

Lidocaine for Pain Control during Intrauterine Device Insertion

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Abstract

Long-acting reversible contraception methods, such as intrauterine devices (IUDs), are associated with high effectiveness in preventing unintended pregnancies, and thereby their significant health and economic consequences. IUCD insertion is generally associated with fear, which may decrease its acceptability, and anticipated pain or discomfort at the time of insertion could be a major barrier to the acceptance of IUCDs among both clients and healthcare providers. IUCD. Insertion pain may be felt during various stages of the procedure, including the vaginal examination, placement of the speculum, tenaculum use, and traction of the uterus, hysteroscopy and insertion of the IUCD. On assess the viability of lidocaine former will iud insertion clinched alongside lessening torment contrasted with placebo. This will be An randomized control study; toward gynecology outpatient facility in Benha college healing facility Also Berket elsabee doctor's facility from january should june 2018. Partitioned under two aggregations; bunch A: ponder gathering of 75 cases, utilization lidocaine spread. Aggregation B: control assembly for 75 cases, utilization saline spread. Examination of Information uncovered that lidocaine spread requisition of the cervix Throughout IUCD insertion adequately diminished ache felt Throughout the the sum phases of the procedure Furthermore agony felt 5 minutes then afterward the entire methodology. There might have been secondary huge distinction the middle of lidocaine aggregation What's more control assembly viewing agony score Throughout tenaculum placement 1. 82±0. 84Vs4. 10±1. 00, heartless insertion, 1. 32±0. 87 vs 2. 49±1. 13, iud insertion, 0. 85±0. 80 vs1. 36±1. 05 Furthermore five minutes' post insertion 0. 53±0. 77vs0. 78±0. 77. They were the greater part more level On lignocaine assembly over control bunch (P worth 0. 001). Our examine showed that nearby lidocaine spread is compelling for control for ache connected with IUCD insertion when compared placebo aggregation. **Keywords:** contraception, hysteroscopy, IUCD, lidocaine, pregnancies and vaginal

1.Introduction

Contraception Furthermore fruitfulness control may be An system or gadget used to forestall pregnancy, conception prevention need been utilized since aged times, At successful Furthermore safe systems from claiming conception prevention just turned into accessible in the twentieth century. Planning, making accessible and utilizing conception prevention is known as family arranging. A few societies breaking point alternately dishearten right with conception prevention Since they think about it on make morally, religiously, alternately politically undesirable. [1].

Those present intrauterine units (IUD) need aid little devices, frequently all the 'T'- shaped, holding Possibly copper or levonorgestrel, which are embedded under those uterus. They need aid you quit offering on that one structure for long-acting reversible contraception which need aid the A large portion powerful sorts of reversible conception prevention [2].

Disappointment rates for the copper iud is around 0. 8% same time the levonorgestrel iud need a disappointment rates from claiming 0. 2% in the principal quite a while of use, Around sorts of conception control, they, alongside conception prevention implants, bring about those best fulfillment "around users, Likewise about 2007, IUDs would the A large portion generally utilized type of reversible contraception, for more than 180 million clients overall [3].

IUDs don't influence breastfeeding and could a chance to be embedded promptly then afterward delivery, they might additionally make utilized promptly after a abortion, once removed, Indeed going after long expression use,. Fruitfulness returns will typical promptly [4].

Copper IUDs might build menstrual dying Furthermore bring about a greater amount frightful cramps [5]. Hormonal IUDs might diminish menstrual dying

alternately stop monthly cycle inside and out , cramping might make treated with painkillers in non-steroidal mitigating medications , other possibility difficulties incorporate removal (2-5%) Furthermore infrequently puncturing of the uterus (less over 0. 7%) ,a past model of the intrauterine gadget (the Dalkon shield) might have been connected with an expanded hazard from claiming pelvic incendiary disease, however the danger is not influenced with current models On the individuals without sexually transmitted infections around those duration of the time about insertion [6].

2.Subjects and Methods

This is a randomized control study; during gynecology outpatient facility over Benha school clinic Furthermore Berket elsabee clinic from january with june 2018. Separated under two aggregations; bunch A: study one assembly from claiming 75 cases, use lidocaine spread. Aggregation B: control bunch for 75 cases, utilize saline shower.

Consideration Criteria: Age:20-45 years, Parity: parous women, Timing: post menstrual (post abortion Toward person week) alternately postpartum (after puerperium 6 weeks), Not bringing analgesics (acetaminophen, ibuprofen, mefenamic acid) hours in the recent past confirmation 4 – 6, Absence from claiming narcotic use, 24 hours in front of admission, no history from claiming extreme mental anxiety in the secret word two months.

Avoidance Criteria: uterine fibroid for twisting of the cavity, anatomic abnormality for twisting of the cavity, present pelvic incendiary disease, present purulent cervicitis (chlamydia or gonorrhoea), following septic abortion, referred to unfavorable susceptibility will lidocaine (pruritis, smoldering sensation, edema for cervix).

Intervention

All patients done complete clinical examination and detailed medical history was obtained. Each patient had a Case Record Form (CRF) in which the following data was recorded: Previous deliveries and abortions, Age, height and weight, Medications taken within the last 4 weeks and discontinued, Concomitant illnesses and Clinical examination; including general, abdominal and vaginal.

Patients were distributed equally into 2 groups by same doctor:

Group A: Study group of 75 cases use lidocaine spray.

Group B: Control group of 75 cases uses saline spray.

Lidocaine spray was sprinkled 4 puffs to the cervix prior to IUD insertion by 3 minutes, pain in three steps, after using tenaculum, after insertion of uterine sound and after insertion IUD was assessed with visual analog scale (VAS) and was compared in lidocaine group and placebo group.

Visual analogue scales (VAS) are psychometric response scales used to measure subjective characteristics or attitudes and have been used in the past for a multitude of disorders, as well as in market research and social science investigations, among others [3].

VAS were first described in 1921 and referred to at the time as a "graphic rating method", The initial publication, which covered no more than one page, was presented as a new method for management personnel to evaluate the workers assigned to them [3].

IUD Insertion Steps

1. Those supplier directed An pelvic examination will evaluate qualification. The supplier 1st carried those bimanual examination et cetera embedded An speculum under those vagina will investigate those cervix.
2. The supplier cleaned the cervix and vagina for suitable germicide.
3. The supplier connected those shower of the webpage for tenaculum connection of the cervix and cervical waterway.
4. Those supplier gradually embedded those tenaculum then afterward 3 minutes through the speculum Also close the tenaculum Exactly sufficient should delicately hold those cervix Also uterus enduring and agony might have been evaluated for vas What's more compared Previously, lidocaine gathering and placebo gathering.
5. The supplier gradually and delicately passed those uterine heartless through the cervix should measure the profundity and position of the uterus Also

torment might have been evaluated and compared clinched alongside lidocaine aggregation Furthermore placebo bunch.

6. Those suppliers gradually What's more delicately embedded the iud Furthermore uproot those inserter and ache might have been evaluated for vas Furthermore compared done lidocaine bunch Furthermore placebo assembly.
7. The supplier reduction those strings on the IUD, leaving 3 centimeters sticking out of the cervix.
8. Following those insertion, those lady stayed on the examination table regarding 5 minutes until she felt prepared will got dressed.

Statistical analysis

Data were collected, tabulated, statistically analyzed using an IBM personal computer with Statistical Package of Social Science (SPSS) version 22 (SPSS, Inc, Chicago, Illinois, USA).

3.Results

Table (1) There was no significant difference between studied groups regarding their age (P value >0.05).

Table (2) This table shows that: There was no significant difference between studied groups regarding their parity and gravidity (p value > 0.05)

Table (3) This table shows that: There was no significant difference between studied groups regarding number of normal vaginal deliveries (p value>0.05)

Table (4) This table shows that: There was no significant difference between studied groups regarding number of cesarean sections (p value >0.05).

Table (5) This table shows that: There was no significant difference between studied groups regarding number of previous abortions (p value >0.05)

Table (6) This table shows that: There was no significant difference between studied groups regarding their BMI and age of youngest child (p value > 0.05).

Table (7) This table shows that: There was no significant difference between studied groups regarding the interval from last menstrual period (p value > 0.05)

Table (8) This table shows that: There was high significant difference between lignocaine group and control group regarding pain score during tenaculumplacement 1.82 ± 0.84 vs 4.10 ± 1.00 , sound insertion, 1.32 ± 0.87 vs 2.49 ± 1.13 , IUD insertion, 0.85 ± 0.80 vs 1.36 ± 1.05 and five minutes post insertion 0.53 ± 0.77 vs 0.78 ± 0.77 . They were all lower in lignocaine group than control group (P value 0.001)

Table (1) Mean age of the studied groups (N=150).

Studied variable	Studied groups		t-test	P value
	Group I	Group II		
	Lignocaine group (N=75)	Control group (N=75)		
Age / years				
Mean \pm SD	27.4 \pm 4.61	26.8 \pm 4.31	0.749	0.455 (NS)
Range	18 - 39	19 - 36		

Table (2) Comparison between studied groups regarding their parity and gravidity (N=150).

Studied variable	Studied groups		Mann Whitney test	P value
	Group I Lignocaine group (N=75)	Group II Control group (N=75)		
Gravidity				
Mean \pm SD	3.12 \pm 1.51	2.92 \pm 1.29	0.583	0.560
Range	1 – 8	1 – 6		
Parity				
Mean \pm SD	2.22 \pm 0.87	2.20 \pm 0.86	0.148	0.883
Range	1 – 5	1 – 5		

Table (3) Comparison between studied groups regarding number of vaginal deliveries (N=150).

Studied variable	Studied groups		Test of significance	P value
	Group I Lignocaine group (N=75)	Group II Control group(N=75)		
Number of normal vaginal delivery				
Mean \pm SD	1.20 \pm 1.10	0.92 \pm 1.02	U= 1.60	0.109 (NS)
Range	0 – 4	0 – 5		
No vaginal delivery	26 (34.7)	33(44.0)	X2= 6.37	0.241 (NS)
1VD	19(25.3)	20(26.7)		
2 VD	21(28.0)	19(25.3)		
3 VD	7(9.30)	2(2.70)		
>3 VD	2(2.70)	1(1.30)		

Table (4) Comparison between studied groups regarding number of cesarean sections (N=150).

Studied variable	Studied groups		Test of significance	P value
	Group I Lignocaine group (N=75)	Group II Control group(N=75)		
Number of cesarean sections				
Mean \pm SD	1.00 \pm 1.01	1.28 \pm 1.07	U= 1.62	0.104 (NS)
Range	0 – 3	0 – 3		
No CS	30(40.0)	23(30.7)	X2= 2.99	0.393 (NS)
1 CS	23(23.7)	20(26.7)		
2 CS	14(18.7)	20(26.7)		
3 CS	8(10.7)	12(16.0)		

Table (5) Comparison between studied groups regarding number of previous abortions (N=150).

Studied variable	Studied groups		Test of significance	P value
	Group I Lignocaine group (N=75)	Group II Control group (N=75)		
Number of previous abortion				
Mean \pm SD	0.89 \pm 1.08	0.71 \pm 0.83	U= 0.845	0.398 (NS)
Range	0 – 5	0 – 3		
No abortion	34(45.3)	38(50.7)	X2= 0.667	0.667
▪ 1 abortion	23(30.7)	23(30.7)		

Table (5) Continue

▪ 2 abortions	14(18.7)	12(16.0)	2.37	(NS)
▪ 3 abortions	2(2.70)	2(2.70)		
▪ >3abortions	2(2.70)	0(0.00)		

Table (6) Comparison between studied groups regarding their BMI and age of youngest child (N=150).

Studied variable	Studied groups		Test of significance	P value
	Group I Lignocaine group (N=75)	Group II Control group (N=75)		
BMI				
Mean \pm SD	21.9 \pm 2.14	21.4 \pm 1.91	t-test	0.094
Range	18 – 27	18 – 26	1.68	(NS)
Age of youngest child				
Mean \pm SD	1.59 \pm 1.85	1.80 \pm 1.75	U	
Range	0.20 – 11	0.20 – 7.00	1.12	0.261 (NS)

Table (7) Comparison between studied groups regarding the interval from last menstrual period (days) (N=150).

Studied variable	Studied groups				X2	P value
	Group I Lignocaine group (N=75)		Group II Control group (N=75)			
	No.	%	No.	%		
Interval from last menstrual period (days)						
1 st day	4	5.30	4	5.30		
2 nd day	30	40.0	35	46.7		
3 rd day	22	29.3	25	33.3	2.71	0.439 (NS)
Lactational amenorrhea	19	25.3	11	14.7		

Table (8) Comparison between studied groups regarding pain scores (Visual analogue scale) (N=150).

Studied variable	Studied groups		Test of significance	P value
	Group I Lignocaine group (N=75)	Group II Control group (N=75)		
VAS tenaculum placement				
Mean \pm SD				
Range	1.82 \pm 0.84	4.10 \pm 1.00	U=	
▪ (0)None	0 – 4	2 – 7	9.81	(HS)
▪ (1-3) Mild	1(1.3)	0(0.00)		
▪ (4-6)Moderate	71(94.7)	19(25.3)	X2	
▪ (7- 10) Sever	3(4.00)	53(70.7)	78.9	0.001
	0(0.00)	3(4.00)		(HS)
VAS sound insertion				
Mean \pm SD	1.32 \pm 0.87	2.49 \pm 1.13	U=	0.001
Range	0 – 4	1 – 6	6.48	(HS)
▪ (0)None	9(12.0)	0(0.00)	X2=	0.001
▪ (1-3) Mild	63(84.0)	53(70.7)	54.0	(HS)
▪ (4-6)Moderate	3(4.00)	22(29.3)		
▪ (7- 10) Sever	0(0.00)	0(0.00)		

Table (8) Continue

VAS IUD insertion Mean \pm SD				U=	
Range	0.85 \pm 0.80	1.36 \pm 1.05	3.28		0.001
▪ (0)None	0 – 4	0 – 5			(HS)
▪ (1-3) Mild	25(33.3)	4(5.30)	X2=		
▪ (4-6)Moderate	49(65.4)	39(52.0)	45.6		0.001
▪ (7- 10) Sever	1(1.30)	32(42.7)			(HS)
	0(0.00)	0(0.00)			
VAS 5 min post insertion				U=	
Mean \pmSD	0.53 \pm 0.77	0.78 \pm 0.77	2.39		0.016 (S)
Range					
▪ (0)None	0 – 3	0 – 4			
▪ (1-3) Mild	44(58.7)	28(37.3)	X2=		
▪ (4-6)Moderate	30(40.0)	33(44.0)	12.9		0.001
▪ (7- 10) Sever	1(1.30)	14(18.7)			(HS)
	0(0.00)	0(0.00)			

4. Discussion

Intrauterine preventative units (IUCDs) need aid a stand out amongst the reversible contraceptives for a helter skelter preventative viability [7]. There would different motivations restricting the utilization of intrauterine preventative gadgets (IUCDs), these motivations extending from dread of torment starting with ladies side and also challenge about inserting the gadget starting with social insurance experts side, segments of the insertion system that might foundation torment incorporate those requisition of the tenaculum of the cervix on settle the uterus Furthermore give footing for straightening the cervical canal, death those uterine sound.

Inserting the IUCD in the inserter tube through those cervix, Also aggravation of the endometrial pit for the gadget [8], thereabouts this investigation might have been a randomized control, twofold unseeing trial to assess those ability Also viability from claiming lidocaine spread Previously, diminishing torment Throughout these steps Throughout IUCD insertion.

The elementary result that measured might have been torment utilizing those 10 cm Visual simple scale (VAS), the torment observed Throughout the sum phases of the transform might have been recorded, after that ache felt 5 minutes then afterward those entirety methodology. Those agony score might have been afterward assembled under Possibly none (0), gentle (1 will 3), moderate (4 will 6) alternately extreme (7 should 10) ache.

In this study, two comparative Assemblies about equivalent numbers (75 parts each) used to evaluate lidocaine shower effectiveness done diminishing ache through IUCD insertion methodology. Bunch particular case accepted Lidocaine, however assembly two accepted placebo with go about as control assembly. All Factual tests performed to guarantee that the two aggregations would comparable and currently mean Contrast viewing know criteria utilized within this analyze. There would no noteworthy contrasts the middle of two Assemblies viewing those interim starting with LMP (P = 0. 439),

amount about past vaginal conveyances (P=0. 24), BMI

and agdistis for youngest youngster (p worth > 0. 05), number for past cesarean areas (P=0. 393), Also number for past premature births (P=0. 667) which may be statistically inconsequential On the whole gatherings criteria.

Investigation from claiming Information uncovered that lidocaine spread requisition of the cervix Throughout IUCD insertion adequately diminished torment felt Throughout those the greater part phases of the methodology Also ache felt 5 minutes after those entirety technique. There might have been helter skelter critical Contrast the middle of lignocaine one assembly Also control one assembly in regards to agony score Throughout tenaculum placement 1. 82 \pm 0. 84 Vs4. 10 \pm 1. 00, heartless insertion, 1. 32 \pm 0. 87 vs 2. 49 \pm 1. 13, iud insertion, 0. 85 \pm 0. 80 vs1. 36 \pm 1. 05 What's more five minutes' post insertion 0. 53 \pm 0. 77vs0. 78 \pm 0. 77. They were constantly on easier in lignocaine aggregation over control one assembly (P quality 0. 001). The principle constraint in this ponder might have been An subjective idea of ache Around distinctive patients (Aksoy et al, 2016). Agony observation might have been shifted starting with distinct Also individual encounter. By this study demonstrated sure result about lidocaine nearby analgesic impact.

The levels about torment that ladies knowledge Throughout IUCD insertion differ clinched alongside distributed reports. A large portion ladies knowledge gentle on direct uneasiness Throughout IUCD insertion. Rarely, those agony will be extreme What's more connected with queasiness and shortcoming What's more sometimes, agony might persimmon tree to a couple days after insertion (8).

There were a few researches surveying lidocaine effectiveness clinched alongside lessening IUCD insertion torment Anyway with distinctive concentrations, measurement manifestations and in addition span about its impact. Effects of these researches went contradicted, thus this demonstrates the vitality for our investigate [9].

Compared the impact of lidocaine 4% alternately placebo gel 5 mins former with respect to 218 parous and nulliparous, 109 about them accepted lidocaine 4% and the

others accepted placebo gel Furthermore demonstrated that impact for lidocaine in agony diminishment might have been statistically critical (28. 3 vs. 44. 2; $p < 0. 001$) Furthermore these comes about help our outcomes Anyhow for different measurement type [9]. [10]. Assesse an additional lidocaine measurement structure through examination of the impact for Lidocaine-prilocaine EMLA alternately placebo cream 7 mins former once 92 parous women, 46 for them gained Lidocaine-prilocaine EMLA also how gained placebo cream Also indicated that might have been critical impact in ache decrease critical (mean scores 2. 65 vs. 4. 61; $p < 0. 001$), [10] Also comparing the impact about 2 ml from claiming lidocaine–prilocaine cream of the foremost cervical lip, took after by 2 ml set in the cervical waterway utilizing a Q-tip utensil , At compared for placebo cream , 7mins former those IUCD insertion with respect to 120 parous ladies , 60 for them accepted 2 ml from claiming lp cream and the others gained placebo cream What's more demonstrated that might have been critical impact over ache decrease huge (mean scores (2. 5±0. 98 vs. 4. 5±2. 7, $p = . 001$) [11]. which come in reliable from claiming our examination effects in regards to both researches.

In turn steady Furthermore steady outcomes might have been acquired by [12] , who compared those impact about 10% lidocaine or isotonic saline shower 3mins former once 200 parous Also nulliparous, 100 about them accepted lidocaine 10% shower and the others accepted isotonic saline shower and demonstrated that might have been critical impact Previously, ache decrease critical (mean scores 1. 01 vs. 3. 23; $p < 0. 001$) [12].

Comparative outcomes likewise got Toward [13], compared those impact for 1% lidocaine or 0. 9% NaCl paracervical square alternately no absense of pain on 95 parous women, indicated that might have been critical impact clinched alongside torment diminishment critical (median agony 2 vs. 6. Vs 6; $p < . 001$) [13], who compared those impact of intrauterine organization about 5 cc levobupivacain to agony alleviation for IUCD insertion, when compared with saline placebo, At with former more duration, 15 min former once 88 parous Also nulliparous, 44 about them accepted 5 ml 0. 9% saline and the others accepted 0. 5% levobupivacaine Also indicated that might have been critical impact Previously, ache diminishment huge (mean scores ($p = 0. 349$, $p = 0. 396$) [14].

Moreover, our outcomes indicated a concurrence with [15] , who compared topical anesthesia lidocaine spray, cream and infusion once ache recognition Throughout intrauterine gadget (IUD) insertion. Former for 200 parous ladies. Lidocaine spread assembly gained four puffs (50 ml, 10 mg/puff) of the cervical waterway What's more cervix, lidocaine cream one assembly gained 2 g of the cervical waterway through 20G angio catheter and of the cervix through An cotton swab, lidocaine infusion assembly accepted 80–200 mg to paracervical square Also demonstrated that might have been critical impact done agony decrease noteworthy [15].

[16] , compared those impact about 2% lidocaine injected 5 minutes former alternately 400 mg alternately ibuprofen orally one hr. Former looking into 100

nulliparous women, Furthermore indicated that there will be no critical impact for ache diminishment (effect measure $< 10\%$) Anyway indicated hazard from claiming moderate/severe torment lessened Eventually Tom's perusing 40% [16]. Comparable outcomes got [17] , who compared the impact for 2% lidocaine alternately placebo gel 3 minuts former for 145 parous and nulliparous women, Furthermore indicated that there might have been no critical impact over agony decrease (mean scores 35. 2 vs. 36. 7; $p = . 8$) [17], [18], who compared those impact of 2% lidocaine or ordinary saline infused under endometrial pit 3 minutes former on 40 parous Furthermore nulliparous women, Also demonstrated that there might have been no critical impact clinched alongside agony diminishment (mean scores 3. 0 vs. 3. 7; $p = . 40$) [18]. These outcomes need aid repudiated for our comes about.

Likewise both [19] compass effects that is diverse for our research outcomes yet all the for diverse measurement type for lidocaine. Compared the impact from claiming 2% lidocaine alternately placebo gel for 1 min ahead 200 parous What's more nulliparous women, and indicated that there might have been no critical impact done ache diminishment (mean scores 50. 9 vs. 51. 0; $p = . 98$) [19]. Compared those impact for 2% lidocaine alternately placebo gel once 199 parous Furthermore nulliparous women, Also demonstrated that there might have been no critical impact done agony diminishment (median agony score 5 vs. 6; $p = . 20$) [20].

Comparable evaluation completed Toward [21] who compared the impact about 1% lidocaine paracervical alternately no anesthesia for 50 parous Also nulliparous women, Furthermore indicated that might have been no critical impact to ache diminishment critical (median score 24. 0 vs. 62. 0; $p = . 09$) [21]. On 2012, who compared the impact about 2% lidocaine or placebo gel or no mediation 1 min former on 96 parous What's more nulliparous women, Furthermore indicated that might have been no critical impact to ache decrease noteworthy (mean scores 3. 4 vs. 3. 4 vs. 3. 7) [22] What's more arrived at Additionally that wastefulness of lidocaine for decreasing torment over IUCD insertion methodology.

Our investigation showed that neighborhood lidocaine spread will be compelling clinched alongside control from claiming agony connected with IUCD insertion.

5. Conclusion & Recommendations

Topical analgesia such as lidocaine spray can alleviate pain with IUCD insertion. Use of lidocaine spray to the cervix has effect on reducing overall pain during IUD insertion. Further studies are needed to evaluate the effects of topical anesthetics with a higher concentration, higher volumes, or longer half life on IUCD insertion pain.

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