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Original Research Article

Comparative Study of Complications and Continuity Rate in IUD Placed Right After Childbirth and the Delayed Insertion

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Abstract

Objective: To compare the continuity and complications arising from intrauterine device (IUD) insertion immediately after childbirth with delayed insertion at postpartum visit.

Methods: The patients age, parity, socioeconomic status, breast feeding were matched in 200 patients who have delivered vaginally in a tertiary care centre and 100 each were allotted to the two subgroups and they were followed for an year for complications and continuity rate.

Results: The study found a five times increased risk of expulsion, six time increased risk of threads coming out, abnormal bleeding patterns three times more in IUD inserted immediately after childbirth when compared to delayed insertion. There were no cases of perforation or unwanted pregnancies in both the groups.

Keywords: IUD, Expulsion, Abnormal uterine bleeding, continuation rate, uterine perforation.

Introduction

The contraceptive method we used is copper IUD which is considered as a standard contraception method for parous women .These IUD'S are effective devices for birth control, are inexpensive and act for longer duration [1]. Their contraceptive effect can be easily reversed on removal of the IUD. Their cumulative pregnancy rate is less than 1% in the first year of insertion. These can be used in lactating mothers with no adverse effect on the baby.

Usually the postpartum contraception with IUD is planned during their visit at 6 weeks postpartum giving time for uterus to involute, time for bleeding to subside and also to prevent puerperal sepsis. As the number of delivered women turning up after childbirth after 6 weeks is unpredictable and the increase in unwanted and early pregnancies is on the rise as ovulation can start as early as four weeks after delivery[2], the government has initiated the on table insertion of IUD either in vaginal or caesarean section. Although we advise to avoid intercourse for six weeks after delivery, percentage of people abiding the instruction are meager. In addition to it those coming to postnatal checkup after six weeks is less, due to high rate of illiteracy and low socioeconomic status in turn decreasing the chance of usage of contraception. These factors increase the chance of early, unwanted pregnancies further deteriorating the health of the women.

These all factors led to increase in the insertion of copper IUD immediately after

birth within 10 minutes after delivery [3]. The common complications we encounter with copper IUD insertion are- Perforation, Expulsion, infection, failure and menorrhagia. The WHO has classified the CuT380A as category 1 medical eligibility for contraception when used immediately after delivery. The perforation rate is <2 per 1000 insertions, expulsion is 2 to 10% of cases, risk of PID is 6 fold in the first 20 days of insertion and menorrhagia is the most common complication accounting for 12-30%. (WHO)

On the approval by WHO and the government, the immediate insertion is being practiced by many countries and since then a lot of studies are undertaken to compare the efficacy of this immediate placement with that of postpartum placement of IUD after 6 weeks of delivery. Sarika sonalkar et al compared the pregnancy rate in 1 year in these two groups with a theoretical cohort of 250,000 and 1,250,000 women intending to receive a post-placental IUD after normal vaginal delivery and after caesarian section respectively with a cohort of 2,500,000 women intending for delayed placement. Mohamed et al compared the acceptance rate between the two groups. A study in maternity hospital of Minia University by Ahmed Abdel – Ghany et al compared 100 individuals from each group for failed IUD insertions, perforations, missed threads, menorrhagia, vaginal infection, displacement, expulsion and unintended pregnancy.

Similar studies were done by Levi et al 2012 and Eroglu et al 2006 regarding expulsion rate and complications in both the groups. A meta-analysis in 2015 including only 4 studies and Kapp et al 2009 also published the comparative expulsion rates in both the groups.

Hubacher et al 2009 compared the menorrhagia and dysmennorhea in both the groups whereas Bhutto et al 2011and Celen et al 2011compared all the immediate and remote complications in these two groups

For a period of 17 years from 2001 to 2018, Dr Susan Reed compared the different outcomes in both the groups in a total cohort of 326,000. Similarly APEX-IUD, a largest study also compared the expulsion rates in both the groups.

In this study we compared the side effects in the two subgroups for one year (immediately after delivery and after 6 weeks) and results were obtained.

Materials & Methods

A total of 200 patients who delivered vaginally were matched with their socioeconomic status, parity, gravid, gestational age at the time of delivery, BMI, age (20 to 25 years) and breast feeding pattern and were divided into two groups. 100 of them were inserted CuT380A immediately after delivery (within 10 minutes) and rest 100 had the same loop inserted at 6 weeks postpartum. They are educated about the benefits and side effects of IUD and only those who gave their consent for insertion were taken into the study. This was done in a maternity hospital from September 2021 to November 2022.

Those with uterine anomaly, intrauterine infection, unable to give consent, bleeding disorder, rupture uterus, suspicious for pregnancy, history of ectopic pregnancy, rupture of membranes > 12 hrs and any contraindication for IUD like neoplasia, allergy to copper are excluded from study.

The various complications in each group were observed for a year along with the continuation rate. The complications which were noted are:

1. Menorrhagia and abnormal bleeding after delivery, continuous bleeding for months after delivery or excessive bleeding during menstrual cycle

2. Expulsion IUD no longer in uterus, identified by patient complaint of

expulsion, per speculam examination every month, trans vaginal ultrasound if threads were not visible on per speculam examination.

3. Perforation Patient symptoms of abdominal pain or AUB confirmed with transvaginal ultrasound and x-ray of abdomen if suspected perforation.

4. PID Patient symptoms of vaginal discharge, lower abdominal pain, confirmed with Doppler ultrasound and swabs.

5-Threads coming out of vagina causing discomfort, Threads felt outside the vagina and discomfort during coitus

If on ultrasound scan the distance between endometrium and tip of the loop is more than 3mm it is taken as displacement.

6. Continuation of IUD for an year, Per Speculam examination every month and transvaginal ultrasound when needed.

7. Failure rate Pregnancy confirmed with amenorrhea, symptoms of pregnancy, urinary HCG test and trans-vaginal ultrasound

8. Patient satisfaction with IUD, Scoring on 1 to 5 scale for the answer given by the patient for "I am satisfied with the IUD insitu".

1. Strongly disagree, 2. Disagree, 3. Neutral, 4. Agree, 5. Strongly agree

The findings in each category were tabulated and observations were compared between the two groups.

Results

Total of 200 study population with IUD inserted after child birth of which

100 inserted with IUD immediately after delivery (series 1)

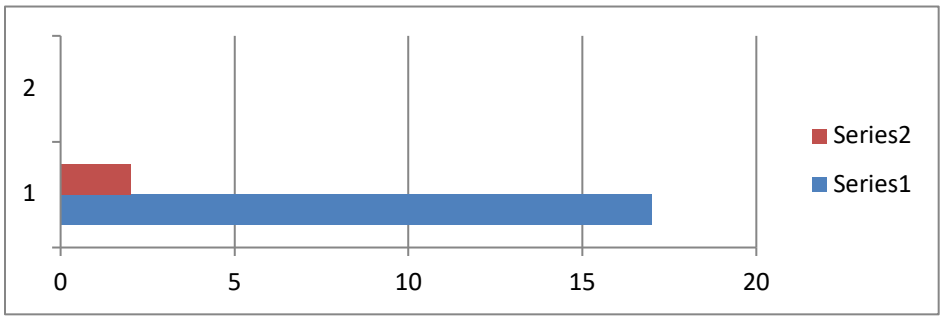
100 inserted with IUD after 6 weeks of delivery (series 2)

Various parameters that were followed in both the groups and the results obtained were tabulated

1. **Displacement of loop with threads felt outside of vagina**

Series 1---those who had loop inserted immediately	17
Series 2---- those who had loop after 6weeks of delivery	2

Nearly 8 fold increase in risk of displacement of loop on insertion immediately after delivery when compared to insertion after 6 weeks of delivery

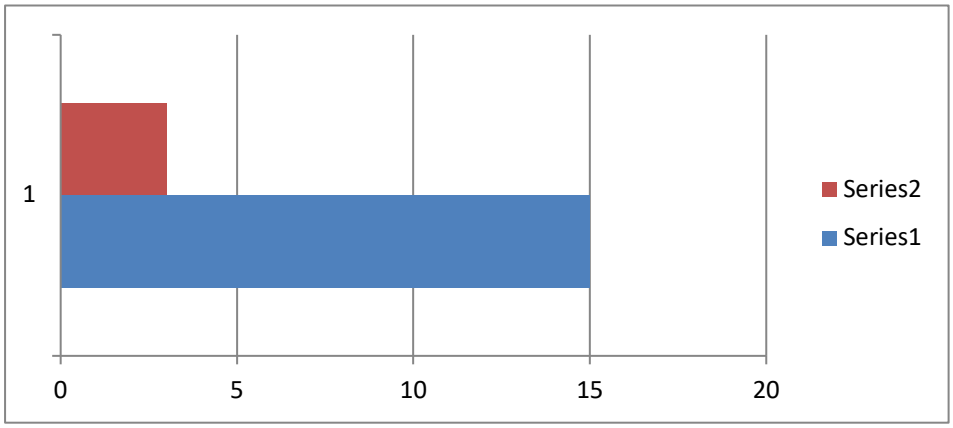


2. **Perforations in both were nil**

Series 1---those who had loop inserted immediately	0
Series 2---- those who had loop after 6weeks of delivery	0

3. Expulsions

Series 1---those who had loop inserted immediately	15
Series 2---- those who had loop after 6weeks of delivery	3

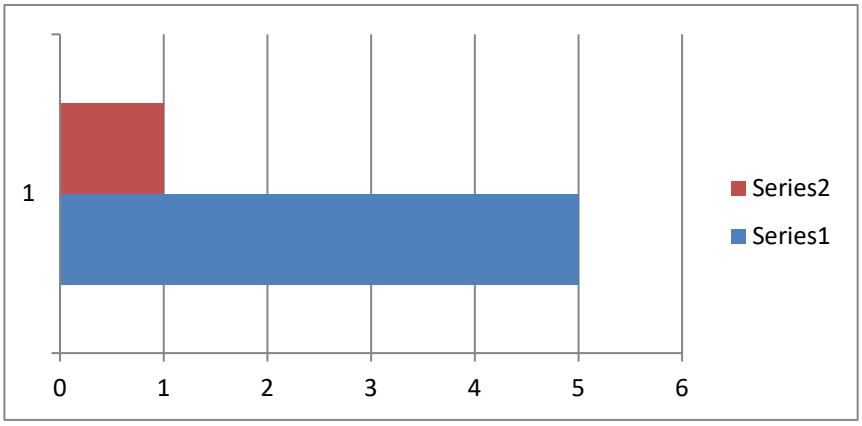


There is a five-fold increase in expulsion rate in immediate group when compared with delayed insertion

4. PID

Series 1---those who had loop inserted immediately	5
Series 2---- those who had loop after 6weeks of delivery	1

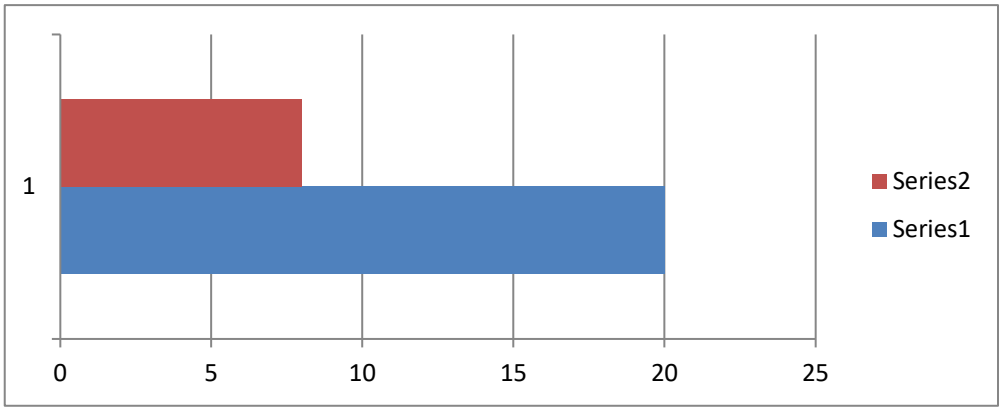
It was found that immediate insertion carries a five-fold increased risk in PID when compared with delayed group.



5. Menstrual irregularities along with menorrhagia and continuous bleeding after delivery for months

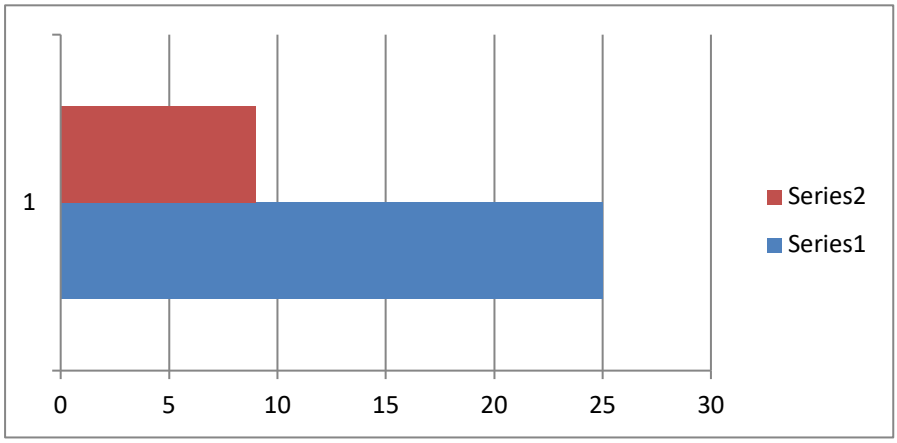
Series 1---those who had loop inserted immediately	20
Series 2---- those who had loop after 6weeks of delivery	8

There is a 2.5 fold increase in bleeding abnormalities in series 1 when compared to series 2.



6. Discontinued

Series 1---those who had loop inserted immediately	25
Series 2---- those who had loop after 6weeks of delivery	9



The discontinuation rate is higher in immediate insertion group when compared with the delayer insertion group. This may be due to displacement, PID and bleeding abnormalities which were found to be higher in immediate group.

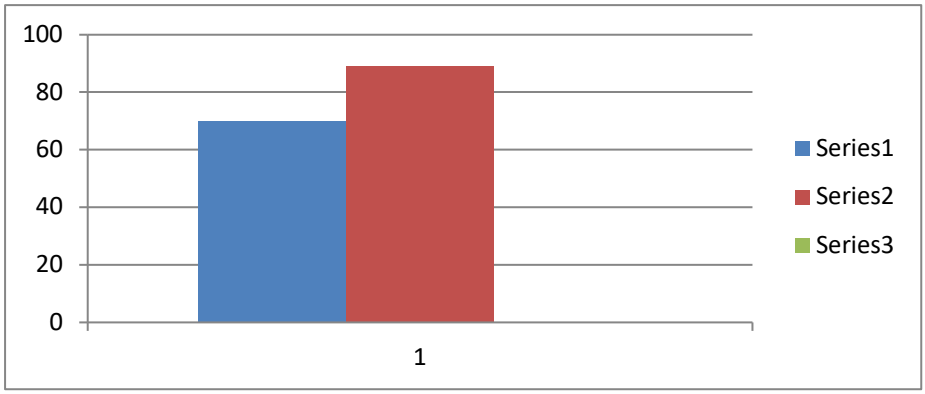
7. Unintended pregnancies

Series 1---those who had loop inserted immediately	0
Series 2---- those who had loop after 6weeks of delivery	0

There were no unintended pregnancies in both the groups when followed for a period of one year.

8. Satisfaction rate

Series 1---those who had loop inserted immediately	70%
Series 2---- those who had loop after 6weeks of delivery	89%



On the whole the satisfaction rate was higher in delayed insertion group rather than in immediate insertion group.

Discussion

In our study, the expulsion rate in immediate placement cohort was five-fold when compared to delayed placement.

Similarly, the Displacement was eight fold in immediate placement group to that of delayed cohort.

This finding is similar to the observations made by Apex-IUD, Dr Susan Reed where they found a four-fold increase in the immediate group than the delayed. Celen et al also found similar increase of five-fold along with Eroglu et al [4] and Kapp et al [5] in their studies.

Contrary to this, the study in maternity hospital Minia University by Ahmed Abdel Ghany et al [6], Bhutta et al [7] and Levi et al found no difference in expulsion rates. Acceptance rate –In our study acceptance rate was higher in delayed insertion cohort with 2.5 fold increase in discontinuation rate in immediate placement compared to delayed.

This correlates with the findings of Celen et al [8] with fivefold increased discontinuation rate in delayed placement. It may be due to expulsion or other medical reasons. The findings in Mohamed et al are contradicting this, resulting in increased acceptance in immediate cohort.

Menorrhagia-There was a 2.5 fold increase incidence of menorrhagia in immediate placement when compared to delayed IUD insertion.

This finding is similar to that of Hubachen et al whereas there was no difference in both the groups in other studies like Ahmed Abdel Ghany et al [4] and Bhutta et al [5].

The incidence of PID was 5 fold in immediate group of our study than delayed insertion group. This may be due to lower socio economic status with poor hygiene, local tradition of not taking bath for 11 days after delivery.

This finding was not significant in Bhutta et al, Celen et al [6] as there was no difference in both the groups.

Rate of perforation was nil as no cases of perforation were noticed in both the cohorts in our study. The same results were seen in Bhutta et al and Kapp et al [7] where as in the Ahmed Abdel Ghany et al study it was found to have a 5 fold increase in perforation in delayed group than immediate group.

There were no unintended pregnancies in both the groups of our study which is same in Ahmed Abdel Ghany et al study.

But In Dr Susan Reed et al [8] study there was an increase in unintended pregnancies in immediate group as unnoticed expulsions were more in that group.

Conclusion

Though immediate insertion of loop after delivery prevents the unwanted and early pregnancies, it was found that the lowered patient satisfaction, increased expulsion,

displacement, bleeding for months after delivery and PID on the rise lead to higher discontinuation rates. The main limitation of this study was the time frame of 1 year. As in our region, regular follow up of pregnant patients and delivered patients at their homes by nurses and volunteers is being followed, if motivated the delayed insertion after 6 weeks seems to be better than the immediate placement after delivery.

A larger study, including many randomized controlled trails is needed to assess the various complications in these two different groups [9] as it has been demonstrated in many studies that immediate insertion of IUD is a secured alternative for delayed insertion of IUD[10].

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