A qualitative systematic review of incisional local anaesthesia for postoperative pain relief after abdominal operations

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Authors' objectives
To investigate the effect of wound infiltration with local anaesthesia for postoperative pain control.

Searching
The Cochrane Library (Issue 4, 1997) and MEDLINE (1966-1997) were searched without language restriction (search terms provided). Reference lists of retrieved reports and review articles were also searched for further references. No abstracts or unpublished observations were included. Authors were not contacted for original data.

Study selection
Study designs of evaluations included in the review
Randomised, double-blind comparisons of local anaesthesia compared to placebo (saline) or on-placebo (no treatment). Reports of comparisons of local anaesthetic wound infiltration with other treatments were not considered.

Specific interventions included in the review
Incisional local anaesthesia defined as infiltration, topical administration, or instillation of local anaesthesia of, for example, skin, subcutaneous tissue, fascia, muscle, and/or the peritoneum. Anaesthetics used included bupivacaine, lidocaine, ropivacaine at various doses. Studies where nerve blocks, or intraperitoneal local anaesthetic instillation or infiltration of viscera were performed were excluded.

Participants included in the review
Adult patients (aged over 15 years) undergoing abdominal incisions (laparotomies or herniotomies). Studies of laparoscopic surgery and other surgical procedures, such as thyroidectomy, hemilaminectomy, haemorrhoidectomy, odontological surgery, tonsillectomy, and arthroscopy were not considered.

Outcomes assessed in the review
Postoperative effectiveness was evaluated by significant difference (P < 0.05) in pain relief, assessed using pain scores (visual analogue score or similar), time to first request for supplementary analgesia, and consumption of supplementary analgesics compared with control.

How were decisions on the relevance of primary studies made?
The authors do not state how the papers were selected for the review, or how many of the authors performed the selection.

Assessment of study quality
Studies were scored using a three item, 1-5 quality scale developed by Jadad et al (see Other Publications of Related Interest). The minimum score of an included RCT was 2 and the maximum was 5. Each paper was scored independently by each of the authors.

Data extraction
Information on type of anaesthesia (general or regional), number of patients enrolled and adverse effects was taken from each report. The method of data extraction was The authors do not state how the data were extracted for the review, or how many of the authors performed the data extraction.
Methods of synthesis
How were the studies combined?
The studies were combined in a narrative review.

How were differences between studies investigated?
The authors do not state how differences between the studies were investigated.

Results of the review
Twenty six RCTs with 1211 patients were included. Five studies considered inguinal hernia (242 patients); four considered abdominal hysterectomy (167 patients); eight considered open cholecystectomy (376 patients); and a further nine considered various other types of abdominal surgery (426 patients).

1. Incisional local anaesthesia for postoperative pain relief after inguinal hernia.
   Significant reduction in pain scores: 5/5 studies.
   Significant reduction in supplementary analgesia: 4/5 studies.
   Significant reduction in time to analgesia request: 4/4 studies.

2. Incisional local anaesthesia for postoperative pain relief after abdominal hysterectomy.
   Significant reduction in pain scores: 1/4 studies.
   Significant reduction in supplementary analgesia: 2/4 studies.
   Significant reduction in time to analgesia request: not recorded.

3. Incisional local anaesthesia for postoperative pain relief after open cholecystectomy.
   Significant reduction in pain scores: 2/4 studies.
   Significant reduction in time to analgesia request: a studies.

4. Incisional local anaesthesia for postoperative pain relief after various major and minor surgical procedures.
   Significant reduction in pain scores: 4/9 studies.
   Significant reduction in supplementary analgesia: 5/9 studies.
   Significant reduction in time to analgesia request: not recorded.

Authors’ conclusions
With the exception of herniotomy, this review revealed an overall lack of evidence for any important effect (rather than evidence for a lack of effect) of incisional local anaesthesia in most abdominal procedures despite the numerous studies available.

CRD commentary
This systematic review is of reasonable quality. It has a clearly focused aim, clear inclusion and exclusion criteria, and the authors have conducted a validity assessment of the included studies. Some details of the primary studies were provided, and the narrative discussion of included studies seems appropriate. The literature search for published studies was reasonable, however no attempt was made to identify unpublished literature. Further details of how the review was...
conducted would have been useful. Given the small sample sizes of the included studies (which the authors acknowledge as a limitation), the authors conclusions seem appropriate and justified.

**Implications of the review for practice and research**
The authors state that the use of incisional local anaesthesia should be reserved for herniotomy until further well designed studies with a strictly standardised methodology are available.

**Bibliographic details**

**PubMedID**
9861124

**Original Paper URL**
http://bja.oxfordjournals.org/cgi/reprint/81/3/377

**Other publications of related interest**

**Indexing Status**
Subject indexing assigned by NLM

**MeSH**
Abdomen /surgery; Anesthesia, Local /methods; Anesthetics, Local /administration & dosage; Cholecystectomy; Double-Blind Method; Female; Hernia, Inguinal /surgery; Humans; Hysterectomy; Pain, Postoperative /drug therapy; Randomized Controlled Trials as Topic

**AccessionNumber**
11998001584

**Date bibliographic record published**
31/03/2000

**Date abstract record published**
31/03/2000

**Record Status**
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.