Incisional and intraperitoneal local anaesthetics in laparoscopic cholecystectomy and abdominal hysterectomy: a systematic review.

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Background: The application of intraperitoneal (IP) and/or incisional (IN) local anaesthetic (LA) for reducing postoperative pain could offer analgesic benefits with a favourable adverse events profile. The aim of this review was to examine the pattern of effect of single bolus IN and IP LA on visual analogue scale (VAS) pain scores for the first 2 postoperative days following laparoscopic cholecystectomy (LCS) and abdominal hysterectomy (AH).

Methods: The review was conducted using the methods of the Cochrane Collaboration. MEDLINE and EmBASE were searched from 1966–June 2003 (LCS) and Jan 2004 (AH). Randomised studies using a linear pain scale were included. Qualitative and quantitative analyses were conducted.

Results: Twenty-one studies (29 arms) examined IP LA in LCS; of these 17 arms reported a significant benefit. Quantitative analysis demonstrated a reduction in rest pain of 12.21 on the VAS (0–100 scale) at 1h, 6.19 at 6h, 4.01 at 12h and 0.85 at 24h, with a 5.18 higher score than placebo at 48h. Benefits on movement-associated pain (1 study) were 28.00 at 1h, 12.00 at 4h, 18.00 at 8h and 7 at 12h. Two studies (2 arms) examined IP LA in AH; of these one showed a significant benefit at 24 and 48 h for VAS pain scores at rest. Quantitative data were only available from 8h showing a reduction in score of 6.1 at rest and 4.9 on movement at 8h, 4.8 and 6.1 at 24h and 4.9

and 5.1 at 48h, respectively. Five studies (8 arms) examined pre-incisional LA in LCS; of these 5 arms reported a significant benefit. Quantitative analysis of these studies demonstrated a reduction in VAS score at rest of 13.9 at 3h, 11.0 at 12h, 12.1 at 24h and 3.5 at 48h. Three studies (3 arms) examined pre-incisional LA in AH; all 3 reported no significant benefit. Quantitative data demonstrated no significant benefit up to 48h for rest pain. Eight studies (9 arms) examined post-incisional LA in AH; 3 showed a significant benefit. Quantitative analysis demonstrated a reduction in VAS for post-incisional LA of 5.0 at 4h, 9.0 at 8h, 4.8 at 24h and 3.9 at 48h.

Conclusions: Intraperitoneal local anaesthetic has a significant and clinically meaningful effect in reducing pain on movement following laparoscopic cholecystectomy limited to approximately 6h. There is no evidence of a meaningful benefit in abdominal hysterectomy. Incisional local anaesthetic has a significant and clinically meaningful effect following laparoscopic cholecystectomy up to 24h. In contrast, there is mixed evidence for the effect of incisional local anaesthetic following abdominal hysterectomy. These data reinforce the need to examine the benefits of interventions on a procedure-specific basis.