

Original Article

COMPARISON OF EXPULSION RATE IN IMMEDIATE VERSUS DELAYE INSERTION OF INTRAUTERINE DEVICE IN FEMALES PRESENTING AFTER DELIVERY

Huma Arshad, Faiqa Saleem, Muhammad Shahid and Muhammad Tayyab

Objective: To compare the frequency of expulsion in immediate versus delayed insertion of intrauterine device in females presenting after delivery

Methods: This present randomized control trial was conducted at Department of Obstetrics and Gynecology, Jinnah Hospital / AIMC, Lahore. Non-probability purposive sampling technique was used in this study. Informed consent was taken from all 200 patients. Demographic information (name, age, BMI and contact) were recorded. Females were divided in two groups on the basis of time of device insertion i.e. immediate or delayed (as per operational definition). Females were followed for 6 months and x-ray was performed to confirm expulsion was labeled. Both groups were compared for IUD expulsion by using chi-square test taking $p\text{-value} < 0.05$ as significant. Data was stratified for parity & obesity. Chi-square test was applied post-stratification.

Results: The mean age of the patients was 28.99 ± 6.31 years. The mean BMI of the patients was 27.06 ± 3.83 kg/m². In our study the IUD expulsion was observed in 15% patients. Statistically there is insignificant difference was found between the study group and IUD expulsion of the patients. i.e $p\text{-value} = 0.23$. Only significant difference was found between the study groups with obese patients and IUD expulsion of the patients i.e. $p\text{-value} = 0.02$.

Conclusion: The evidence found in our study suggests that both the immediate post-partum insertion of IUDs and delayed insertion of IUDs are safe and effective.

Keywords: IUD Expulsion, parity, postpartum, delivery, delayed insertion, immediate insertion

Introduction

Post-partum time is one of the critical period for newborn and mother and associated with high rates of morbidity and mortality. This is a risky period and also the women are vulnerable to have unintended pregnancy. Studies show that adverse outcomes like abortions, premature labor, PPH, LBW babies, fetal loss and maternal deaths are more in pregnancies taking place within 24 months of a previous birth. An Indian study recommends that contraception must be practiced in this special period because 65% women in the first year post-partum period fulfil this study criteria for family planning.¹ Intrauterine device is inserted on outpatient basis and should be performed by trained healthcare professionals for this job. Intrauterine device is a popular and successful way of contraception in reversible way.² After surgical abortion to reduce the incidence of an unwanted pregnancy, the IUC can be placed immediately after this procedure to avoid undesired future complications. Intrauterine device insertion at this moment is associated with safety and well documented efficacy.^{3,4} Expulsion rate was higher as observed after immediate insertion in comparison to delayed insertion.⁵ A study reported that rate of expulsion was 24.0% with immediate IUD insertion

and 4.4% only with delayed IUD insertion. The difference between both groups was significant ($p\text{-value} = 0.008$).⁽⁶⁾ But another study has reported that the rate of expulsion was 5.04% with immediate IUD insertion and 2.7% only with delayed IUD insertion. The difference between both groups was insignificant ($p\text{-value} = 0.19$).⁴ Rationale of this study is to compare the frequency of expulsion in immediate versus delayed insertion of intrauterine device in females presenting after delivery. Literature has reported that immediately IUD insertion is associated with more expulsion rate as compared to delayed IUD insertion but controversial results are also present which showed that whether IUD is inserted immediate post-placental or delayed post-partum, there is no difference for expulsion rate. So to confirm whether expulsion rate is significantly higher with immediately IUD insertion or not, we want to conduct this trial. Through this study we will also get local magnitude which will be helpful in future to predict expulsion rate with immediate IUD insertion as compared to delayed IUD insertion. This will help to improve our practice and local guidelines and to achieve more patients' satisfaction. These are one form of mostiThe study was conducted at Akhter Saeed teaching hospital Lahore during the period of

most effective type of reversible and long-acting way of contraception which are successful in controlling unwanted births.⁷ In the first year of use, Copper IUD is associated with about 0.8% failure rates in comparison with levonorgestrel IUD has a failure rate of about 0.2%.⁸ Those who did not carry children before, evidence supports safety and effectiveness of this procedure and at the same time IUDs do not disturb breastfeeding and can be placed just after delivery.⁹ They have a role to be used after an abortion.¹⁰ Once removed, fertility returns to normal in short period of time even after long term use.¹¹ Copper IUDs sometimes increase menstrual bleeding and cause more painful spasmodic cramps.¹² IUDs with hormonal component may reduce menstrual bleeding or sometime stop menstruation forever.⁹ The symptoms of cramping can be addressed with NSAIDs.¹³

Methods

This randomized controlled trial was done at Unit III, Department of Obstetrics and Gynaecology, Jinnah Hospital / AIMC, Lahore. Sample size of 200 cases; 100 in each group is calculated with 80% power of test, 1% level of significance and taking expected percentage of IUD expulsion i.e. 24.0% with immediate IUD insertion and 4.4% with delayed IUD insertion in females presenting after delivery. Sampling Technique was Non-Probability, Purposive Sampling.

Patients of age 20-40 years with parity <6, were included, presenting in labour for normal delivery at term and Females with an allergy or other contraindications to use of the levonorgestrel-releasing IUD were excluded from the study.

After obtaining permission from hospital ethical committee, 200 females fulfilling the selection criteria were enrolled in the study from labour room of Department of Obstetrics and Gynaecology, Jinnah hospital, Lahore. Informed consent was taken. Demographic information (name, age, BMI and contact) were recorded. Females were divided in two groups on the basis of time of device insertion i.e. immediate or delayed (as per operational definition). Females were followed for 6 months and x-ray was performed to confirm expulsion was labelled (as per operational definition). All the data was collected using the proforma. SPSS software (version 21) was used for data analysis. Quantitative data like age and BMI was presented as mean and standard deviation. Qualitative data like parity, IUD expulsion was presented as frequency and

percentage. Both groups were compared for IUD expulsion by using chi-square test taking p-value <0.05 as significant. Data was stratified for parity & obesity. Chi-square test was applied post-stratification.

Results

Total 200 female patients were enrolled in this study. The mean age of the patients was 28.99±6.31 years with minimum and maximum ages of 20 & 40 years respectively. In this study 32(16%) patients had parity one, 52(26%) patients had parity two, 53(26.50%) had parity three, 42(21%) had parity four and 21(10.50%) patients had parity five. In this study, IUD expulsion was observed in 15% patients and IUD was observed to be in its original position in 85% patients. **Fig-1**

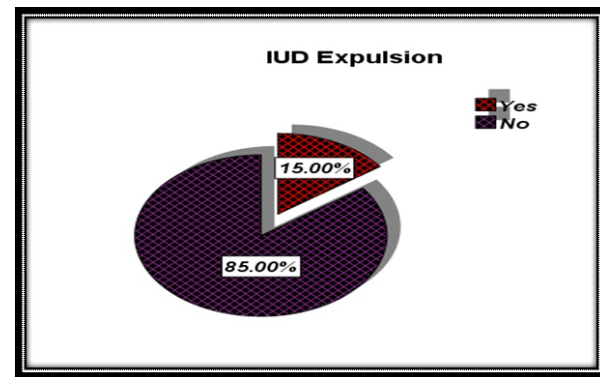


Fig-1: Frequency distribution of IUD expulsion

The study results showed that IUD expulsion was found in 30 patients in which 12 were from delayed group and 18 were from immediate group, similarly IUD expulsion was not observed in 170 cases in which 88 were from delayed group and 82 were from immediate group. Statistically there is insignificant difference was found between the study group and IUD expulsion of the patients i.e. p-value >0.05.

Table-1 In obese case, the IUD expulsion was found in 16 patients in which 5 were from delayed group and 11 were from immediate group. In non-obese cases, the IUD expulsion was found in 14 patients in which 7 were from delayed group and 7 were from immediate group. Statistically there is significant difference was found between the study groups and IUD expulsion whether patients is obese or non-obese i.e. P-value <0.05. **Table-2**

The study results showed that the mean height of the patients was 5.40±0.23 meters with minimum and maximum heights of 5 & 5.80 meters respectively. The mean weight of the patients was 71.53±8.47 kg with minimum and maximum weight of 58 & 88 kg respectively. The mean BMI value of

the patients was 27.06 ± 3.83 kg/m² with minimum and maximum BMI of 19.40 & 36.60 kg/m² respectively. **Table-3**

Table-1: Comparison of IUD expulsion in both study groups n=(200)

		Study Groups		Total
		Delayed	Immediate	
IUD Expulsion	Yes	12 (12%)	18 (18%)	30 (15%)
	No	88 (88%)	82 (82%)	170 (85%)
	Total	100(100%)	100 (100%)	200 (100%)

Table-2: Comparison of IUD expulsion in both groups stratified by BMI.

IUD Expulsion		Study Groups		P value
		Delayed	Immediate	
Obese	Yes	5	11	0.02
	No	25	13	
Non-Obese	Yes	7	7	0.026
	No	62	69	

Table-3: Descriptive statistics of Anthropometric measurement of patients n (200)

	n	Height (Meter)	Weight (kg)	BMI (KG/m ²)
		200	200	200
Anthropometric measurement	Mean	5.40	71.53	27.06
	SD	.23	8.47	3.83
	Minimum	5.00	58.00	19.40
	Maximum	5.80	88.00	36.60

Discussion

Diabetes This present Randomized Controlled Trial was conducted at Department of Obstetrics and Gynecology, Jinnah Hospital / AIMC, Lahore to determine the frequency of expulsion in delayed versus immediate insertion of intrauterine device in females presenting after delivery. Total 200 female patients were enrolled in this study. The mean age of the patients was 28.99 ± 6.31 years with minimum and maximum ages of 20 & 40 years respectively. Right after child birth, inserting an intrauterine device (IUD) can be safe and good for different reasons. The woman at this time when she is not having pregnancy and may be planning for birth control. The study results showed that IUD expulsion was found in 30 patients in which 12 were from delayed group and 18 were from immediate group, similarly IUD expulsion was not observed in 170 cases in which 88 were from delayed group and 82 were from immediate group. WHO in 1980 compared expulsion and pregnancy rates in this time period and reported them to be excessive.¹⁴ Study from Colombia has reported that 95% of women

had a consent for immediate post-partum IUD placement and wished to have it done. Those ladies who wished later insertion, 45% of them ultimately had an IUD placed. Delay in decision especially after discharge from health facility makes it inconvenient and expensive with addition of a return visit.¹⁵ In our study IUD expulsion was observed in 30 (15%) patients. Among these patients expulsion in 12 patients was observed in delayed group and expulsion in 18 patients was observed in immediate group. In obese case, the IUD expulsion was found in 16 patients in which 5 were from delayed group and 11 were from immediate group. According to our study both groups were found insignificant. i.e. p-value=0.23. Some of the studies discussed below according to their findings. The mean BMI value of the patients was 27.06 ± 3.83 kg/m² with minimum and maximum BMI of 19.40 & 36.60 kg/m² respectively. Chen 2009 studied delayed versus immediate post-partum insertion of the levonorgestrel-releasing IUD. It was more likely for the immediate group than the delayed insertion to be associated with expulsion by six months (23.5% vs 4.4%) (OR 6.77; 95% CI 1.43 to 32.14). Both groups were comparable in terms of pregnancy (was not found) and in use after six months (84% and 77%, respectively).¹⁶ Celen et al recommended that CuT 380 models is an effective way to achieve objectives in immediate post-placental insertion, it is useful and safe and at the same time it is convenient. This mode is a cost effective procedure for early postpartum contraception.¹⁷ 157 women were randomly selected in a study in Mexico and were followed to receive the CuT380A or the multiload Cu375 either postplacentally [within 10 min of placental delivery (immediate), n=64] or between 10 min and 48 h after delivery (delayed, n=93). At 1 year of follow-up, expulsion rates were 9% and 13% for immediate post placental insertion after cesarean and vaginal delivery, respectively, and 4% and 12% for delayed postpartum insertion, respectively (p=.3).¹⁸ 1132 Egyptian women were studied in one prospective cohort study after postpartum insertion of a CuT380A IUD over 3 years: 1016 IUD placements occurred within 10 min of placental delivery (immediate) and 116 were inserted between 10 min and 48 h after placental delivery (delayed). Expulsion rates were 2.4 and 2.6 per 100 women years for the immediate and delayed groups, respectively (pN.05).¹⁹

Conclusion

The evidence found in our study suggests that both

The immediate post-partum insertion of IUDs and delayed insertion of IUDs are safe and effective. We found that IUD Expulsion was higher for immediate versus delayed insertion with statistically insignificant results.

Department of Obst & Gynecology
Jinnab Hospital
www.esculapio.pk

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