

# POSTPARTUM INTRAUTERINE CONTRACEPTIVE DEVICE: EXPULSION RATE AFTER VAGINAL DELIVERY AND CAESAREAN SECTION

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## ABSTRACT

**Background:** Intrauterine device (IUD) insertion after cesarean section and vaginal delivery are practiced widely. **Objective:** To compare the frequency of expulsion of postpartum intrauterine contraceptive device between vaginal and cesarean delivery. **Methodology:** Study design: Descriptive case series. Place and duration: Department of Obstetrics and Gynaecology Sheikh Zayed Medical College, Rahim Yar Khan from 1<sup>st</sup> July to 31<sup>st</sup> December 2016. One hundred and thirty two patients fulfilling inclusion criteria were included this in cross sectional study. Sixty six patients delivering vaginally and sixty six delivering after Caesarean section underwent IUD insertion immediately after delivery and were followed after 6 weeks postnatal to determine expulsion. Data was entered and analyzed by using SPSS version 20. **Results:** The expulsion rate between two groups, showed that in vaginal delivery group expulsion of IUD occurred in 11 patients (16.6%) while in Cesarean group expulsion occurred in 2 patients (3%). (p=0.009) **Conclusion:** Rate of IUD expulsion was significantly lower in group of women delivering by Cesarean section as compared to those delivering vaginally.

**Key words:** PPIUD, Vaginal delivery, Caesarean section, Expulsion rate.

## INTRODUCTION

Postpartum period is one of the critical times when a woman needs special optimal health services as complication rates are quite high during this time period and also women are vulnerable to have unintended pregnancies.<sup>1</sup> Intrauterine contraceptive device (IUD) is a well-known method of contraception worldwide.<sup>2</sup> Pakistan has a very low contraceptive prevalence rate of 35%.<sup>3</sup> The reasons for non-use of contraception are many, including lack of awareness, non-availability of accessible family planning services and male dominance due to cultural or geographical factors.<sup>4</sup> Birth spacing can reduce nearly one third of maternal deaths and 10% of childhood deaths if couples avoid pregnancies more than two years.<sup>5</sup> Short birth intervals are associated with increased maternal and infant morbidity and mortality.<sup>6</sup> To prevent unplanned pregnancies, postnatal women need a range of effective methods of contraception.<sup>5,6</sup> Among different methods, Intrauterine device (IUD) insertion in immediate postpartum period is a highly effective, reliable and cost effective non hormonal method for some women, as it does not interfere with breast feeding, is convenient for both women and their health services providers, is associated with less discomfort and fewer side effects than interval IUD insertion and also provide long acting reversible contraception.<sup>7,8</sup>

Postpartum IUD also beneficial with immediate accessibility following facility birth, so that IUD could be available in that facility after delivery.<sup>9</sup> Government of Pakistan is trying to expand family planning services to achieve Millennium Development Goals 4 and 5, to reduce child and maternal mortality.<sup>9</sup> The main concern with PPIUD was its increased expulsion rate. Expulsion rate was much higher initially but with improved insertion technique and experience there is decrease in expulsion rate. Expulsion rate is higher in post vaginal delivery insertion when compared with caesarean group.<sup>10</sup> The objective of this study was to compare the expulsion rate of postpartum intrauterine contraceptive device, among women delivered by cesarean section and vaginal delivery.

## METHODOLOGY

This cross sectional study was conducted on one hundred and thirty two patients fulfilling the inclusion criteria were included in study. Sixty six women were in vaginal delivery group and sixty six in lower segment caesarean section group. Informed consent was taken from all women included in the study. Proper contraceptive counseling was done about method of insertion, benefits and side effects. Demographic data including age, parity, educational status and BMI was also noted. In all participants multi load Cu (375) was used as postpartum intrauterine device. In all women IUD

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was inserted in immediate postpartum period and was followed after 6 weeks post insertion at which final outcome, expulsion of IUD was noted. All data was analyzed in SPSS version 20. Mean and standard deviation was calculated for quantitative variables such as age, height, weight and BMI. Frequency and percentages were calculated for qualitative variables like parity, educational status, mode of delivery (vaginal/caesarean) and expulsion of IUD (yes/no). Stratification was done to deal with effect modifiers. Post stratification Chi-square test was applied and P value <0.05 was taken as significant.

## RESULTS

One hundred and fifty patients were enrolled in the study. Eighteen patients, in which IUD was inserted did not come for follow up so dropped from analyzed study. Patients ranged between 18-35 years of age. Mean age of patients was  $28.27 \pm 3.76$  year. Mean parity was  $4.36 \pm 1.53$ . Out of 132 patients 66 were delivered vaginally (50%) and remaining 66 (50%) delivered by lower segment Caesarean section. Expulsion of IUD was observed overall in 13 patients (9.8%). In vaginal delivery group expulsion of IUD occurred in 11 patients (16.6%) while in caesarean section group expulsion occurred in 2 patients (3%). (Table I) Mean BMI was  $33.2 \pm 1.69$  kg/m<sup>2</sup>. Out of 132 patients 55 were literate while remaining 77 women were illiterate. (Table I)

**Table I: Distribution of patients by expulsion of IUD**

Expulsion of IUD	Cesarean group	Vaginal delivery group	Total
Yes	2 (3%)	11 (16.6%)	13(9.8%)
No	64 (97%)	55 (83.3%)	119(90.2%)
Total	66 (100%)	66 (100%)	132(100%)

## DISCUSSION

As a contraceptive used during postpartum period, the IUD has a distinct advantage. It is free from systemic side effects and does not affect breast feeding as seen with hormonal methods. It is a reversible method. In addition, IUD does not require regular user compliance. It is associated with no pain during insertion when used post placentally. Timing of insertion, counseling and provider training are important factors for IUD insertion in postpartum period as quoted in United

Nations Population information Network(UN-POPIN) report.<sup>11</sup> Of these, the timing of insertion is important as it influences the risk of expulsion. Ideally postpartum insertion should take place within ten minutes of placental delivery (post placental application) or later till 48 hours of delivery. The risk of expulsion is higher if inserted after 48 hours of delivery.<sup>12</sup>

All participants of this study underwent multi load Cu IUD insertion immediately after delivery by Caesarean section or vaginally. In our study, overall expulsion rate of IUD was 9.8% which is comparable to a study conducted by Shukla et al in 2012 in North India.<sup>12</sup> In our study, expulsion of IUD in vaginal delivery and Caesarean section was 8.3% and 1.3% respectively. These results are comparable with study done by Sultana R et al in which expulsion rate at 6 weeks in vaginal delivery and Caesarean section were 6.6% and 1.3% respectively.<sup>13</sup> In another study done by Fernand's JHA et al in 2004 showed a significant difference in expulsion rate in postpartum IUD insertion after vaginal deliveries and Caesarean section. Expulsion rate was 32% among vaginal delivery group but there was no expulsion in those submitted to Caesarean sections.<sup>15</sup> Four multisite studies in N-POPIN report found that after six months, the expulsion rate was 9% for immediate post placental insertion compared with 37% for insertion done between 24 to 48 hours post delivery.<sup>10</sup> These results are not comparable with our study, as IUD insertion was done within 30 minutes of delivery of placenta. Whenever IUD insertion and delivery interval was prolonged, there was much higher expulsion rate.

In a study conducted by Sofat R, on 115 women undergoing IUD insertion within first ten days postpartum reported higher expulsion rate; 67% of cases retained IUD, 4.3% of cases had IUD slid in cervical canal and 6.1% women had complete expulsion of IUD.<sup>15</sup> Bhalerao et al, did a study in on 168 women reported 16.4% IUD expulsion rate in women undergoing post-puerperal IUD insertion.<sup>16</sup> As insertion was done in post puerperal period, expulsion rate was higher as compared to our study in which expulsion rate was 9.8%. Another study conducted by Celen et al in 2003 had expulsion rate of 11.3% comparable with study of Bhalerao.<sup>18</sup> Our study results are also comparable with study of Sharma et al where expulsion rate in vaginal delivery group was 7.6% and in Caesarean section group it was 2.43%.<sup>1</sup> In our study, rate of IUD expulsion was significantly lower (0.009) in the group of women

delivering by Caesarean section as compared to vaginal delivery group.

## CONCLUSION

Immediate postpartum insertion of IUD insertion after cesarean section seems to be safe and effective method of contraception as for as expulsion rate is concerned. Hence it suggested that family planning should be integrated with maternal and child care services in order to effectively promote the use of contraceptive devices in women who otherwise and on their own initiative would not seek the use such protective method.

## REFERENCES

1. Sharma A, Gupta V, Bansal N, Sharma U, tendon A. A prospective study of immediate postpartum intrauterine device insertion in tertiary level hospital. *Int J Res Med Sci* 2015;3:183-7
2. Nidhi M, Neelesh D, Vrenda J. Intrauterine device insertion during caesarean section- a boon for rural women. *J Dental Med Sci* 2013;8:21-3
3. National Institute of Population Studies[Pakistan]. Pakistan Demographic and health survey 2012-13. [cited 2016 June 7. [http://www.nips.org.pk/abstract\\_files/PDHS%20final%20report%20as%20of%20Jan%2012-14.pdf](http://www.nips.org.pk/abstract_files/PDHS%20final%20report%20as%20of%20Jan%2012-14.pdf)
4. Afshan A, Asim SS. Immediate postpartum IUCD insertion: an opportunity not to be missed. *Ann Abbasi Shah Hosp Karachi Med Dental Coll* 2014;19:15-20
5. Cleland J, Bernstein S, Ezech A, Faundes A, Glasier A, Innis J. Family planning: the unfinished agenda. *Lancet* 2006, 368:1810-1827
6. Rustin S: Further evidence of effects of preceding birth interval on neonatal, infant and under five years mortality and nutritional status in developing countries: evidence from the demographic and health surveys. DHS Working papers No. 41. *Macro international*; 2008
7. Suri V. Postplacental insertion of Intrauterine device. *Indian J Med Res* 2012;136:370-1
8. Lopez-Farhan JA, Hernandez Gonzalez A, Velez Machorro IJ, Vazquez -Estrada LA. A comparative randomized study of levonorgestrel intrauterine system (LNG-IUS) vs Cu T 380 A intrauterine device applied during caesarean section. *Open J Obstet Gynaecol* 2012;2: 151-5
9. Kumar A et al. Women's experience with postpartum intrauterine contraceptive device use in India. *Reproductive Health* 2014;11:32-36
10. United Nations Population information network (POPIN), UN Population division, Department of Economic and Social Affairs with support from UN population Fund. *Network Intrauterine devices Family Health international*. Winter 1996;16-20
11. Postpartum IUCD reference manual. New Delhi: Family planning division, Ministry of Health and family welfare, Government of India; 2010.
12. Shukla M, Qureshi S, Chandrawati. Postplacental intrauterine device insertion a five year experience at tertiary care center in North India. *Indian J Med Res* 2012;136:432-5
13. Sultana R, Jameel A, Amjad A. Immediate postpartum IUCD insertion; an ideal method. *J Soc Obstet Gynaecol* 2015;5:34-9
14. Fernandes JHA, Lippi UG. A clinical and ultrasound study on the use of post placental intrauterine device. *Einstein* 2004;2:110-4
15. Sofat R. Postpartum CuT insertion- a trial. *Indian J Maternal Child Health* 1990;1:23-4
16. Bhalerao, Purandare. Post puerperal CuT insertion: a prospective study. *J Postgrad Med* 1989; 35:70-3
17. Celen, Moroy, Suvak, Aktulay, Danisman. Clinical outcome of early post placental insertion of intrauterine contraceptive devices. *Contraception* 2004;69: 279-82

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