Analgesic efficacy of a single dose intrathecal morphine in patients undergoing robot-assisted laparoscopic prostatectomy (RALP)

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Abstract

BACKGROUND: The World Federation of Societies of Anaesthesiologists has established guidelines for anaesthesia in laparoscopic surgery, but detailed protocols for perioperative pain management in Robot- Assisted Laparoscopic Prostatectomy (RALP) are lacking (1). This study evaluated the analgesic efficacy of a single intrathecal morphine (ITM) dose in RALP.

METHODS: Following Ethics Committee approval, a retrospective chart review of 79 patient charts that underwent RALP procedures between 01/01/2021 and 31/05/2023 was conducted. One patient was excluded due to regular codeine use. As this study was retrospective, confounding factors such as patient co-morbidity, intraoperative analgesia, operating time, could not be controlled for however all surgeries were performed by the same experienced surgeon. A power analysis was done to confirm the minimum sample size of 62 patients. Patients were divided into ITM (n=18) and non-ITM (NITM, n=60) based on whether patients had or had not received the injection. Outcomes included recovery room pain scores, opioid requirements, time to first opioid request, 24-hour postoperative opioid consumption, opioid- related side effects (including respiratory depression, pruritus, nausea and vomiting), and anti-emetic usage. The expertise of the consultant anesthesiologist determined the dose of ITM. Data was analyzed using SPSS. The normality of continuous variables was assessed using the Shapiro-Wilk test. Group differences were analyzed using independent sample t-tests for parametric data and Mann--Whitney U tests for non-parametric data. A P-value of <0.05 was considered significant.

RESULTS: The median [IQR] ITM dose was 200 [50] micrograms. Pain scores in the RR and 24-hour opioid consumption were similar between groups. However, the ITM group had a longer time to first opioid request compared to the NITM group (16.64 [22.9] vs. 1.32 [7.78] hours, P=0.05). Morphine- related side effects were more frequent in the ITM group (16.7% vs. 0%, P<0.001), as was anti-emetic usage (55.6% vs. 15.3%, P=0.001).

CONCLUSION: In conclusion, a single dose of intrathecal morphine delayed the time to first opioid request in RALP patients but was associated with higher rates of side effects and anti-emetic use. These findings highlight the need to weigh the benefits of analgesia against the potential for increased adverse effects in patients undergoing RALP. For further clinical implications, these findings may help to establish specific pain management guidelines for anaesthesiologists in RALP. Furthermore, due to the retrospective design limits and small ITM group, future studies should look to have randomized or prospective studies to confirm these findings.

References

1. Iqbal H, Gray M, Gowrie-Mohan S. Anaesthesia for Robot-Assisted urological surgery. Tutorial of the week, 6 Aug 2019. https://resources.wfsahq.org/wp-content/uploads/408_english.pdf (Accessed 13 Jan 2025).