FSRH Statement: Pain associated with insertion of intrauterine contraception
30 June 2021

Recent media reports have highlighted cases of individuals who have experienced distressing intrauterine contraception (IUC) fitting. Some individuals do find IUC insertion anxiety-provoking and painful. However, studies suggest the majority of individuals report that pain during IUC fitting is mild (visual analogue score 1-3/10) or moderate (score 4-6/10) rather than severe (7-10/10)\(^1\), even without use of analgesia\(^2,3\). By five minutes after insertion, reported mean pain scores are low.\(^4,5\) In studies reporting both pain scores and a description of the experience, moderate pain scores correlate with descriptions of discomfort rather than pain.\(^1,6\)

Can we identify individuals who might experience greater pain at IUC insertion?
Reported mean pain scores are generally higher amongst nulliparous individuals and those that have only had caesarean deliveries.\(^1,2,7,8\) History of dysmenorrhoea is associated with higher pain scores.\(^8,11\) Importantly, greater anxiety, greater anticipated pain and negative perceptions of intrauterine contraception prior to the procedure appear to correlate with higher experienced pain scores.\(^7,8,12\) Previous experience of painful gynaecological/obstetric procedures may contribute to higher anticipated pain scores.\(^7\)

For any individual it is, however, impossible to predict with certainty whether they will experience pain or discomfort during IUC fitting.

Interventions to manage pain associated with IUC insertion
Discomfort and pain may be experienced with any of the stages of IUC fitting: speculum insertion, tenaculum placement, and in particular, uterine sounding and device placement itself.\(^5,7\) Technically difficult insertions may be associated with higher reported pain scores.\(^2,3\) It is noted that removal of IUC is a much more minor and usually well-tolerated procedure.

Numerous studies and systematic and narrative reviews have sought effective strategies are effective to reduce pain associated with IUC insertion.\(^3,13-18\)

Oral analgesics (pre and post procedure)
Studies of prophylactic ibuprofen have not demonstrated reduced pain scores relative to placebo during IUC insertion. In a 2018 randomised controlled trial (RCT) Abbas\(^19\) reported benefit relative to placebo with oral ketoprofen 150mg taken an hour prior to the procedure. In other RCTs, Karabayirli (2012)\(^20\) reported lower mean overall pain scores compared to placebo amongst individuals using naproxen 550mg or tramadol 50mg one hour prior to the procedure (the effect was significantly greater with tramadol than with naproxen) and Ngo\(^21\) demonstrated significantly reduced pain scores at five minutes after insertion with naproxen 550mg taken an hour pre-insertion compared with placebo. NSAIDs are effective to reactively treat post-insertion pain.\(^22\)
Cervical priming
Misoprostol, a prostaglandin analogue, has been trialled in various regimens for cervical priming prior to IUC insertion. While some studies report significantly reduced insertion pain scores versus placebo, others do not, and prostaglandin side effects including cramping pain are an important consideration.\(^2\)\(^{-23}\)

Local anaesthetic
10% lidocaine spray 4 puffs (10mg per puff) applied to the surface of the cervix including the external os three minutes prior to the procedure has been demonstrated by three RCTs\(^5,\)\(^24,\)\(^25\) to significantly reduce IUC insertion-related pain scores compared to placebo; one of these RCTs found lidocaine spray to be more effective than lidocaine injection and lidocaine cream.\(^25\) Most participants in these studies were parous. Vaginal irritation was common\(^5\), which could reflect the excipients, including flavourings, in the Xylocaine spray.\(^26\) The FSRH CEU suggests that although the spray nozzles are disposable, the bottle delivers multiple doses and infection control must be carefully observed.

Paracervical block using 1% lidocaine was reported by two RCTs to significantly reduce pain scores compared with placebo in nulliparous individuals, although there was pain associated with the local anaesthetic injection itself.\(^4,\)\(^27\) A third RCT using 10ml 2% lidocaine for paracervical block demonstrated benefit compared to placebo.\(^25\)

In a recent RCT\(^28\), intracervical block using 3.6ml of 2% lidocaine administered with a 27 gauge needle in divided doses at 3, 6, 9 and 12 o’clock prior to tenaculum placement significantly reduced both mean pain scores and occurrence of severe pain at tenaculum placement and device insertion compared with placebo and no intervention in nulliparous individuals. However, an earlier RCT\(^29\) demonstrated no benefit with 1% lidocaine intracervical block compared to placebo.

2% lidocaine gel administered into the cervical canal and at the tenaculum site or self-administered to the vagina does not, in studies, significantly reduce insertion pain. However novel gel formulations could be more effective and may warrant further study.\(^3\)

Parous individuals randomised to cervical application of EMLA 5% lidocaine/prilocaine cream (2ml to the anterior cervical lip with a cotton bud and 2ml into the cervical canal to the level of the internal os seven minutes prior to IUD insertion) reported significantly lower median pain scores than those randomised to placebo.\(^30\) A 2019 systematic review and network meta-analysis by the same team suggested that application of EMLA cream could be the most effective option for pain reduction at tenaculum placement and device insertion.\(^16\)

Summary
There is no clear “best” analgesic option. However, paracervical block, intracervical local anaesthetic injection (see e-SRH Intrauterine Techniques module), 10% lidocaine spray applied to the surface of the cervix and external os three minutes prior to the procedure, or EMLA cream applied to the tenaculum site and into the cervical canal could all reduce insertion-related pain. Ketoprofen or naproxen taken an hour before the procedure could be beneficial for insertion and post-insertion pain. There is not evidence for routine prophylactic use of ibuprofen, although non-steroidal anti-inflammatory drugs are beneficial for treating established pain after insertion.
**Non-pharmacological interventions**

A 2019 systematic review highlighted the lack of evidence around non-pharmacological options for minimising anxiety and pain around IUC insertion.\(^1\) The importance of creating an environment that affords privacy, reassuring professionalism and is sensitive to feelings of embarrassment is described.\(^3\)\(^1\)\(^1\) It is noted that clinicians may underestimate the anxiety and pain experienced.\(^1\) Healthcare practitioners regularly undertaking IUC insertion procedures know well the significant benefit of “vocal local” – an assistant present to provide support and distraction to the patient. No specific insertion equipment or inserter type is clearly associated with less pain at insertion, although narrower insertion devices could be associated with less difficult insertion and lower pain scores.

**What does the FSRH recommend?**

Insertion-related pain, both anticipated and experienced, and anxiety about the insertion procedure can be barriers to use of intrauterine contraception.

Work in partnership with users to establish the best strategies for reducing anxiety and the most effective interventions for minimising pain at IUC insertion needs to continue. FSRH considers it crucial that it is the patient’s informed decision to use intrauterine contraception. The insertion procedure should be carried out by trained healthcare professionals who are mindful of the patient experience and understand that a minority of individuals do report severe pain associated with the procedure. Healthcare professionals should create a reassuring, supportive environment, offer appropriate analgesia (and referral on to another provider if they cannot offer this) and ensure that the patient is aware that they can request that the procedure stops at any time.

Copper and hormonal intrauterine devices provide highly effective, convenient, reversible contraception. Hormonal devices offer the additional non-contraceptive benefit of management of heavy or painful menstrual bleeding, and copper IUDs afford an effective hormone-free contraceptive option. FSRH welcomes future studies, working with users to optimise the patient experience for individuals choosing intrauterine contraception.

**References**


26. emc .Aspen. Xylocaine 10mg Spray. Last updated on emc: 06 November 2018

The Clinical Effectiveness Unit (CEU) was formed to support the Clinical Effectiveness Committee of the Faculty of Sexual & Reproductive Healthcare (FSRH), the largest UK professional membership organisation working at the heart of sexual and reproductive healthcare. The FSRH CEU promotes evidence based clinical practice and it is fully funded by the FSRH through membership fees. It is based in Edinburgh and it provides a members’ enquiry service, evidence-based guidance, new SRH product reviews and clinical audit/research. Find out more here.