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Commentary

Pain relief during minor procedures: a challenge for gynaecologists

Common gynaecological problem as abnormal uterine bleeding and postmenopausal bleeding require evaluation by sampling of the endometrial tissue which was initially done by dilatation and curettage (D&C). The D&C has been substituted by outpatient procedures like endometrial suction curette biopsy, aspiration by Karman's cannula or fractional curettage or hysteroscopically guided biopsy. Other minor procedure which can be conducted in outpatients settings are suction termination, cervical biopsy, saline infusion sonography, *etc*. The major limitation in successful completion of the procedure is pain management. Patients frequently experience moderate to severe pain during these gynaecologic procedures and in some cases the severity of pain makes it impossible to take adequate sample in biopsy. Most patients can tolerate pain to complete necessary procedures but studies show that pain scores with cervical biopsy and cervical curettage range from four to six on a 10-point visual analogue scale (VAS)[1,2]. Endometrial biopsies have shown VAS scores ranging from five to seven[3,4]. Pain on VAS more than six suggests the need of pain relief.

The choice of anaesthesia and analgesia is dependent on effectiveness, cost, safety, and side effects. Other factors are related to the patient's and physician's preferences. General anaesthesia provides analgesia, amnesia and a hypnotic effect and provides adequate operating conditions for cervical dilatation and uterine intervention but it is associated with increased mortality and morbidity. Lichtenberg *et al*[5] showed that only 10 per cent of clinics use general anaesthesia, so local anaesthesia becomes a dominant method with 58 per cent use in clinics and 32 per cent use of intravenous sedation with local anaesthesia.

The paracervical block with local anaesthetic agents is one of the most common procedures used since 1925[6]. Paracervical anaesthetics block transmission of pain through sympathetic and parasympathetic sensory fibres, before these fibres enter the uterus at the level of the internal cervical os[6]. Most commonly used agent is one per cent lignocaine injected at 5 and 7 O'clock position on the cervix. Paracervical block is a convenient, safe, simple, and effective anaesthetic technique for curettage being used by most clinicians with or without additional analgesia.

Tangsiriwatthana *et al*[6] assessed the efficacy of paracervical block for cervical dilatation and uterine intervention, and stated that no local anaesthetic agent prevented pain as well as general anaesthesia. There was no evidence that paracervical block reduced pain compared to alternative regional anaesthetic methods or systemic analgesics and sedatives. In most studies pain score was more than six during the procedure when using placebo implying the need of pain relief[6].

The study of Acmaz and colleagues[7] assessed the analgesic efficacy of preoperative oral dexketoprofen trometamol, intravenous paracetamol, lidocaine spray, pethidine and diclofenac sodium on fractional curettage procedure. A total of 144 mutiparous women were randomly allocated to the six groups. Though significant pain reduction was achieved for both intra- and postoperative periods by using analgesics but lidocaine spray was the best choice for reducing pain score during curettage procedure. All analgesic procedures were significantly effective for reducing pain in post operative period. The authors advocated the use of lidocaine spray as the first choice analgesic and pethidine as the second choice analgesic in the fractional curettage procedure.

Lidocaine spray produces significant pain relief even in the absence of clinically significant serum levels as it is proposed to act by reduction of

generation and conduction of peripheral pain impulses in dysfunctional or damaged nociceptors situated directly below the application site[2]. The addition of 10 per cent lidocaine spray to a paracervical block safely decreased perceived pain during first-trimester surgical abortion, as compared to paracervical block alone[8].

Non steroidal anti-inflammatory drugs (NSAIDs) show their effect by cyclooxygenase inhibition, thereby decrease the release of prostaglandins and do not discriminate between the two enzymes cyclooxygenase (COX)-1 and -2[9]. The administration of oral NSAIDs like tramadol, naproxen, ibuprofen, and mefenamic acid with or without the adjunctive use of paracervical block or intrauterine anaesthesia prior to minor gynaecologic surgery has been introduced in recent years. Dexketoprofen trometamol, the active enantiomer of racemic ketoprofen, is a relatively new NSAID with analgesic and antipyretic properties[9]. When compared with ketoprofen, dexketoprofen it possesses the advantages of faster onset of action, increased potency, and fewer gastrointestinal side effects. Diclofenac also belongs to NSAID group and has been shown to be effective in reducing intra- and post operative pain after fractional curettage as in the present study[7]. This has been consistent with a prior study which has demonstrated effectiveness of NSAIDs in such procedures[9].

Pethidine is a phenylpiperidine derivative with a chemical structure similar to local anaesthetics. Because of its local anaesthetic effect on peripheral nerves it may be the ideal analgesic for curettage. In the present study, pethidine was given subcutaneously while in previous studies, it was given intramuscularly or intrathecally for postoperative pain after caesarean section or other perineal surgery[10-12]. Paracetamol primarily acts upon the central nervous system by inhibiting central cyclooxygenase. It probably has an indirect effect on the serotoninergic system[13]. Paracetamol is considered safe and can cross the blood brain barrier[13].

Most of the analgesics are effective in providing post-procedure pain relief in gynaecological procedures.The analgesics led to a reduction in pain score by 40-50 per cent in the study of Acmaz *et al*[7], but lidocaine puffs provided the best pain relief than the other analgesics or placebo. It is observed that during colposcopy treatment cocaine spray before treatment resulted in better pain relief[14].

In the recent Cochrane reviews[6,14] the existing literature regarding pain control for intrauterine interventions as hysteroscopy, first trimester abortion, intrauterine device (IUD) insertion and hysterosalpingography (HSG) has been evaluated, and both the reviews have concluded that optimal methods for pain control are unclear as results of different researches in this field are not consistent. This could be due to heterogeneity in methods and reporting. Many studies were not well designed, the comparator used varied as placebo, local block or no medication. Measurement of pain relief varied as multiple outcomes were used as 10 or 20 cm VAS. While most studies compared difference in mean or median pain scores between intervention and control groups, several compared proportions of patients who reported pain above a predefined cut-off point. Many studies gave importance to need of additional analgesics as a criterion of pain relief measurement. Pain measurements were taken at different times across studies, ranging from one measurement during the procedure to a total of seven measurements prior, during, and after procedures[6,14].

The analgesics have complications like nausea, vomiting, rashes, bradycardia, and stomach complaints reported in 2-10 per cent cases[5]. This study[7] also had similar rate of complications in all the groups. Strengths of the study by Acmaz *et al*[7] were: randomized placebo controlled trial which was double blind with a power of 80 per cent, many confounding variables were taken into consideration as stringent inclusion criteria, no misoprost or analgesics prior to intervention, only multiparous patients enrolled, exclusion of patients of chronic pelvic pain and performance of procedure by same gynaecologist. The study had limitations also. The number of patients in control group receiving placebo via different modes of administration was small to make adequate comparisons with each study group. The authors in their previous study[2] recommended paracervical block as the best method for reducing pain scores in intra- and postoperative periods during curettage procedures. So paracervical block should also have been taken into account while recommending the suitable pain relief technique. Operator's perception of analgesics and patient's satisfaction should also have been included as a parameter for making a choice of best available pain relief modality.

In conclusion, though topical lidocaine spray appears promising, there is still no consensus established on which type of analgesia should be used in patients undergoing fractional curettage and

endometrial biopsy. More randomized controlled trials with large number of subjects are needed for its use to be recommended.

Pratima Mittal* **& Manu Goyal**
Department of Obstetrics & Gynaecology
Vardhaman Mahavir Medical College &
Safdarjung Hospital
New Delhi 110 029, India
**For correspondence*:
drpratimsa@hotmail.com

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