The issue of the value of pre-emptive analgesia was examined in randomised studies in laparoscopic cholecystectomy, which are summarised in this systematic review.

The objective of this systematic review was to
1. Compare the efficacy and safety of analgesic, anaesthetic and operative techniques aimed at influencing postoperative pain in adult patients undergoing laparoscopic cholecystectomy.
2. Examine the effect on postoperative pain of the following procedures:
   - Pre-emptive analgesia
   - Incisional local anaesthetic
   - Epidural local anaesthetic
   - Double blockade
   - Combined epidural/general anaesthesia (CEGA)
   - Routine general anaesthesia

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 using predefined search criteria and reference lists of identified studies were also searched for further references.
- Articles were only considered for inclusion where they were in the English language.
- Studies eligible for inclusion were:
  - Those in which all patients or a definable sub-group underwent laparoscopic cholecystectomy.
  - Randomised trials of operative analgesia compared with either placebo or other methods of operative analgesia and anaesthesia aimed at influencing postoperative pain, and randomised trials of various techniques of analgesia were included to examine their effect on postoperative pain.
  - Double-blinding was required for all types of operative analgesia except in studies involving administration where the placement of a catheter for placebo administration would be considered unethical.
  - The use of visual analogue scale (VAS) or verbal rating scale (VAS) was required for inclusion.
- Meta-analysis was conducted on mean differences in postoperative VAS scores grouped for 0–6 hours, 6–12 and 12–24 hours.
- VRS scores were converted to VAS scores.
- The issue of pre-emptive analgesia was examined by grouping studies that contained arms with pre- and post-operative administration of the same agent or technique.

Results

- Fifteen studies were included for analysis and 70 studies were excluded from the review. The most common reason for exclusion was the use of open, rather than laparoscopic, cholecystectomy.
- The following studies and outcomes of peri-operative analgesic techniques were identified:
  - Pre-emptive (p) local anaesthetic (LA) vs no such therapy
  - Incisional LA
  - Epidural local anaesthetic (LA)
  - Combined epidural/general anaesthesia (CEGA)
  - Routine general anaesthesia

Discussion

- Pre-emptive analgesia did not offer a significant advantage in reducing morphine consumption (WMD -12.27 [29.20, 4.65], p=0.10). Although p GA had no significant benefit in reducing the incidence of nausea or vomiting in five studies (median not reported), meta-analysis showed that it was associated with a significant benefit in reducing nausea (WMD 0.33 [0.35, 0.81], p=0.003) but not vomiting (ads ratio 0.54 [0.28, 1.05], p=0.09).
- Local incisional anaesthetic (LA) vs no such therapy (6 studies, n=185 active, 133 control).
  - Five studies including one that utilised a small visual analogue scale (VAS) of 0–4 hours* (WMD = weighted mean difference)
  - Six of the 7 studies reported superiority for NSAIDs vs. control in reducing VAS scores. For the meta-analysis, consistent data were available for 0–4 hours

Conclusions

- Pre-emptive and incisional LA, and NSAIDs, reduced pain scores significantly compared with controls.
- Incisional LA were longer acting than NSAIDs.
- Meta-analysis demonstrated the benefit of epidural analgesia, although the clinical utility of this technique in laparoscopic cholecystectomy is doubtful.
- Pre-operative analgesia did not offer a significant advantage over postoperative administration.
- The value of postoperative use of analgesic regimens in reducing postoperative pain.
- A number of commonly used modes of analgesia (e.g. paracetamol) have been examined in randomised trials in laparoscopic cholecystectomy.
- Further data are needed on the combination of techniques, and the potential role of patient baseline and surgical factors, in predicting postoperative pain outcomes.

References

6. Papaziogas 1996 (1) 17 3.60 (2.20) 18 7.20 (2.60) 13.9