

A Comparative Study on the Effectiveness of Paracervical Block and Diclofenac Versus Paracervical Block and Pentazocine for Analgesia During Manual Vacuum Aspiration

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ABSTRACT

Management of incomplete abortion with the use of manual vacuum aspiration is associated with pain. A good pain relief option is necessary during the procedure to improve the outcome and increase patients' satisfaction. The study was aimed at determining and comparing the effectiveness of combining paracervical block with pentazocine and paracervical block with diclofenac as pain relief during manual vacuum aspiration for first-trimester incomplete abortion. This study

involved 100 eligible women with the diagnosis of first-trimester incomplete abortion. Half of the participants were given paracervical block and intramuscular pentazocine 60 mg stat while the other half were given paracervical block and intramuscular diclofenac 75 mg stat before the manual vacuum aspiration procedure. The intensity of pain during the procedure was assessed using the Visual Analogue Scale (VAS). The level of significance was set at p value <0.05 . The mean pain intensity was significantly higher in the diclofenac group than in the pentazocine group. From the study it was concluded that intramuscular pentazocine used as an adjunct to paracervical block during manual vacuum aspiration when compared to intramuscular diclofenac as an adjunct to paracervical block was found to be a more effective method of pain relief. The patient's level of satisfaction was same in both study arms. However, participants in the pentazocine arm had more side effects.

Keywords: Diclofenac, pentazocine, manual vacuum aspiration.

INTRODUCTION

Abortion and its complications constitute a major health challenge especially in sub-Saharan Africa due to restrictive abortion laws and poor economic resources [1]. It contributes significantly to maternal morbidity and mortality in developing countries [2]. Globally, the annual maternal deaths from abortion complications are between 4.7 to 13.2% [3]. In Nigeria the incidence of abortion is estimated to be 25 per 1,000 women in the reproductive age [4] and abortion-related deaths accounted for 9.6 to 21.1% of all maternal deaths [5]. It is believed that if post-abortion care services can be instituted systematically at all levels of the health care system, it will lead to a remarkable reduction in maternal mortality and morbidity associated with abortion [6].

Studies have shown that manual vacuum aspiration is the most commonly used technique in evacuating products of conception from the uterine cavity following the first-trimester incomplete abortion [7]. It is the most effective technique, it is cheap, safe, fast and the duration of hospital stay is shorter following the procedure [5,7]. The success rate of the procedure is very high, achieving close to 99% uterine evacuation in a single encounter [8].

The major sources of discomfort and pain during manual vacuum aspiration have been attributed to anxiety, cervical pain due to dilatation of the cervix, uterine cramping as a result of manipulation [6]. As high as 97% of women report moderate to severe pain during and after the procedure and thus reduces patients' cooperation [5]. Consequently, adequate pain management is necessary during the process of manual vacuum aspiration to make the patient as comfortable as possible while minimizing medication-induced risk to her health and side effects [7].

Pain management during manual vacuum aspiration procedures includes local anaesthesia, general anaesthesia, sedation, and non-pharmacological methods of pain control [9,10]. World Health Organization (WHO) recommends the use of combined paracervical block with pre-procedure Non-steroidal anti-inflammatory drugs for pain control during manual vacuum aspiration. This method has the advantage of avoiding the complication of general anaesthesia for the same procedure [11]. In many institutions in Nigeria including ours, intramuscular diclofenac and pentazocine are used commonly and more recently in combination with the

paracervical block using 1% lidocaine as a form of pain control. Recent studies have shown that the use of combined analgesia when compared with single-agent analgesia use during manual vacuum aspiration procedure reduces pain markedly with a good safety profile and better patient satisfaction [5]. Therefore, this study compared the effectiveness of paracervical block and injection pentazocine versus paracervical block and injection diclofenac in providing suitable pain relief during the manual vacuum aspiration procedure.

This study is justified for the reasons below. The process of abortion and the use of manual vacuum aspiration causes pain and every woman who goes through this process deserves to go through it without pain. In the quest for effective analgesia during manual vacuum aspiration, the WHO has recommended the use of combined paracervical block with local anaesthesia and pre-procedure non-steroidal anti-inflammatory drugs for pain control during manual vacuum aspiration as this has been shown to provide better pain relief during the procedure. The supplies of these medications could vary from one locality to the other and therefore the Non-steroidal anti-inflammatory drug recommended by WHO maybe sometimes unavailable. Other analgesics if proven to be effective will be an addition to the choices available for use. Based on available published studies, a comparative study on the effectiveness of paracervical block combined with pentazocine and paracervical block combined with diclofenac as analgesia during manual vacuum aspiration is sparse in Nigeria and particularly in the North-central region of the country. Thus, this study compared the effectiveness of the combination of the paracervical block with pentazocine injection versus paracervical block with diclofenac injection as pain relief during manual vacuum aspiration. The findings from the study will help in developing an institutional protocol to make the procedure for manual vacuum aspiration more tolerable to patients, thus ensuring a high degree of success during the procedure. This could ultimately contribute to a reduction in maternal morbidity and mortality resulting from complications of abortion in this environment.

MATERIALS AND METHODS

Study Setting

The study was conducted at the Department of Obstetrics and Gynaecology of Maitama District Hospital, Abuja, Nigeria. The hospital is located in the Maitama District of the Abuja Municipal Area Council. The hospital serves as a referral center to several private, primary health centers and other General Hospitals in the Federal Capital Territory (FCT) and other neighboring states such as Nassarawa, Niger, Kaduna and Kogi states. Maitama District Hospital serves as a training center for the provision of Post-abortal care amongst health workers in the FCT.

Study Design

This was a double-blind randomized control trial.

Study Population

The study consisted of consenting women diagnosed with first-trimester incomplete abortion who presented at the Gynaecological emergency at Maitama District Hospital of the FCT. The diagnosis was confirmed using both clinical assessment and ultrasound examination.

Women with first-trimester incomplete abortion who had the pregnancy confirmed clinically and by ultrasound and gave consent to participate in the study were included in the study. Other inclusion criteria were gestational age up to 12 weeks and/or uterine size less than 12weeks

gestation and haemodynamically stability. Exclusion Criteria used in the study were active infection (such as septic abortion), history of known allergies to lidocaine, pentazocine and diclofenac, history of psychiatric disorders and severe illnesses or co-morbidities such as uterine perforation, huge uterine fibroids and severe anaemia.

Sample Size Determination

This was determined using the formula for calculating the sample size for clinical equivalence study, mean difference in pain scores between two independent groups from a past study [5], the standard deviation of pain score from the above study, standard normal deviate at 95% confidence interval and power of the study at 90%. A 10% attrition rate was used as well. The total sample size for this study was rounded off to 100 for both study arms.

Blinding

This was a double-blind study where the participants and the researcher were not aware of which drug was administered. The blinding was carried out by the hospital Pharmacist who did the drug preparation and concealment. The pentazocine and the diclofenac were prepared and packed in 5ml syringes. The content of drugs in the 5ml syringes was concealed by an opaque tape which makes it impossible for the participants and researcher to know what each 5ml syringe contains. Only the pharmacist knew the content of A or B which was only revealed to the researcher after data collection and analysis. The concealed drug was packed in brown envelopes which were labelled 'A' or 'B' by the Pharmacist. After this was done, the research assistant administered the drugs as assigned. The route of administration for both the pentazocine and diclofenac was the same (intramuscular).

Randomization

Randomization was performed using WINPEPI computer software. One hundred participants were randomly allocated to two equal groups – Groups 'A' and 'B'. One of the Groups was the diclofenac group while the other was the pentazocine group. The allocation of the diclofenac and pentazocine group into either Group 'A' or 'B' was carried out by the Pharmacist in charge of packaging and concealment. However, the diclofenac group received paracervical block using 20 ml of 1% lidocaine, up to a maximum dose of 4.5mg/kg; and a single dose of intramuscular diclofenac (Voltaren®) 1mg/kg body weight; up to a maximum dose of 75mg amounting to 3 ml, while the pentazocine group received paracervical block using 20 ml of 1% lidocaine, up to a maximum dose of 4.5mg/kg; and a single dose of intramuscular pentazocine (Fortwin®) 1mg/kg body weight; up to a maximum dose of 60mg per dose, amounting to 2 ml.

Study Protocol

Awareness about this study was created among hospital staff in the department of Obstetrics and Gynaecology of the Maitama District Hospital. Upon presentation at the Gynaecological emergency, each participant was given detailed information regarding the study and voluntary participation was emphasized. Eligible consecutive consenting patients were recruited into the study until a total of a hundred women were recruited for the study. Written informed consent for each woman was obtained. The participants were recruited once they gave consent to participate in the study. At enrollment, they were randomly allocated to either group A or B according to the Randomization schedule. The numbers corresponding with the alphabets were placed in an opaque box. The number each of the participants picked determined the group they belonged. With the aid of a questionnaire, the socio-demographic characteristics and

Gynaecological history were obtained. The intramuscular analgesics (pentazocine or diclofenac) were given. The paracervical block was performed. About 20 ml of 1% lidocaine was used for the procedure, Two millimeters of lidocaine was injected into the anterior lip of the cervix at 12 o'clock position after aspirating to avoid injecting into the blood vessel). About 4.5 ml of lidocaine was injected slowly into the cervico-vaginal junction just under the epithelium to a depth of 3cm at 2, 4, 8 and 10 o'clock positions while aspirating to avoid injecting into the blood vessel.

Manual vacuum aspiration was then performed according to departmental protocol. Side effects of the medications such as nausea, vomiting, headache among others were sought for and the response was recorded on a questionnaire. Patients who developed nausea and vomiting following administration of Pentazocine were given intramuscular metoclopramide 10mg stat.

The visual analogue scale was applied to assess pain intensity about 5 minutes after completion of the manual vacuum aspiration procedure. Patient's satisfaction was assessed using a Likert scale before discharge from the manual vacuum aspiration room. The vital signs of the patients were monitored every fifteen minutes for one hour, until the patient is stable. Samples were inspected and sent for histology.

Method of Pain Assessment

The pain experienced by each patient during the procedure was assessed using the pain rating scale (visual analogue scale) about five minutes following the procedure. The visual analogue scale was a continuous uni-dimensional measure of pain intensity scale comprised of 10cm line that represents a continuum between the two ends of the scale – “no pain” on the left end (0cm) of the scale and the “worst pain” on the right of the scale (10cm). It was self-completed by the patient who was asked to place a mark on one point along the length of the VAS line at the point that represents their pain intensity. The pain score was determined by measuring the distance (in cm) on the 10cm line from the starting point (left end) of the scale to the patient's mark with a ruler. The pain score took a value ranging from 0-10cm.

Outcome Measures

In this study, the Primary outcome measure evaluated was the intensity of pain using VAS score immediately after uterine evacuation in women with first-trimester incomplete abortion at Maitama District Hospital of the Federal Capital Territory while the secondary outcome measures included patient's satisfaction and side effects of the drugs.

Data Collection

This was done using an interviewer-administered questionnaire which was completed by the researcher and trained research assistants in the Gynaecological emergency. The questionnaire was divided into four sections; Section one explored socio-demographic/ Gynaecological variables, Section two recorded the intensity of pain perceived by the patients using the visual analogue scale, Section three assessed patient's satisfaction and the last section investigated side effects. The questionnaire had the patient's enrollment number and hospital number for ease of identification.

DATA ANALYSIS

Data was entered and analyzed using the Statistical Package for Social Sciences, IBM SPSS Statistics for Windows, version 25.0 (IBM Corp, Armonk, N.Y, USA). Results were presented as frequencies and percentages for categorical variables (age group, religion, level of education, and occurrence of previous abortion, previous manual vacuum aspiration, level of satisfaction and the occurrence of side effects), while means with standard deviations summarized continuous variables like age and pain intensity score assessed by VAS. Tables and figures were used to presents results as appropriate. The Chi-square test investigated the difference in the distribution of categorical variables between the 'Pentazocine' and 'Diclofenac' groups. The differences in the number of previous manual vacuum aspirations, the number of previous abortions, and parity between women in the two groups were explored using the Mann-Whitney U test (non-parametric statistical test of significance), while with the Student-t test the difference between the mean pain intensity scores of the two groups was investigated. The level of significance was set at < 0.05 .

ETHICAL CONSIDERATIONS

Ethical clearance was sought and obtained from the Health Research Ethics Committee of the Health and Human Services Secretariat of the Federal Capital Territory, Abuja. The following ethical issues were put into consideration;

RESULTS

Sociodemographic Variable and Gynaecological Characteristics of Participants

Sociodemographic variables of participants

As in Figure 1, a total of 118 women were assessed for enrollment in the study. A total of 100 were recruited and completed the study, 50 women each were allocated to each study group by randomization following the randomization schedule generated by WINPEPI software. Of the 18 women assessed for eligibility 6 women declined participation while 12 were excluded for not meeting the eligibility criteria. In the end, only complete data from 100 women were analyzed with 5 (5.0%) being teenagers, while 49 (49.0%) and 46 (46.0%) were in the third and fourth decade of life, respectively (Table 1). The majority were Christians (75.0%), with tertiary education (47.0%) and engaged in personal business as a source of livelihood (39.0%). The mean age of women in the 'Pentazocine' group was 28.6 ± 4.9 years. While the average age for women in the 'Diclofenac group' was 28.5 ± 6.6 years. There was no significant difference ($p = 0.986$) in the ages of women in the two study groups. The distribution of participants to the age groups also showed no significant difference between the study groups ($p = 0.896$). Concerning educational attainment, the distribution of women in the study groups was not significantly different ($p = 0.176$). Table 1 also reveals that the distribution of women with respect to their occupation, followed a similar trend, women in the 'Diclofenac' group were essentially similar to women in the 'Pentazocine' group ($p = 0.274$).

Table 1: Sociodemographic variable of participants

Characteristics	Total	Pentazocine Group	Diclofenac Group	Test of Significance	p-Value
	N=100 (%)	N = 50 (%)	N = 50 (%)		
Age group				0.22 ^a	0.896
< 20 years	5 (5.0)	3 (6.0)	2 (4.0)		
20 – 29 years	49 (49.0)	24 (48.0)	25 (50.0)		
≥ 30 years	46 (46.0)	23 (46.0)	23 (46.0)		
Mean Age ± SD in years	28.6 ± 5.7	28.6 ± 4.9	28 ± 6.6	0.02 ^b	0.986
Religion				1.33 ^c	0.248
Christianity	75 (75.0)	40 (80.0)	35 (70.0)		
Islam	25 (25.0)	10 (20.0)	15 (30.0)		
Level of Education				4.95 ^a	0.176
No formal education	7 (7.0)	3 (6.0)	4 (8.0)		
Primary Education	8 (8.0)	3 (6.0)	5 (10.0)		
Secondary Education	38 (38.0)	24 (48.0)	14 (28.0)		
Tertiary Education	47 (47.0)	20 (40.0)	27 (54.0)		
Occupation				3.89 ^c	0.274
Civil servant	17 (17.0)	11 (22.0)	6 (12.0)		
Business	39 (39.0)	19 (38.0)	20 (40.0)		
Artisan	16 (16.0)	5 (10.0)	11 (22.0)		
Unemployed	28 (28.0)	15 (30.0)	13 (26.0)		

^aFisher's exact test; ^bStudent's t-test; ^cChi-square test

Gynaecological characteristics of participants

Table 2 shows that majority of women in the study were nulliparous women (56.0%). Though more women were nulliparous in the 'Pentazocine' group (64.0%) than in the 'Diclofenac' group (48.0%), the difference between the groups was not significant statistically ($p = 0.095$). The parity of women in the two study groups ranged between 0 and 4, however, the median parity of women in the 'Pentazocine' group is 0, while in the 'Diclofenac' group it was 1. The Mann-Whitney U test ($p = 0.547$) shows that the difference in the mean rank of parity between the two groups was not significant (Table 2).

The median gestational age for the participants in the 'Pentazocine' group was 8 weeks with a range between 6 and 11 weeks, participants in the 'Diclofenac' group had gestational age ranging from 5 to 11 weeks with a median of 7 weeks. The difference was not significant statistically ($p = 0.705$). The number of the previous abortion ($p = 0.133$) and previous manual vacuum aspiration ($p = 0.159$) that participants had experienced in the two study groups were not different significantly (Table 2).

Table 2: Gynaecological characteristics of participants

Characteristics	Total N = 100 (%)	Pentazocine Group N = 50 (%)	Diclofenac Group N = 50 (%)	Test of Significance	p-Value
Parity					
Nulliparous women	56 (56.0)	32 (64.0)	24 (48.0)	4.68 ^a	0.095
Primiparous women	18 (18.0)	5 (10.0)	13 (26.0)		
Multiparous women	26 (26.0)	13 (26.0)	13 (26.0)		
Median Parity (Range)	0 (0 – 4)	0 (0 – 4)	1 (0 – 4)	1329.0 ^b	0.547
Gestational Age					
5 – 8 weeks	49 (49.0)	24 (48.0)	25 (50.0)	0.04 ^a	0.841
9 – 11 weeks	51 (51.0)	26 (52.0)	25 (50.0)		
Median gestational age (Range)	10 (5 – 11)	8 (6 – 11)	7 (5 – 11)	1195.0 ^b	0.705
Previous abortion					
No previous abortion	46 (46.0)	28 (56.0)	18 (36.0)	4.04 ^a	0.133
1 previous abortion	47 (47.0)	19 (38.0)	28 (56.0)		
>1 previous abortion	7 (7.0)	3 (6.0)	4 (8.0)		
Median previous abortion (Range)	1 (0 – 5)	0 (0 – 2)	1 (0 – 5)	1500.5 ^b	0.053
Previous MVA					
No previous MVA	57 (57.0)	33 (66.0)	24 (48.0)	3.68 ^c	0.159
1 previous MVA	39 (39.0)	16 (32.0)	23 (46.0)		
>1 previous MVA	4 (4.0)	1 (2.0)	3 (6.0)		
Median Previous MVA (Range)	0 (0 – 3)	0 (0 – 2)	1 (0 – 3)	1488.5 ^b	0.059

^aChi-square test; ^bMann-Whitney U test, ^cFishers' exact.

The Intensity of Pain during Manual Vacuum Aspiration in Women with First-Trimester Incomplete Abortion

The intensity of pain during manual vacuum aspiration as indicated on the visual analogue scale was low in the study population. The mean value on the visual analogue scale is 2.96 ± 2.46 cm for the total population. However, the intensity reported among participants in the 'Diclofenac' group (Mean = 4.16 ± 2.64 cm) was significantly ($p = 0.001$) higher than that reported among participants in the 'Pentazocine' group (mean = 1.76 ± 1.55 cm) as shown in Table 3, Figure 2.

From the above, the first hypothesis with a null hypothesis that "there is no difference in the intensity of pain during MVA in women with first-trimester incomplete abortion receiving paracervical block combined with pentazocine and paracervical block combined with diclofenac" with an alternate hypothesis that stated "there is a difference in the intensity of pain during MVA in women with first-trimester incomplete abortion receiving paracervical

block combined with pentazocine and paracervical block combined with diclofenac” has been tested. Based on the finding of significant different ($p = 0.001$) between the two groups, the null hypothesis is rejected. Hence paracervical block combined with pentazocine leads to a significantly lower intensity of pain during MVA in women with first-trimester incomplete abortion.

Table 3: Summary statistics of the visual analogue scale measurements (Scores) in the study groups

Characteristics	Total N = 100	Pentazocine Group N = 50	Diclofenac Group N = 50	Student t-test	p-Value
Visual analogue Score Mean $\pm$ SD (cm)	2.96 $\pm$ 2.46	1.76 $\pm$ 1.55	4.16 $\pm$ 2.64	5.52	0.001*

***Statistically significant; SD – Standard Deviation**

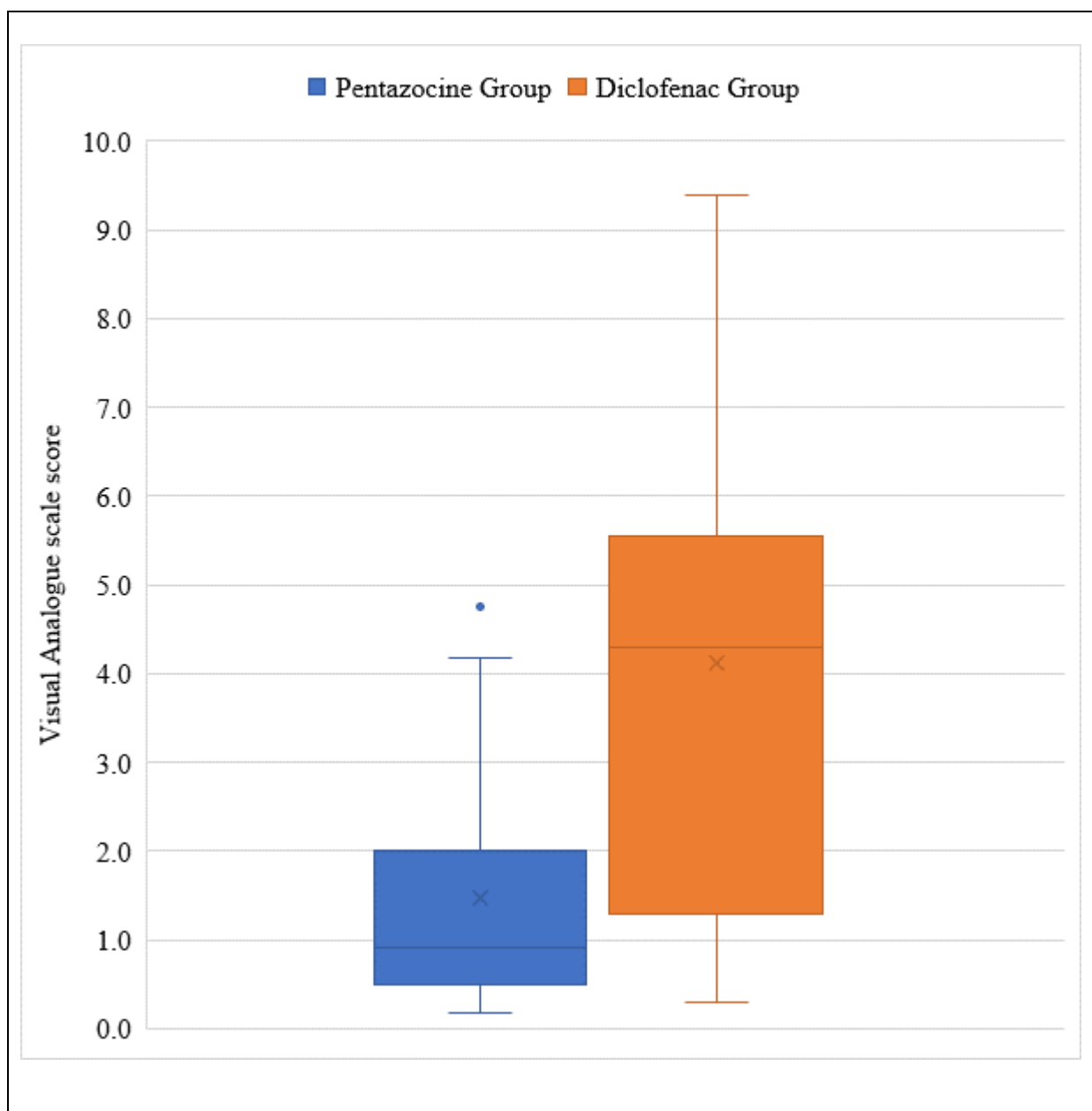


Figure 2: Box and whisker showing the visual analogue score. Group A is the Pentazocine group while Group B is the Diclofenac group.

The Level of Satisfaction with Pain Relief during MVA among Women with First-Trimester Incomplete Abortion

The level of satisfaction with pain relief during manual vacuum aspiration was high. About 61.0% of the study population reported they were very satisfied with the pain relief they got from the pharmaceutical agents. Participants who were 'somewhat satisfied' were 30.0%, while 7 (7.0%) and 2 (2.0%) reported they were 'indifferent' and 'unsatisfied' respectively.

The level of satisfaction with pain relief reported by participants was not significantly different in the two groups ($p = 0.152$). While 68.0% and 24.0% of participants in the 'Pentazocine' group

said they were 'very satisfied' and 'somewhat satisfied' respectively, 54.0% and 36.0% reported 'very satisfied' and 'somewhat satisfied' respectively in the 'Diclofenac' group (Table 4).

The result of no significant difference ($p = 0.152$) between the pentazocine group and the diclofenac group with respect to the level of satisfaction meant that we failed to reject the null hypothesis 2, hence there is no difference in the level of satisfaction with pain relief during MVA in women with first-trimester incomplete abortion receiving paracervical block combined with pentazocine and paracervical block combined with diclofenac.

Table 4: Participants' level of satisfaction with pain relief

Characteristics	Total N = 100 (%)	Pentazocine Group N = 50 (%)	Diclofenac Group N = 50 (%)	Test Significance	of p- Value
Level of Satisfaction					
Very satisfied	61 (61.0)	34 (68.0)	27 (54.0)	5.29 ^a	0.152
Satisfied	30 (30.0)	12 (24.0)	18 (36.0)		
Indifferent	7 (7.0)	2 (4.0)	5 (10.0)		
Unsatisfied	2 (2.0)	2 (4.0)	0 (0.0)		

^aFisher's exact

The Side Effects of the Medications during MVA in Women with First-Trimester Incomplete Abortion

Side effects were observed in 51 participants (51.0%), while 49 (49.0%) did not experience any side effects (Table 5). Of the 51 participants that reported side effects, 41 participants were in the 'Pentazocine group' making up 82.0% of that group, 10 were from the 'Diclofenac' group which translated to only 20.0% of the 'Diclofenac' group. The occurrence of side effects in the two study groups was significantly different ($p = 0.001$), with side effects occurring more in the 'Pentazocine' group (Table 5).

The most common side effect was dizziness (39.0%). Other side effects include headache (4.0%), nausea (5.0%), vomiting (3.0%), and tinnitus (1.0%). While all participants who complained of headache (8.0%) and tinnitus (2.0%) were in the 'Diclofenac' group, nausea (10.0%) and vomiting (6.0%) were reported only among women in the pentazocine group of the study. Table 5 showed the occurrence of dizziness ($p = 0.001$), was significantly more frequent in the 'Pentazocine' group (68.0%) than in the 'Diclofenac' group (10.0%).

The third null hypothesis for the study which stated there is no difference in the side effects of the drugs during MVA in women with first-trimester incomplete abortion receiving paracervical block combined with pentazocine and paracervical block combined with diclofenac was rejected since the report of side effects of medication was significantly different ($p = 0.001$) among women in both groups.

Table 5: Side effects of medication among study participants

Characteristics	Total N = 100 (%)	Pentazocine Group N = 50 (%)	Diclofenac Group N = 50 (%)	Test of Significance	p-Value
Side effect reported					
Yes	51 (51.0)	41 (82.0)	10 (20.0)	38.45 ^a	0.001*
No	49 (49.0)	9 (18.0)	40 (80.0)		
Headache					
Yes	4 (4.0)	0 (0.0)	4 (8.0)	4.17 ^b	0.117
No	96 (96.0)	50 (100.0)	46 (92.0)		
Dizziness					
Yes	39 (39.0)	34 (68.0)	5 (10.0)	35.35 ^a	0.001*
No	61 (61.0)	16 (32.0)	45 (90.0)		
Nausea					
Yes	5 (5.0)	5 (10.0)	0 (0.0)	5.26 ^b	0.028*
No	95 (95.0)	45 (90.0)	50 (100.0)		
Vomiting					
Yes	3 (3.0)	3 (6.0)	0 (0.0)	3.09 ^b	0.242
No	97 (97.0)	47 (94.0)	50 (100.0)		
Tinnitus					
Yes	1 (1.0)	0 (0.0)	1 (2.0)	1.01 ^b	1.000
No	99 (99.0)	50 (100.0)	49 (98.0)		

*Statistically significant, ^aChi square test, ^bFisher's Exact Test

DISCUSSION

This study was a randomized controlled trial that determined and compared the effectiveness of combining paracervical block and pentazocine versus paracervical block and diclofenac for pain relief during manual vacuum aspiration for first-trimester incomplete abortion. Visual Analogue Scale (VAS) was used for the patient-reported pain assessment. The patients' level of satisfaction and the drugs' side effects were determined.

In this study, participants in the 'Pentazocine' group had more pain relief compared to those in the 'Diclofenac' group. Perhaps, this finding could be due to the fact that pentazocine being an opioid, had a better analgesic profile compared to diclofenac which is an NSAID. This might also have been due to the fact that our participants presented with an acute condition that does not require much of the anti-inflammatory effect of diclofenac. The pain from MVA is as a result of manipulating the cervix and suctioning of the uterus which is usually for a short duration and therefore Pentazocine which mediates its analgesic effect in the central nervous system is more effective for MVA analgesia as compared with diclofenac which carries out its analgesic actions through anti-inflammatory pathways. This finding is similar to that of Mahapatra et al [12], where pentazocine was found to be significantly better than diclofenac for pain relief among patients with acute pancreatitis in India. However, their study was probably not powered

enough for the primary outcome measured since a small sample size was used with an imbalance in the two arms.

Conversely, Nwagwu et al [13] in Abakaliki reported that diclofenac provided longer-lasting analgesia than pentazocine in post caesarean section patients. This is probably because the analgesic action of diclofenac is complemented by its anti-inflammatory effects since there was more tissue manipulation and a longer duration of surgery in the caesarean section compared to MVA. Additionally, the non-significance in the reported patients' characteristics, baseline haemodynamic variables and participant's reported level of satisfaction is an indication that randomization of participants was not successful in their study. More so, there was absence of baseline VAS scores and subarachnoid block was given to participants before administration of study drugs in the Abakaliki study while paracervical block was administered in this study. Perhaps, individual differences in drug handling among study participants might have resulted from the genetic polymorphism affecting the opioid receptors thus tilting drug action in favour of the antagonism tendency of pentazocine.

Although more participants in the pentazocine group experienced better satisfaction compared to the diclofenac group in this study, the participants' reported level of satisfaction was not significantly different between the two groups. This may be linked to the higher side effects reported for the pentazocine group. Although age and parity may influence pain perception among obstetric patients,⁵ the confounding effects of these variables were not likely in the present study since there was no statistically significant difference in the reported participants' characteristics was not significant. In the study by Nwagwu et al, the level of patient satisfaction was not statistically compared between the two groups, however, it was similarly distributed between the two groups. Probably combining the drugs for pain care may reduce these side effects and effectiveness of pain management as reported in the study by Natalia et al [5] and Egede et al [14].

In this study, pentazocine appeared to have more side effects than diclofenac which is in disparity to the findings by Mahapatra et al probably because the diclofenac group required more rescue analgesic (fentanyl patient-controlled analgesia) compared to the pentazocine group. In the study by Nwagwu et al, the differences in the side effects between the diclofenac and pentazocine groups was not significant except for the decrease in systolic blood pressure at 30 minutes after study intervention. Additionally, the fact that the time to first analgesic request was reported without a report of total analgesic consumed in both groups may make it difficult to explain the higher level of side effects in the diclofenac group. Importantly, there were no major side effects in either of the groups in this study. Pentazocine (being an opioid) has been shown to have more side effects such as dizziness and nausea compared to diclofenac, as was similarly reported in this study.⁵ Majority of the participants in the pentazocine group had side effects to the drug, experiencing significantly more dizziness and nausea than participants in the diclofenac group.

CONCLUSION

In this study, while comparing adjuncts to paracervical block during manual vacuum aspiration, intramuscular pentazocine appears to be a more effective method for pain relief than intramuscular diclofenac. While patients' satisfaction was similar in both groups, participants in the Pentazocine group experienced more side effects.

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