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ORIGINAL ARTICLE

Prevalence of Complications after Interval Postpartum Intrauterine Device Insertion

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ABSTRACT

Background and Aim: Postpartum intrauterine device (PPIUD) is a reversible, long-term and effective technique of contraception. The intrauterine device (IUD) is inserted within 48 hours of delivery. The immediate insertion of an intrauterine device causes certain complications. The present study aimed to assess the prevalence of complications after Interval Postpartum Intrauterine Device Insertion.

Materials and Methods: This cross-sectional study was carried out on 147 women who underwent postpartum IUD (PPIUD) insertions during from January 2021 to June 2021 at Gynecology department, Mufti Mehmood Memorial Teaching Hospital (MMMTH), Dera Ismail Khan and Muhammad Teaching Hospital Peshawar. All the women who delivered and showed willingness for PPIUCD insertion were enrolled and continuously follow-up for 4 to 6 weeks after delivery. Demographic, obstetric, and clinical parameters were recorded on pre-designed medical proforma. PPIUCD insertion after 6 weeks of delivery were followed-up for the evaluation of complications. Uterine infection, medical removal of IUD, IUD expulsion, perforation, and method discontinuation were the outcome variables. SPSS version 20 was used for data analysis.

Results: Of the total deliveries, 147 women inserted the postpartum intrauterine contraceptive device (PPIUCD). Of the total, about 122 (83%) women returned for follow-up after 6 weeks. All the women underwent transvaginal insertion of intrauterine contraceptive devices. The PPIUCD insertion related complications with prevalence were uterine infection 26 (21.3%), overall method suspension 17 (13.9%), perforation 20 (16.4%), interceptive uterine device expulsions 25 (20.5%), and intrauterine device removal 32 (26.2%). The severe uterine infection was in 2 (1.7%) cases who were hospitalized.

Conclusion: The postpartum intrauterine device cumulative expulsion rate was higher among women compared to the expulsion rate of insertions. The longer duration of bloody lochia flow and delivery intrauterine device insertions were the key risk factors for expulsion of PPIUCD. Women can safely utilize intrauterine contraceptive devices with low complications beyond four week.

Keywords: Postpartum intrauterine device; Complications; Intrauterine device expulsion

INTRODUCTION

Postpartum intrauterine device (PPIUD) is a reversible, long-term and effective technique of contraception [1]. About 220 million women need family planning methods but have no access due to various factors worldwide [2]. The failure rate of CuT380A contraceptive device varies from 0.6 to 0.8 per 100 pregnancies in women after usage of 12 months [3]. Promoting intrauterine contraceptive device promotion limits the unfulfilled family planning need. The intrauterine device is the contraceptive and popular reversible method [4]. Early initiation and utilization of intrauterine devices can reduce failure rate of PPIUCD insertion. The World Health Organization recommended immediate IUD insertion after delivery as the most effective and safest method of limiting births and space for women who either breastfeed or not [5]. Globally, about 14.3% women preferred modern contraceptive devices but the prevalence of IUD was lower 2% in reproductive age women [6]. Though modern contraceptive usage increased from 27% in 2005 to 32% 2016 but family planning unmet need still varies from 22 to 24% [7]. Currently, about 0.9% married women use intrauterine devices for family planning [8].

In developing countries, immediate insertion of a postpartum intrauterine device is suitable and ideal for women whereas they do not come back for follow-up or postnatal visits. Intrauterine device intakes in postpartum intrauterine device practice become increased after childbirth as no fear of pregnancy, no breastfeeding risks, lower pain risks, and reduced cost and time. However, poor outcomes such as uterine perforation, IUD expulsion, uterine infections, IUD insertions interval have been associated with postpartum intrauterine device insertion [9]. Expulsion rates significantly reduced the immediate insertion of postpartum intrauterine devices to a lower range of 5% and higher as 70% [10]. Certainly, expulsion rates and complication variables among health care professionals had uncertainty in the past few decades regarding PPIUCD insertions [11]. Previous research reported various factors for the risk and expulsion rate of PPIUD. These factors were parity, age, insertion time, and delivery mode [12-14]. Due to the scarcity of data available on PPIUCD risk factors and complications in Pakistan, PPIUD insertion complications among women after 6 weeks of childbirth were evaluated in this study.

METHODS

This cross-sectional study was carried out on 147 women who underwent postpartum IUD (PPIUD) insertions during from January 2021 to June 2021 at Gynecology department, Mufti Mehmood Memorial Teaching Hospital (MMMTH), Dera Ismail Khan and Muhammad Teaching Hospital Peshawar. All the women who delivered and showed willingness for PPIUCD insertion were enrolled and continuously follow-up for 4 to 6 weeks after delivery. Demographic, obstetric, and clinical parameters were recorded on pre-designed medical proforma. PPIUCD insertion after 6 weeks of delivery were followed-up for the evaluation of complications. Uterine infection, medical removal of IUD, IUD expulsion, perforation, and method discontinuation were the outcome variables. Informed consent form was taken from each individual woman who showed willingness for participation. Ethical approval was taken from the respective institute ethical committee. PPIUD program protocol was followed for all the women who delivered at hospital routine information regarding the postpartum method of birth control in this study. Appropriate color code was utilized for both women counseled at prenatal period about family planning through PPIUD insertions and women opted another technique for family planning. IUD was inserted after or within 48 hours of delivery in those women who reaffirmed their consent.

Prior to discharge, all the demographic and clinical details were recorded by the investigator in data collection proforma. Details about consent form and women's delivery were noted on medical records. The women experienced PPFP information, counselling, and postpartum contraceptive choices were interviewed. All the women were given a choice of selecting any family planning methods especially IUD insertions. Additionally, cervical thread presence was examined for the IUD presence and attributable complications signs and symptoms. All the results were presented in tabulated form. SPSS version 20 was used for data analysis.

Women experienced PPIUD complications gives primary outcomes such as uterine infection, IUD removal, IUD expulsion, and continuous follow up for specific outcome from insertion time to follow-up day. Abdominal vaginal discharges such as color, smell, and amount and abdominal severe pain were investigated in women given complain about PPIUD insertion. Uterine infection is the presence of abdominal pain and abdominal vaginal discharge. Women expelled from the IUD were confirmed by the visible strings absence by examination. Lack of expulsion history, and invisible strings on pelvic examination leads to ultrasound examination in order to confirm dislocation and expulsion. IUD partially expelled or dislocated, accidental removal, and uterine infection were the IUD insertions removal confirmed by medical removal based on maternal request. IUD discontinuation was referred to the maternal decision about discontinuity of IUD after or at 6 weeks follow-up.

RESULTS

Of the total deliveries, 147 women inserted the postpartum intrauterine contraceptive device (PPIUCD). Of the total, about 122 (83%) women returned for follow-up after 6 weeks. All the women underwent transvaginal insertion of intrauterine contraceptive devices. The PPIUCD insertion related complications with prevalence were uterine infection 26 (21.3%), overall method suspension 17 (13.9%), perforation 20 (16.4%), interceptive uterine device expulsions 25 (20.5%), and intrauterine device removal 32 (26.2%). The severe uterine infection was in 2 (1.7%) cases who were hospitalized. The overall mean age was 26.64±4.57 years. Most of the participants 129 (87.8%) were above 20 years old while 18 (12.2%) were below 20 years as shown in Figure. 1. The prevalence of pregnancy (Gravidity) 1 time 48 (39.3%), 2 to 5 times 69 (56.6%), and above 5 times were 5 (4.1%) as shown in Table1/Figure.2.

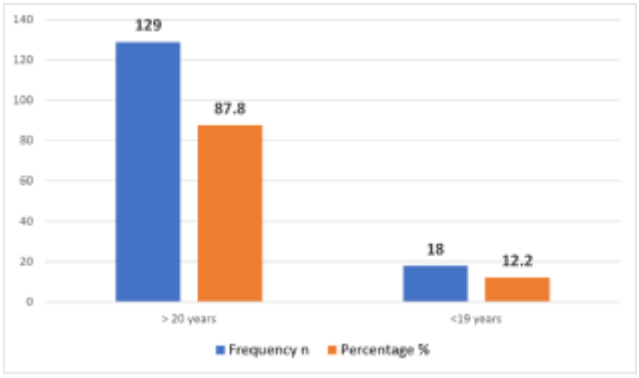

Figure-1. Age wise distribution of 147 participants

Table-1. The prevalence of pregnancy (Gravidity) among 122 participants

Gravidity	Frequency n	Percentage %
One time	48	39.3
Two to Five times	69	56.6
Above five times	5	4.1
Total	122	100

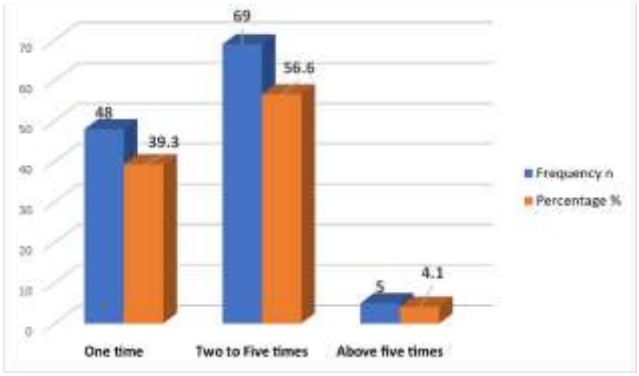

Figure-2. The prevalence of pregnancy (Gravidity) among 122 participants

In total, 122 women reported after 6 weeks of PPIUD insertion for follow-up and complications. These complications were uterine infection 26 (21.3%), overall method suspension 17 (13.9%), perforation 20 (16.4%), interceptive uterine device expulsions 25 (20.5%), and intrauterine device removal 32 (26.2%). The severe uterine infection was in 2 (1.7%) cases as shown in Table-2/Figure-3.

Table-2. Frequency of IUD insertion outcomes and complications.

Complications	Frequency n	Percentage %
Uterine Infection	26	21.3
Overall method suspension	17	13.9
Perforation	20	16.4
Interceptive uterine device expulsions	25	20.5
Intrauterine device removal	32	26.2
Severe uterine infection	2	1.7
Total	122	100

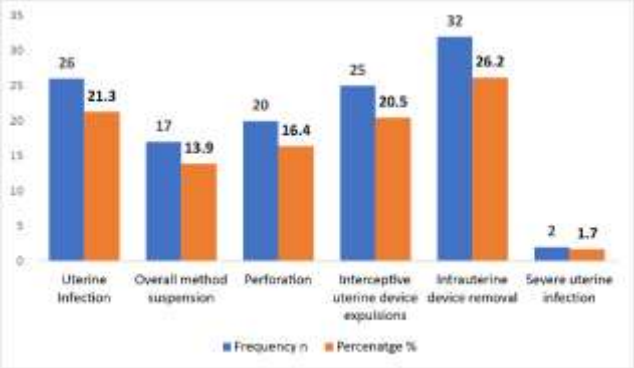

Figure-3 Frequency of IUD insertion outcomes and complications.

DISCUSSION

The current study was conducted to investigate the rising r ate of postpartum contraceptive insertion complications for family planning. It has been discovered that IUDs are an eff ective and dependable method of birth control. However, th e utilization rate of PPIUD was less than 35%, while only 1 % of married women used any type of IUD insertion [15]. F urthermore, this study demonstrated that IUD insertion was performed 48 hours after delivery, and women were follow ed up for 6 weeks. The expulsion rate of IUD was 20.5 %(n=25) after 6 weeks follow-up which is higher than copper IUD insertion as a contraceptive device found in other studies. Another study found a 9.3% expulsion rate of PPIUD insertion after six weeks of follow-up which is approximately similar to our findings [16]. The cumulative removal rate was 10% which was lower than 13%in the present study. All the vaginal insertions of PPIUD were carried out with newly trained for IUD insertion.

In the USA, two studies reported different expulsion rates of postpartum intrauterine contraceptive device insertion with different follow-up duration. One study found a 20% expulsion rate after 12 weeks follow-up in which 86% cases occurred after 6 weeks while another found a 17%expulsion rate within 4 to 8 weeks follow-up [17, 18]. Another study found a higher expulsion rate of IUD varied from 9.5% to 38% when immediate insertion was carried outline after 10 minutes of delivery [19]. The reference duration was three to six months longer than the present study 6 weeks. Though various studies have been found on postpartum intrauterine insertion which was generally safe and reliable but in our study newly trained insertion investigators (midwives) performed the procedures.

Puerperal uterine modeling is considered a promising factor for IUD spontaneous expulsion whereas IUD lower insertion could be the contribution factor [20]. In the present study, the reduced rate of IUD complications would be caused by careful selection of client and Kelly forceps curve which high up the fundus and adhere the procedure to standard guidelines [21]. True fundal insertion of IUD for longer length 33cm allowed by Kelly forceps curve compared to 24 cm. different insertion techniques has been reported causing differences in expulsion rates. Some studies reported usage of IUD inserters while other reported forceps hands or ring [22, 23]. The present study complication rates are higher than the PIUD actual rates due to the sample which includes all those women who reported back for an affiliation-based follow-up and more likely suffers from complications compared to no seek of insertion device women. Additionally, in the present study, women who delivered children through vaginal delivery were considered only for insertion methods done by midwives. Other studies consistently reported IUD complications after cesarean section delivery. A higher prevalence of complications in cesarean delivery was found in these studies [24, 25]. The current study prospectively followed up the IUD insertion in women who were delivered through vaginal delivery. The majority of the studies were done on IUD insertion with outcomes and complications caused by either Levonorgestrel IUDs or copper IUDs inserted after cesarean delivery [26].

Besides IUD complications, women's age and mode of delivery were the two key factors identified that were independently associated with the continuation method. The likelihood of continuation method increased with cesarean section delivery independent of other parameters but discontinuation method was found at a lower rate in cesarean section delivery compared to the vaginal delivery [27]. The scarred uterus in the cesarean section concerned women to utilize the intrauterine contraceptive device to avoid pregnancy and so more likely effective contraception might be advised by health professionals to avoid the side effects of pregnancy. Also, women delivered through cesarean section had less chance of uterine rupture in case they wait for 24 months compared to short birth space. In our study, it has been found that women of age above 20 years are more likely to have contraceptive device insertion compared to young women (<20 years). The intrauterine contraceptive device insertion utilization has been positively recommended by the majority of women who utilized the insertion for a year and suggested through social networking. These steps would enhance the postpartum family planning in areas where the IUD insertion rate is well below (<1%) [28]. Contrary, other women who did not recommend provides few valid reasons for not approving IUD insertions in other women. These reasons were abdominal pain, uncertain long-term outcomes, and an irregular menstrual cycle. Educating and counseling the client regarding pre and post PPIUD insertion could improve the health care providers.

CONCLUSION

The postpartum intrauterine device cumulative expulsion rate was higher among women compared to the expulsion rate of insertions. The longer duration of bloody lochia flow

and delivery intrauterine device insertions were the key risk factors for expulsion of PPIUCD. Women can safely utilize intrauterine contraceptive devices with low complications beyond four week.

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