

Systematic review of the efficacy and safety of peri-operative analgesic techniques in laparoscopic cholecystectomy

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Background and Goal of Study

A systematic review was conducted to compare the efficacy and safety of analgesic, anaesthetic and operative techniques in influencing post-operative pain in adult patients undergoing laparoscopic cholecystectomy.

Materials and Methods

The review was conducted according to the methods of the Cochrane Collaboration. MEDLINE was searched from 1966–June 2002 and EmBASE from 1988–June 2002. A total of 59 studies was included in the review: randomised trials of peri-operative analgesia compared with either placebo or other methods of analgesia, and trials of anaesthesia and operative techniques conducted to examine their effect on post-operative pain. Visual analogues scores were pooled for meta-analysis. A comparison of pre- vs. post-operative administration was also conducted, pooling all modalities.

Results and Discussions

Meta-analyses for analgesic interventions are presented (Weighted mean difference [95% C.I.s]). *Intraperitoneal local anaesthetics (LA)*: VAS 0–6 hrs; -1.44 [-1.69, -1.18] $p < 0.00001$. VAS 6–12 hrs: -0.76 [-1.64, 0.11] $p = 0.09$. VAS 12–24 hrs: -0.52 [-1.55, 0.52] NS. *Incisional LA*: VAS 0–6 hr; -1.06 [-1.65, -0.46] $p = 0.0005$. VAS 6–12 hrs; -1.10 [-1.52, -0.68] $p < 0.00001$. VAS 12–24 hrs; -1.47 [-1.92, -1.02] $p < 0.00001$. *NSAIDs (all routes of administration)*: VAS 0–4 hrs; -2.44 [-3.14, -1.75] $p < 0.00001$. *Pre-op. vs. post-op analgesia (all modalities)*. (VAS)-0.94 [-3.01, 1.12] NS.

Conclusion(s)

Intraperitoneal and incisional local anaesthetics, and NSAIDs, reduced pain scores significantly. Incisional LA were longer acting than intraperitoneal LA. Qualitative analysis demonstrated the benefit of epidural analgesia. Pre-operative analgesia did not offer a significant advantage over post-operative administration. There was no clear evidence of the role of anaesthetic regimes in reducing post-operative pain. A number of commonly used modes of anaesthesia have not been examined in randomised studies in laparoscopic cholecystectomy. Further data are needed on the combination of these techniques and the potential role of patient baseline and surgical factors in predicting post-operative pain outcomes.