General v/s. Regional Anaesthesia for D & C - A Prospective Observational Study

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ABSTRACT

BACKGROUND
The choice of anaesthesia for day care surgeries like D and C has always been a matter of debate. We have always been searching for ideal local anaesthetic for day care procedures. We aimed to compare sedation / general anaesthesia with sub arachnoid block using a very short acting local anaesthesia like chloroprocaine for D and C. Both the groups had their own pros and cons but when compared we found that group using SAB with chloroprocaine has less haemodynamic instability and post-operative complication when compared to general anaesthesia group.

We studied 80 patients, 40 in each group over a period of 2 months; a small sample to establish an ideal anaesthetic choice for D and C but the benefits of sub arachnoid block using chloroprocaine cannot be overlooked.

METHODS
We conducted a prospective 2 months observational study on 80 patients undergoing D & C. Permission from institutional ethical committee was obtained and this study was conducted among gynaecologists, anaesthetists, operation theatre (OT) technicians and nursing staff of government medical college, Kathua and Jammu. Individual written informed consent was obtained.

RESULTS
A total of 80 patients were included. 40 were given SAB using CP 1% and 40 were given GA. Mean age of patients was 33.40±7.34 years with height of 152.95±8.99 cms and weight of 60.93±14.08 Kgs (Table 1). ASA status was comparable in both the groups. Analysis of baseline demographic data did not show any significant difference between the groups (Table 1). The HR in the SAB group was mean of 81.85±13.60 at induction and 76.68±12.28 at the end of 20 min whereas, the heart rate of GA group was 83.18±19.09 at induction and 92.33±20.59 at 20 min. The p value obtained was 0.001, which is significant.

CONCLUSIONS
Now-a-days gynaecologists are preferring suction and curettage procedures. Type of anaesthesia depends more on patient’s preference and individual choice rather than a generalised approach. GA has advantage of good post-operative analgesia. SAB using 1% chloroprocaine provides better haemodynamic stability. Lack of airway manipulation and poly pharmacy is avoided.

KEYWORDS
Dilatation and Curettage, General Anaesthesia, Chloroprocaine

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BACKGROUND

The international association for the study of pain defines pain as an "unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage".\(^1\) Dilatation and curettage (D & C), a therapeutic gynaecological procedure refers to the dilatation (widening /opening) of cervix and surgical removal of part lining of uterus/ contents of uterus by scraping and scooping.\(^2\) It is one of the commonest procedure conducted in outpatient department under sedation or short general anaesthesia (GA). The availability of reliable and safe short acting local anaesthetics (LA) has recently renewed interest in the spinal technique for outpatient surgery offering an alternative to GA.\(^3\) The choice of correct LA for subarachnoid block (SAB) is therefore important in day care surgeries. An ideal anaesthetic agent should cause rapid onset and offset of its own effects for quick patient discharge and has minimal side effects.\(^4\) Spinal anaesthesia in a day care procedure with short acting LA such as chloroprocaine (CP) fits into the same category to an extent providing hemodynamic stability and quick recovery leading to short duration of hospital stay.\(^5\) CP is an amino-ester LA with a very short half-life.\(^6\) It was introduced and has been successfully used for spinal anaesthesia since 1952.\(^7,8\) The onset of action is rapid (6-12 minutes) and duration depends on amount used and route (up to 100 minutes). It is eliminated from CSF entirely by diffusion. GA can be associated with complications and most clinicians perform procedures on uterine cavity under LA or spinal anaesthesia rather than GA. Overall, the choice of anaesthetic technique is generally depends on the surgeon, the anaesthesiologist and the patient.\(^9\)

METHODS

We conducted a prospective 2 months observational study on 80 patients undergoing D&C. Permission from institutional ethical committee was obtained and this study was conducted among the gynaecologists, anaesthetists, operation theatre (OT) technicians and nursing staff of government medical college Kathua and Jammu. Individual written informed consent was obtained. Patients with contraindication for outpatient surgery, drug sensitivity, ASA 3 & 4 and emergency cases were excluded from the study. The following parameters of the patients were recorded: age, ASA state, height and weight. Patient was asked to void before surgery. The baseline values of heart rate (HR) in beats per minute (bpm), partial pressure of oxygen (SpO\(_2\)) in percentage (%), and blood pressure (BP) in mm of hg was recorded. A peripheral intravenous catheter was inserted. Patients in CP group were preloaded with crystalloid @ 7 ml/Kg. Patients were premeditated with inj. Midazolam 0.5 mg intra venously (iv) and inj. ondansetron 4 mg iv.

HR and SpO\(_2\) were measured continuously while BP monitoring was done at the interval of 5 minutes during the procedure and at 15 minutes interval in post anaesthesia care unit (PACU).

SAB was performed in 40 patients at L4-L5 intervertebral space with patients in lateral position with midline approach and using 27 G Quincke needle. After verifying free flow of clear CSF 40 mg of CP 1% was injected in space at the rate of 0.2 ml/sec. Patient were placed in lithotomy position after 6 minutes. GA was given to another 40 patients using inj. Propofol 2 mg/kg iv and rest as required. Inj. Fentanyl 1 microgram / kg iv, oxygen and nitrous oxide through mask. Patients were on spontaneous ventilation throughout the procedure. Post operatively all the patients were shifted to the post anaesthesia care unit (PACU) for observation. Here they received iv infusion of inj. paracetamol 1 gram. Post-operative nausea and vomiting was treated with inj. ondansetron. Discharge criteria in our patients included return of sensory level at S4-5 dermatome, Bromage scale equivalent to preoperative level and adequate return of proprioception on standing\(^10,11\) in CP group. In GA group, patients were accessed by giving verbal commands and colour of the patient.

RESULTS

A total of 80 patients were included. 40 were given SAB using CP 1% and 40 were given GA. Mean age of the patient was 33.40±7.34 years with height of 152.95±8.99 cms and weight of 60.93±14.08 kgs (Table 1). ASA status were comparable in both the groups. Analysis of baseline demographic data did not show any significant differences between groups (Table 1). The HR in the SAB group was mean of 81.85±13.60 at induction and 76.68±12.28 at the end of 20 min whereas, the heart rate of GA group was 83.18±19.09 at induction and 92.33±20.59 at 20 min (Table 2). The P obtained was 20.001, which is significant (Table 2). The systolic blood pressure in SAB group was 122.90±10.43 at induction and 115.63±9.79 at 20 mins (Table 2). The GA group had a mean SBP of 130.75±18.88 at 0 min and 128.98±18.58 at 20 mins (Table 2). P was significant (Table 2). The DBP was 76.63±5.86 in SAB group at 0 min and 73.25±5.07 at 20 mins (Table 2). The GA group had a DBP of 79.35±6.89 at 0 mins and 78.68±10.11 at 20 mins with significant P (Table 2). Oxygen saturation and RR in SAB group was 99.05±0.6 and 99.23±0.58 at 0 min and 13.16±1.40 at 20 mins. (Table 3). Oxygen saturation and RR in GA group was 98.98 ± 0.98 and 16.95±2.80 at 0 min and 96.43±4.06 and 19.90±2.90 at 20 mins which is significant in both the groups (Table 3).

The incidence of post-operative complications like nausea /vomiting/giddiness and delirium was nil in SAB group, while in GA group 13 cases had nausea, 11 had giddiness, 14 complained of pain, and 9 had delirium (Table 4). No patients in our study complained of PDPH. Time of first rescue analgesia used in both groups had a significant P of 0.014 (Table 5). The group receiving SAB with 1% CP needed analgesia immediately postoperatively. The total
amount of postoperative analgesia used in SAB group was more than in GA/ sedation group (Table 5).

### DISCUSSION

In the recent years the number of surgical procedures performed on an ambulatory basis has increased worldwide. Spinal anaesthesia is a safe and reliable technique for lower abdominal and lower limb surgeries. The recent reintroduction of intrathecal CP may offer a solution in the ambulatory setting with a fast profile. There has always been a debate on the preference of local/spinal/ GA for D & C. GA is recommended for D & C but it is not very safe.

Hypoventilation in non-intubated women and cardio respiratory arrests of the unknown cause is major cause of deaths in D & C patients. Poly pharmacy and airway manipulation is a major concern. SAB using CP 1%, has quicker onset and better for the patients but this method fails to give a good post-operative analgesia. Cost effectiveness makes it a better option than GA. Mehta et al. in a study of 60 patients, found better post-operative analgesia in spinal anaesthesia group in comparison to GA group but in our study, as we have used a short acting agent, has found that post-operative analgesia was better with patients receiving GA. In our study we found that post-operative complications were nil in SAB group as compared to GA group. There was no incidence of post-operative nausea, vomiting, giddiness and delirium in patients receiving SAB. Elkanah Avodele Orimolade, Simeone Olugbade Olateju et al. studied 105 patients for the incidence of PDPH after spinal anaesthesia using smaller gauge needle and concluded that the duration of recumbency after spinal anaesthesia does not influence the incidence of PDPH, hence keeping patient in supine for prolonged period after spinal anaesthesia may not be necessary. We found no significant difference regarding recovery, length of stay and degree of satisfaction in both groups. We found operative thermodynamics to be more stable in patients receiving SAB.

**REFERENCES**


