

Effects of analgesic strategies on postoperative acute or chronic pain, delirium and complications in laparoscopic colorectal surgery

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Abstract

Aims: Postoperative pain and complications are the main risk factors against patients' recovery after colorectal surgery, and the pain can aggravate postoperative complications. This study aimed to investigate the effects of various postoperative analgesic strategies on the recovery after laparoscopic colorectal surgery. **Methods:** 400 patients undergoing laparoscopic colorectal cancer surgery were recruited, 335 patients were included eventually and five groups were involved: PCEA with ropivacaine in group ropivacaine, and PCIA with morphine, nalbuphine, sufentanil, or flurbiprofen plus sufentanil in the other four groups. The postoperative delirium (POD), postoperative pain, stress, and complications were recorded. **Results:** The incidence of POD and chronic postsurgical pain (CPSP) at 3 months or 6 months after surgery were higher in group sufentanil ($P=0.004$, $P=0.003$ or $P=0.003$, vs. group ropivacaine). The risks of movement-evoked pain (MEP) were much higher in group nalbuphine, group sufentanil and group flurbiprofen plus sufentanil ($P=0.001$, $P<0.001$, and $P<0.001$, vs. group ropivacaine), but not in group morphine. There were no differences in cortisol and ACTH levels in the 5 groups ($P<0.05$). The incidence of pruritus was found significantly higher in group morphine than in the other groups except group S ($P<0.005$). CPSP and POD were associated with MEP ($P<0.05$). **Conclusion:** PCEA is the first choice for postoperative analgesia in laparoscopic colorectal surgery, PCIA with morphine or nalbuphine can be considered an alternative, but sufentanil or combined with flurbiprofen might not be a good choice.

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Running title: Analgesic strategies in colorectal surgery

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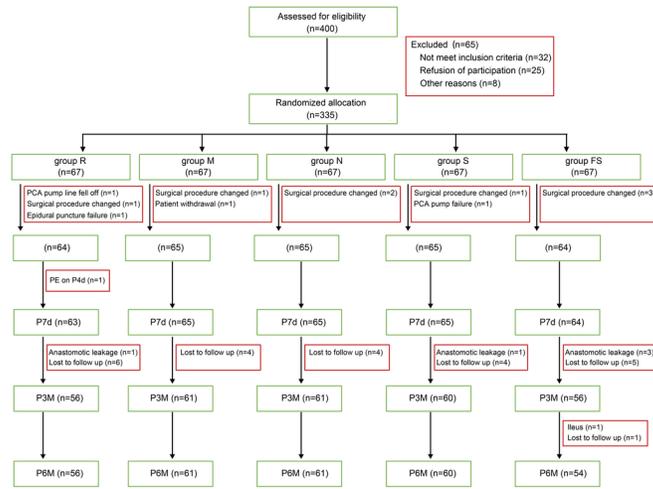


Figure 1. Flow chart of patients allocation

Note: pulmonary embolism (PE); postoperative day 4 (P4d); postoperative day 7 (P7d); postoperative month 3 (P3M); postoperative month 6 (P6M)