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POSTPARTUM INTRAUTERINE CONTRACEPTIVE DEVICE INSERTION IN CARDIAC PATIENTS

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ABSTRACT

Objective: To assess the acceptability and safety of immediate postpartum intrauterine contraceptive device insertion among parturient having cardiac disease and to determine gynecological and cardiac complications at follow up at four to six weeks and at six months.

Study Design: Prospective interventional study.

Place and Duration of Study: This study was conducted at obstetrics and gynecology ward of Armed Forces Institute of Cardiology / national Institute of Heart Disease (AFIC / NIHD) from Jan 2016 to Dec 2016.

Methodology: All consecutive cardiac patients delivering were evaluated and enrolled after consent. Patients were followed up for six months after placing post partum intrauterine contraceptive device (PPIUCD). Primary outcome was acceptance. Safety was assessed by occurrence of cardiac and gynecologic complications including perforation, expulsion, lost strings and pelvic infection. Cardiac complications studied were, arrhythmias ,Ischemic episodes, thromboembolism and infective endocarditis at follow up between 4-6 weeks and at six months.

Results: A total of 170 patients delivered during the study period. Of these women 108 (63.5%) were eligible for PPIUCD insertion and 42 (38.8%) accepted PPIUCD. Mean age and parity was 28 ± 5 and P2 ± 1.5. Cardiac lesions amongst participants was Mitral valve disease in 58.8% followed by double valve replacement in 14.7%, dilated cardiomyopathy 11.76%, aortic valve involvement in 8.8% and supra ventricular tachycardia in 5.9% patients. Minor gynecological complications were reported in 11 (26.0%) and cardiac complications were 6 (14.0%). Long term safety at follow up was assessed at six months by continuation of method in 30 (85.7%). discontinuation in 4 (9.5%) due to bleeding, 2 (4.8%) were lost to follow up and there was 0 (%) pregnancy.

Conclusion: Postpartum intrauterine device insertion is a safe and valid option in selected cardiac patients who would benefit most from this long acting reversible contraceptive method. There is no increased risk in cardiac patients compared to general population.

Keywords: Cardiac disease, Contraception, Pregnancy.

INTRODUCTION

The number of women reaching reproductive age affected by cardiac disease is rising because more children with congenital heart disease are surviving to adulthood due to early diagnosis and expert care. Similar is the case with acquired heart diseases. Pregnancy is associated with hemodynamic, hemostatic and metabolic alterations that increase cardiovascular risks especially in cardiac patients[1]. Cardiac disease is the leading cause of maternal death worldwide and complications for fetus like preterm delivery, congenital heart disease, growth restriction, stillbirth and deaths in infancy[2]. Choosing the most appropriate contraceptive for women with cardiac disease requires consideration of the level of risk of pregnancy, method's efficacy, risks associated with administration and long term use. In many of these high risk cases balancing these risks requires a multidisciplinary and individualized approach. This is the medical eligibility criteria (MEC) for contraceptive use in which the safety of each contraceptive method is determined by several considerations in the context of the medical condition, primarily and secondarily

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whether the medical circumstance makes the contraceptive method less effective[3]. It is estimated that almost 115 million women worldwide have an unmet need for family planning, that is they express a desire to limit or space future births, but they are not currently using a family planning method. The countries with the highest percentage of unmet need are in Sub-Saharan Africa and Southeast Asia ranging between 30–42%[4]. The appropriate spacing of births has positive impact on women's health and on their social and economic well-being. The postpartum period presents an excellent window of opportunity to provide family planning counseling and methods to women especially in a country like Pakistan where generally the only encounter with a skilled health care provider is during childbirth. The best family planning method in this situation would be used immediately following childbirth thus preventing mistimed or unwanted pregnancies. Nowadays, PPIUCD has been established as an effective and reliable method of contraception as it offers numerous advantages like easy insertion, no adverse impact on breast-feeding, cost-effectiveness, relief of overcrowded outpatient facilities and protection against unwanted pregnancy and consequently abortion[5]. Appropriate time for IUCD insertion in the postpartum period includes the post placental IUCD insertion, the immediate postpartum IUCD insertion within 48 hours and the transcesarean IUCD insertion[6]. PPIUCD insertion is an opportunity not to be missed in developing countries like ours.

PPIUCD is a relatively new treatment option and is not being used in many hospitals. Therefore to see whether it is safe and effective in high risk cardiac patients is the reason for this study. This procedure is very safe and effective in non-cardiac patients so this research will help in establishing safety in cardiac patients.

METHODOLOGY

This was prospective interventional study done in Armed Forces Institute of Cardiology Rawalpindi from Jan 2016 to Dec 2016. Patients were enrolled by Consecutive purposive non probability sampling at ObGyn department. Approval for conducting the study was taken from institutional review board of AFIC/NIHD. Placing PPIUCD was also discussed with National committee of maternal and neonatal health Pakistan (NCMNH) PPIUCD initiative. Pregnant cardiac patients delivering vaginally and by lower segment cesarean section at obstetrics ward during study period were counseled and those who were eligible and consented were included. Counseling for postpartum family planning was offered during antenatal visits, and during admission for delivery. A written informed consent was taken. Patients having complex valvular heart disease, Complex Cyanotic heart disease, Fontans circulation and Eisenmenger syndrome, fever during labor and delivery, Pelvic infections, prolonged rupture of membranes, Uterine anomalies, myomas and postpartum hemorrhage due to atony were excluded. The post placental IUCD insertion was done immediately after expulsion of the placenta, following a vaginal delivery in labor room or within 48 hours of delivery and the transcesarean IUCD before the uterine incision was closed in operation theatre. The procedure was performed by a doctor with the assistance of a midwife in labor room with continuous hemodynamic monitoring with the help of cardiac monitor and facilities available for cardiopulmonary resuscitation.

Postnatal Insertion was performed by placing the patient in lithotomy position. Aseptic techniques were used throughout the procedure. Sim's speculum was gently inserted and cervix visualized. The anterior lip of the cervix was then gently grasped with ring forceps. The IUCD was removed from the insertion sleeve and grasped with the kellys forceps using a no-touch technique. The IUCD was then inserted through the dilated cervix to the level of the uterine fundus, as confirmed by palpation with a hand placed on the abdomen overlying the fundus. The forceps were opened to release the IUCD and

removed without closing the forceps. The cervical os was then gently inspected with the Sims speculum for the strings. Trans cesarean intrauterine device was inserted through open uterine incision with the help of a rings forceps and left at fundus. Uterine incision closed without trimming the threads.

Upon discharge a PPIUCD follow up card was given which contained all the relevant information. Patients were discharged postnatally if they were clinically well, haemo-dynamically stable, fully mobilized with minimal bleeding and pain. Patients were explained warning signs like fever, abdominal pain, heavy bleeding and foul smelling discharge and were advised to report if they experience any warning sign or if the IUCD expelled They were instructed to report cardiac symptoms like palpitations, difficulty in breathing, chest pain and dizziness. All women were offered a follow-up appointment with a doctor after four-six weeks.

At four weeks interval those women whom the PPIUCD was inserted were reassessed by checking their oral temperature. An abdominal examination for suprapubic tenderness and involution of the uterus was done. A digital vaginal examination was then done to assess for cervical motion tenderness. Expulsion was taken when IUCD was not visualized on followup or women reported visually witnessing expulsion confirmed by scan. Pelvic infection was oral temperature of 38 degree C or higher on two occasions with suprapubic tenderness, cervical motion pain, adnexal tenderness and palpable mass. A speculum examination was then performed to check if the strings were visible and any discharge noted. The visible IUCD strings were trimmed at approximately 3 cms. Lost strings were when strings were not visualized despite confirming that IUCD is in situ by USG. Acceptance and safety were the primary outcome measures and taken as parturient who agreed on insertion of PPIUCD within 48 hours of delivery. Safety was assessed by amount of blood loss, abdominal pain, and syncope. Gynecological complications including expulsion, perforation, lost strings and pelvic infection were studied.

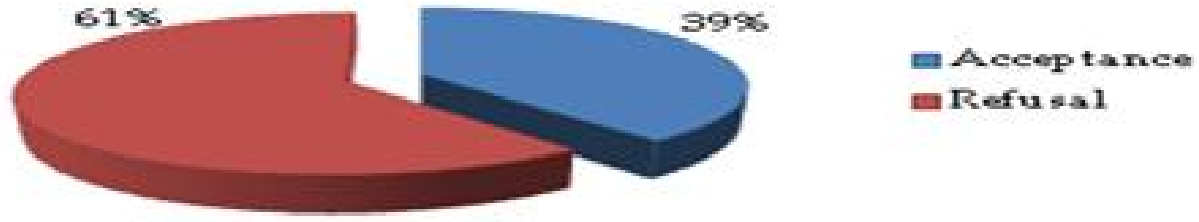

Figure-1: Postpartum intrauterine contraceptive devices insertion among patients.

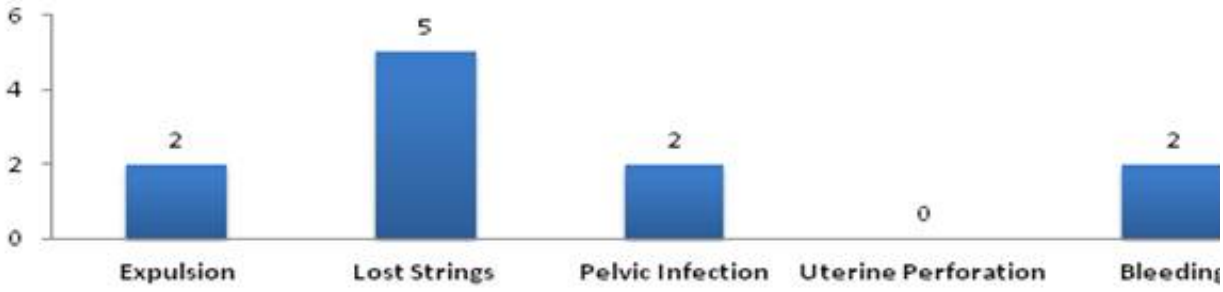

Figure-2: Gynecological complications among the patients.

Cardiac complications studied were arrhythmias, ischaemic episodes thromboembolism and infective endocarditis. As a secondary outcome long term safety was assessed by pregnancy and continuation of ppiucd method at 6 months post insertion.

Data were collected and analyzed using SPSS version 21. Continous variables age and parity, were described as mean ± SD. Categorical variables including acceptance, previous contraceptive use, reasons for declining PPIUCD were noted. Gynecological and cardiac complications including expulsion, perforation, lost strings and pelvic infection, arrhythmias, ischemic episodes, thromboembolism and infective endocarditis were expressed as percentages. Long term safety was assessed by pregnancy and continuation of PPIUCD method at 6 months. Descriptive statistics were used to describe the data, and frequency and percentage were calculated.

RESULTS

A total of 170 patients delivered during the study period. Of these women 108 (63.5%) were eligible for PPIUCD insertion according to eligibility criteria and 42 (38.8%) accepted PPIUCD as a method of contraception.

The reason for refusal were Fear of disease 20 (30.3%), Husband's disapproval 10 (15.2%), preference of another method 28 (42.4%), no reason 08 (12.1%). Mean age and parity was 28 ± 5 and P2 ± 1.5.70% patients were educated till secondary level and 30% till primary. Patients with variety of cardiac lesions were amongst the participants. Mitral valve was the dominant valve involved in 58.8% followed by double valve replacement in 14.7%, dilated cardiomyopathy 11.76%, aortic valve involvement in 8.8% and supra ventricular tachycardia in 5.9% patients.

Previous contraceptive use was reported by only 15(35%) patients. Immediate safety was assessed by blood loss 150.32 ± 50, pain (numeric 1-10 pain rating scale) of 1.86 ± 1.68 and syncope in 1 (2.3%).

Gynecological complications were reported in 11 (26%) and cardiac complications were 6 (14%) (table-I). Long term safety at follow up was assessed at six months as 30 (85.7%) continued it,

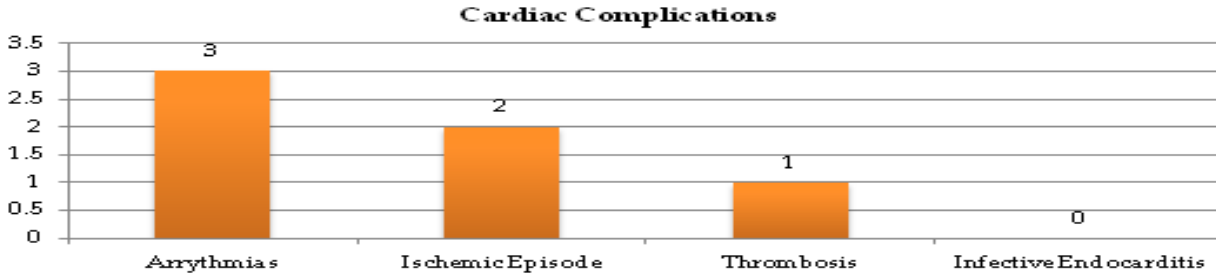

Figure-3: Cardiac complications among the patients.

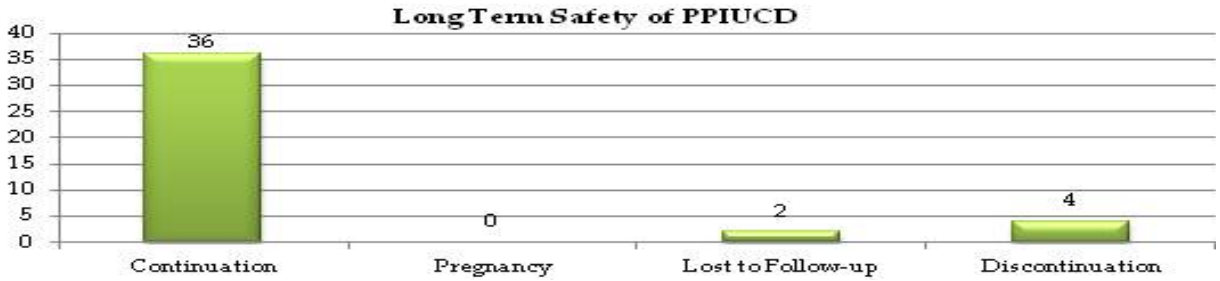

Figure-4: Safety of postpartum intrauterine contraceptive devices among the patients.

(9.5%) discontinued due to bleeding, 2 (4.8%) were lost to follow up and there was 0 (%) pregnancy.

DISCUSSION

Many contraceptive choices are available in Pakistan. There is some limitation in their use due to cardiac disease. But cardiac patients are the ones who would benefit most as mistimed and unplanned pregnancy is most dangerous in these high risk patients. Cardiac patients are unique considering they cannot be given conventional drugs like oral contraceptive pills and IUCD insertion is limited in certain structural heart disease but for most of cardiac lesions intrauterine devices are in MEC 1 or 2 making them a safe choice[3]. A very few studies have addressed safety of contraceptive use in patients with cardiac disease so most of the evidence is drawn from generally healthy population[7]. The World Health Organization recently revised guidelines on postpartum and newborn care includes provision of family planning counseling as a core component of postpartum care[8]. The postpartum period is potentially an ideal time to begin contraception as women are more strongly motivated and also has the advantage of being convenient for both patients and health-care providers. Age and parity of the woman were 28 ± 5 years and P2 ± 1.5.70% which is comparable to other studies on PPIUCD insertion[9].

The acceptance of PPIUCD was high in the parturients studied 42 (38%) but comparable to other studies done globally in spite of it being a newer technique which show acceptance of 28.9%[10]. Reason for not accepting PPIUCD in this study was Fear ofdisease 20 (30.3%), preference of another method 28 (42.4%) followed by fear of disease progression in 20 (30.3%) comparable to another study in which fear of complications from PPIUCD were the main reason for refusal[11]. Studies have shown that postpartum IUCD insertions, including those done immediately after placental delivery or cesarean section, are generally safe and effective and do not increase the risk of infection, bleeding, uterine perforation or endometritis[12]. In a Cochrane Collaboration review of nine randomized controlled trials assessing the feasibility of immediate PPIUCD found out that expulsion rates were generally higher for the immediate postpartum than interval insertion. However, expulsion is less likely to occur with proper technique[12,13]. Overall the PPIUCD insertion was safe and effective with minimal bleeding and pain like in this study[14] (fig-1). The risks of pelvic infection appear to be no greater with postpartum insertion than with interval insertion. For immediate postpartum insertions the cumulative six-month pelvic inflammatory disease (PID) rate was 1.4 to 2 per 100 women[15] as compared to 4.7% in this study. Absence of uterine perforation[16] with extremely low rates of expulsion 2 (4.7%), and lost strings 5 (11%) are strong indicators of safety at follow up. Expulsion rate of 4.7% is quite low as in another study the expulsion rate was 9% postplacental and 37% if placed postpartum[17] (fig-2). Cardiac complications are least with intrauterine devices including copper IUD'S and intrauterine levonorgesteral containing devices as shown in this study and also from faculty of sexual and reproductive healthcare clinical guidance for Contraceptive choices for women with cardiac disease[7,18] (fig-3). Even postpartum insertion was not found to increase the risks like in general population. There were no terminations of PPIUCD on medical grounds. Long term safety was by continuation 30 (85.7%) and 0 (0%) pregnancy[19] (fig-4).

Limitations of This study were that it was conducted in a tertiary care cardiac centre therefore the findings may not adequately reflect the general population. Also the population studied had inherent medical risks so the complications and long term safety concerns might be over emphasized. Contribution of this study is giving confidence in widening contraceptive method choice in these high risk patients who would benefit most with this readily available safe and long acting contraceptive method.

CONCLUSION

Postpartum intrauterine device insertion is a safe and valid option in selected cardiac patients who would benefit most from this long acting reversible contraceptive method. There is no increased risk in cardiac patients compared to general population

CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

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