Pain control in first trimester surgical abortion

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Findings of this review are based on small studies that evaluated a variety of interventions. They suggest that conscious sedation, general anaesthesia and some non-pharmacological interventions are likely to be safe and helpful in decreasing procedural and postoperative pain, and patients rate these interventions as satisfactory. Available studies on paracervical block examined several aspects of the technique, but the data were inadequate to recommend its use.

RHL Commentary by Cheng L

1. INTRODUCTION

The World Health Organization estimates that worldwide approximately 42 million abortions take place each year (1). Nearly 90% of abortions are performed in the first trimester of pregnancy, before 14 weeks of gestation (2). There are two approaches to surgical abortion: vacuum aspiration and dilatation and evacuation. When performed by trained health-care providers in sanitary conditions using proper equipment and a correct technique, surgical abortion for early pregnancy is a safe surgical procedure (2). However, like any other surgical procedure, both vacuum aspiration and dilatation and evacuation involve pain, and therefore pain control measures have to be undertaken. This review sought to compare different pharmacological and non-pharmacological pain control methods administered prior to or during first trimester surgical abortion (< 14 weeks gestation, on perceived pain, satisfaction, side-effects, and safety (3).

2. METHODS OF THE REVIEW

This review sought available randomized controlled trials that had compared the efficacy of different methods of pain control during first-trimester surgical abortion on patients’ perception of pain, satisfaction with the treatment, side-effects, and safety. The review authors analysed the data in the included trials appropriately. The search for trials was comprehensive, assessment of quality of the included trials was adequate, and the data are presented clearly in both tables as well as in text.

3. RESULTS OF THE REVIEW
Forty randomized controlled trials with a total of 5131 participants were included in the review. Owing to the large variety of interventions, low numbers of study subjects in each study and heterogeneity of the results, it was not possible to combine the data and perform meta-analysis in most cases, which rendered the results rather weak. The authors divided the available trials into seven groups for comparison as presented below.

**Local anaesthesia**

Ten studies with 1527 participants that had investigated the use of local anaesthesia met the inclusion criteria. The data were insufficient to show a clear benefit of paracervical block (PCB) when it was compared with no PCB or with bacteriostatic saline. Pain scores (measured in most studies by visual analogue scale) during dilatation and aspiration improved with PCB with deep injection [weighted mean difference (WMD) -1.64, 95% confidence interval (CI) -3.21 to -0.08; WMD -1.00, 95% CI -1.09 to -0.91], and with the addition of a 4% intrauterine lidocaine infusion (WMD -2.0 95% CI -3.29 to -0.71; WMD -2.8 95% CI -3.95 to -1.65 with dilatation and aspiration, respectively). Waiting for 3 minutes after PCB decreased pain associated with dilatation but not with aspiration.

**PCB with premedication**

Three studies with 434 participants investigated the effect of premedication with different drugs (given orally): ibuprofen 600 mg, lorazepam 1mg or naproxen sodium 550 mg) followed by a PCB with 1% lidocaine 20 ml. PCB complemented with ibuprofen or naproxen resulted in a small reduction in intra- and postoperative pain.

**Analgesia**

One study with 100 women compared the combination of an analgesic (diclofenac sodium 50 mg given 4 hours preoperatively) plus a cervical ripening agent (200 μg misoprostol) with misoprostol alone. It did not find any differences between the two groups in terms of pain control or of acceptability of the pain control method.

**Conscious sedation**

Three small studies involving 274 participants investigated conscious sedation. The addition of conscious intravenous sedation using diazepam and fentanyl to PCB decreased procedural pain.

**General anesthesia**

A total of 14 studies with 1812 participants investigated general anesthesia. Four studies compared halothane, enflurane and trichloethylene with various sedative/hypnotic agents. Ten studies included propofol, nine studies included a barbiturate (5 methohexital), five thiopental, four ketamine, three benzodiazepine midazolam and one etomidate. Compared with general anesthesia, conscious sedation was associated with increased intraoperative and postoperative pain [Peto odds ratio (OR) 14.77, 95% CI 4.91–44.38; and Peto OR 7.47 95% CI 2.2 to 25.36 for dilatation and evacuation and vacuum aspiration respectively, and WMD -1.00 95% CI -1.77 to -0.23 postoperatively]. Inhalation anaesthetics were associated with increased blood loss.

**General anesthesia with premedication**

Seven studies investigated the influence of premedication with various analgesics (selective or non-selective COX inhibitor or opioids) on postoperative pain after GA. The COX 2 inhibitor etoricoxib, the non-selective COX inhibitors lornoxicam, diclofenac and ketorolac, and the opioid nalbuphine were associated with improved postoperative pain relief.
Non-pharmacological intervention

Four small and very different studies investigated non-pharmacological interventions. In patients with a PCB, hypnosis did not change the level of comfort during the procedure compared to standard care; however, it decreased the requests for nitrous oxide (Peto OR 0.12; 95% CI 0.03–0.54). In one study with 98 women, listening to stereo music compared with self-administration of methoxyflurane decreased pain with aspiration (Peto OR 0.17; 95% CI 0.04–0.63). Providing sensory compared to general information did not affect procedural pain or distress. Relaxation did not change procedural or postoperative pain in patients with local anaesthesia compared to pleasant or analgesic imagery, or a control group.

There was no major complication reported in the 40 trials.

4. DISCUSSION

4.1 Applicability of the results

This review concludes that conscious sedation, general anaesthesia and some non-pharmacological interventions not only decrease procedural and postoperative pain, but also appear to be safe and patients rate them as satisfactory. Available data on PCB were inadequate to extract a specific recommendation. However, PCB with deep injection appears to reduce procedural pain. Although there were no major complications reported in the studies included in the review, general anaesthesia could increase health risks for women, including the risk of haemorrhage (4) and even mortality (5). Use of general anaesthesia also increases the cost of health-care and therefore in under-resourced settings its use may be limited.

4.2 Implementation of the intervention

Pain management is an essential aspect of abortion care. Controlling pain and anxiety effectively have important physiological and psychological benefits and result in greater patient satisfaction. The choice of pain control method should be guided primarily by considerations of patient preference and safety. Among the seven interventions for pain control, local anaesthesia (especially deep injection of PCB with lidocaine), and non-pharmacological interventions would be more feasible to implement in surgical abortion in under-resourced settings.

Counselling and sympathetic treatment of women is likely to reduce women’s fears and perceptions of pain (6). The person providing surgical abortion and other staff present should be friendly and reassuring. Where feasible, and if the woman wishes, it may also be helpful to have the woman’s husband, partner, a family member, or a friend to remain with her during the procedure. However, these approaches should not be seen as a replacement for alleviation of pain by medical methods (2).

4.3 Implications for research

The data for PCB, which is widely used in clinical practice, from this review reveals inadequate to support its use, and it needs to be further studied in order to determine whether it has any benefit.

References


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