a very subjective measure, and was therefore not included in the interviews. There are very few studies, which explored opioid combinations as a way to optimize pain control.^{1,2} Further studies are needed to explore the potential of different potency ratios and opioid combinations to achieve rapid and long lasting pain control.

References: 1. Ngan Kee WD, Khaw KS, Wong EL. Randomised doubleblind comparison of morphine vs. a morphine- alfentanil combination for patient controlled analgesia. *Anaesthesia* 1999;54:629-33. 2. Ludbrook GL, Macintyre PE, Douglas H, Ong

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