

# Comparison of Frequency of Menorrhagia after Immediate Versus Delayed Intrauterine Contraception Device (IUCD) Insertion

Menorrhagia  
after Immediate  
VS Delayed  
Intrauterine  
Contraception

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## ABSTRACT

**Objective:** To compare the frequency of menorrhagia after immediate versus delayed intrauterine contraception device insertion.

**Study Design:** Randomized controlled trial.

**Place and Duration of Study:** This study was conducted at the Department of Obstetrics & Gynaecology, QAMC Bahawalpur from 14<sup>th</sup> February 2019 to 13<sup>th</sup> August 2019.

**Materials and Methods:** A total of 110 women willing for intrauterine contraceptive device insertion of age 18-40 years were included. Women having sepsis, PROM, uterine anomalies & fibroid uterus were excluded. Group A included the women in which intrauterine contraceptive device was inserted within 24 hours of delivery and Group B included the women in which intrauterine contraceptive device was inserted after 6 weeks of delivery. All the above patients were tracked for 3 months by the researchers themselves for presence or absence of menorrhagia.

**Results:** The mean age was found to be  $28.67 \pm 5.72$  years in group A and  $29.02 \pm 5.63$  years in group B. The mean parity in both groups were 3. Menorrhagia in group A (immediate IUCD) was seen in 04 (7.27%) and in group B (delayed IUCD) was seen in 24 (25.45%) females with p-value of 0.010.

**Conclusion:** This study concluded that there is less frequency of menorrhagia after immediate IUCD compared to delayed intrauterine contraception device insertion.

**Key Words:** Intrauterine Devices, Post-Placental, Menorrhagia, Contraception

**Citation of article:** Yasmin S, Jabeen S, Younus S, Saeed S. Comparison of Frequency of Menorrhagia after Immediate Versus Delayed Intrauterine Contraception Device (IUCD) Insertion. Med Forum 2021;32(2):133-137.

## INTRODUCTION

Intrauterine devices are the most cost effective long-acting reversible contraceptives (LARC).<sup>1</sup> Globally, 14.3% of women of reproductive age use intrauterine contraception, more than 80% of them live in Asia, with almost 64% of them reside in China.<sup>2</sup>

The efficacy of copper IUCDs, especially the TCu 380A when used over long period of time, has shown equivocal results in comparison with tubal sterilization, with additional benefit that it can be removed anytime, & is a reversible method.<sup>3</sup> The main drawback of IUCD contraception is dysmenorrhea and heavy menstrual bleeding which may end up in its early removal & sometimes it is expelled spontaneously.

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Received: August, 2020

Accepted: October, 2020

Printed: February, 2021

There are various factors that may affect the outcome of IUCD use and many researchers have studied on them.<sup>4,5</sup> Reported failure rate of IUCD is 0.8/100 women at one year and at the end of 10 year use, failure rate is 1.9/100 women which is almost similar to female sterilization.<sup>6</sup> FDA has approved that if copper IUC is left in place for 10 years, its efficacy does not lost. According to medical eligibility criteria WHO, post-placental insertion of Cu T is recommended in both lactating & non lactating moms.<sup>7</sup> Post placental insertion & birth by caesarean section are linked with lesser expulsion rates in comparison of delayed insertion & vaginal births. It was observed that risk of complications like perforation and infection linked with insertion of IUD are not increased if it is placed in post-partum period.<sup>7</sup>

IUCD may be inserted in postpartum period, post abortal or in interval period.<sup>8</sup> IUD insertion within 48 hours after childbirth is labeled as Post-partum IUD insertion. While if it is inserted within 10 minutes of placental expulsion is referred as post placental IUD insertion. In 1970 first time concept of post-partum IUD insertion was floated.<sup>9</sup> PPIUCD has the advantage of convenience, saves time of additional visit, & associated with less complaints of initial dysmenorrhea, & menorrhagia without increase in risk

of uterine perforation.<sup>11</sup> Over the period of time, improvements in expulsion rates have been reported lesser more recently.<sup>12,13</sup> In a study, the incidence of menorrhagia after immediate IUCD insertion was found to be 5.2% and after delayed IUCD insertion was 21.2%.<sup>12</sup> In another study, it was found to be 4.0% in both groups.<sup>13</sup>

As the menorrhagia is the most common complaint after intrauterine contraceptive device insertion and previous studies described above have shown controversial results regarding the better time of IUCD insertion, so the purpose of this research work was to compare the incidence of menorrhagia after immediate postpartum versus delayed intrauterine contraception device insertion in local population. As the ethnic factors have great impact on the tolerability and efficacy of contraception devices, so our study will provide the local stats in this regard. Then depending upon these findings, the appropriate timing with less incidence of menorrhagia can be opted in our routine practice guidelines and our population can be motivated and encouraged for using contraception to improve maternal & family health.

## MATERIALS AND METHODS

It is a Randomized Controlled trial, conducted at Department of Obstetrics & Gynaecology QAMC, from 14<sup>th</sup> February 2019 to 13<sup>th</sup> August 2019.

After approval from the ethical review committee, 110 women willing for intrauterine contraceptive device insertion after child birth in OBGY department of QAMC, Bahawalpur were selected. They were of age 18-40 years, & parity ranging from 2-6. Women having sepsis, PROM, uterine anomalies, fibroid uterus, & who did not returned back were excluded. After explaining the merits and demerits of study and taking informed written consent, all selected cases were divided randomly in 2 equal groups (A & B). Group A included

the women in which intrauterine contraceptive device was inserted within 24 hours of delivery and Group B included the women in which intrauterine contraceptive device was inserted after 6 weeks of delivery. Following IUD insertion, patients were asked to visit within 4 weeks. At this first follow-up visit, any complaints were asked & on examination the IUD strings are confirmed.

Follow-up for 3 months were done for all patients by the researcher themselves for presence or absence of menorrhagia (>80ml menstrual blood loss/month). Menorrhagia was assessed after 3 months of insertion by using Pictorial Blood Assessment Chart (PBAC) and was taken as positive if both of these present i.e. blood loss lasting longer than 7 days and PBAC score >50. All this data was entered on a specially designed proforma

**Statistical Analysis:** SPSS version 22.0 was used to enter & analyze all the data. Age, and BMI were presented as mean and standard deviation. Parity, mode of delivery, hypertension, diabetes mellitus, & menorrhagia (present/absent) were presented as frequency and percentage. Chi square was used to compare the menorrhagia of both groups and p-value  $\leq 0.05$  was considered as significant.

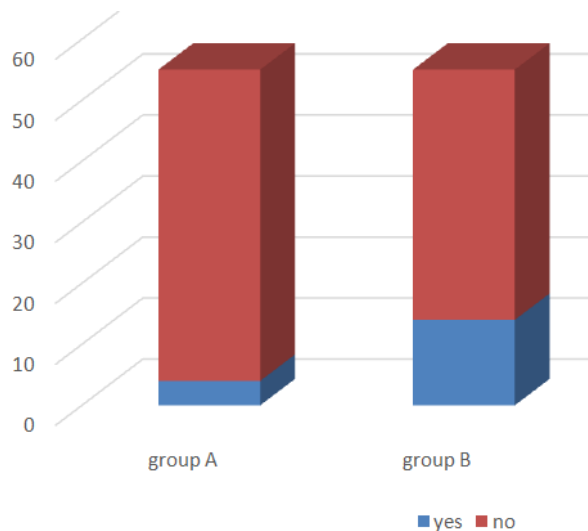
Effect modifiers like age, BMI, parity, mode of delivery hypertension & diabetes mellitus were controlled through stratification and chi square was then applied to see their effect on menorrhagia (post-stratification). P-value  $\leq 0.05$  was considered as significant.

## RESULTS

Age range in this study was from 18 to 40 years with mean age of  $28.89 \pm 5.68$  years. The mean age of women in group A was  $28.67 \pm 5.72$  years and in group B was  $29.02 \pm 5.63$  years. Majority of the patients 70 (63.64%) were between 18 to 30 years of age as shown in Table I.

**Table No. 1: Comparison of patients with regard to Group**

	Group A		Group B		Total	
	No. of patients	%	No. of patients	%	No. of patients	%
Age(yrs)						
18-30	33	60	37	67.27	70	63.64
31-40	22	40	18	32.73	40	36.36
Mean+SD	28.67+5.72		29.02+5.63		28.89+5.68	
Parity						
2-3	33	60	37	67.27	70	63.64
4-6	22	40	18	32.73	40	36.356
Mean +SD	3.02+1.11		3.16+ 0.96		3.11+1.05	
BMI						
< 27	21	38.18	18	67.27	39	35.45
> 27	34	61.82	37	32.73	71	64.55
Mean +SD	28.44 $\pm$ 2.46		27.85 $\pm$ 2.25		28.14 $\pm$ 2.33	
Mode of delivery						
Vaginal	29	52.73	19	34.55	48	43.64
Cesarean	26	47.27	36	65.45	61	56.36
Past history						
Hypertension	16	19.09	20	36.36	36	32.73
Diabetes	10	18.18	13	23.64	23	20.91



**Figure No.1: Bar graph showing frequency of menorrhagia after immediate versus delayed intrauterine contraception device insertion (n=110).**

**Table No.2: Detail of Menorrhagia with regard to Group A and B.**

	Group A menorrhagia		Group B menorrhagia	
	Yes	No	Yes	No
<b>Age(yrs)</b>				
2-3	1	32	11	26
4-6	3	19	3	15
<b>BMI</b>				
< 27	1	20	6	12
> 27	3	31	8	29
<b>Mode of delivery</b>				
vaginal	1	28	6	13
Cesarean	3	23	8	28
<b>Hypertension</b>				
yes	1	15	2	18
no	3	36	12	23
<b>diabetes</b>				
Yes	1	9	4	9
No	3	42	10	32

The Table 1 showing the mean parity in group A was  $3.02 \pm 1.11$  and in group B was  $3.16 \pm 0.96$ , & the mean BMI in group A was  $28.44 \pm 2.46 \text{ kg/m}^2$  and in group B was  $27.85 \pm 2.25 \text{ kg/m}^2$ . Distribution of patients according to mode of delivery, hypertension and diabetes mellitus in both groups is also shown in Table 1.

Menorrhagia in group A (immediate IUCD) was seen in 04 (7.27%) and in group B (delayed IUCD) was seen in 24 (25.45%) females with p-value of 0.010 as shown in figure/graph 2.

Stratification of menorrhagia with respect to age, parity, BMI, mode of delivery, hypertension and diabetes mellitus in both groups is shown in Table 2.

## DISCUSSION

The intrauterine device (IUD), is a type of long acting reversible contraception (LARC), considered one of most safe & effective birth spacing methods. As this is a patient-independent method, so it is related with low rate of unplanned pregnancies which increases its efficacy.<sup>13</sup> Recent literature supports its safety in terms of low rates of, perforation, infection and expulsion that make it an appropriate contraceptive choice for all women of reproductive age.

Short inter-pregnancy interval (<than 2years) has been related with increased maternal & infant morbidity and mortality when it is correlated to long inter pregnancy intervals.<sup>14,15</sup> To achieve this recommended pregnancy spacing, postpartum IUD insertion is an ideal choice. As counseling services by health care providers are easily available in the immediate postpartum period so women are more determined & motivated for birth spacing.<sup>16</sup> Insertion of the IUD can be done at any time from 48 hr after delivery of the placenta, till 4-6 week postpartum.<sup>17,18</sup> Although the expulsion rate is high with immediate placement but its role to prevent unplanned pregnancies may predominates the risk of expulsion.<sup>17,18</sup>

It can be associated with menorrhagia, dysmenorrhea & spontaneous expulsion. We carried out this research to compare the frequency of menorrhagia after immediate versus delayed intrauterine contraception device insertion.

The results of my study & a study conducted by Jain N & colleagues, supported that immediate insertion is associated with less chances of menorrhagia<sup>11</sup>. My study showed that menorrhagia in group A (immediate IUCD) was 04 (7.27%) and in group B (delayed IUCD) was 24 (25.45%) that found to be significant. While Jain N & colleagues, concluded that incidence of menorrhagia after immediate IUCD insertion was found to be 5.2% and after delayed IUCD insertion was 21.2%. Interestingly Srivastava S & his colleagues found equal no of percentage (4%) of menorrhagia in both groups.<sup>12</sup> Indian researchers also strengthened the results of our study, they found incidence of irregular vaginal bleeding was 23.5% in PPIUCD group and 88.5% in interval IUCD group.<sup>1</sup> Shukla et al found occurrence of menorrhagia (27.2%) as a frequent complaint, when CuT 200 was inserted in postpartum women.<sup>15</sup> Many other researchers also noted same correlation of menorrhagia & dysmenorrhea (6% to 8%) with use of CuT-380 that ultimately ended up in its removal.<sup>19,20</sup> The different rates of bleeding problems are probably associated with different types of IUCD.

Celen S et al (2004)<sup>21</sup> reported cumulative rates of bleeding equalant to 11.4% and 8.2% respectively. Another study highlighted that post-partum insertion is more superior than interval Cu-T insertion with few expulsions and low rate of complications.<sup>22</sup> Immediate

insertion group was linked with less occurrence of heavy menstrual bleeding because there was different duration of lactational amenorrhoea in the postpartum period. To overcome this bias of lactational amenorrhoea, long duration of observation is needed. Ei-Shafei et al noted, that in women whom CuT380A was inserted within 10 min after placenta delivery, 9% of them develop menorrhagia when followed for 1 year.<sup>23</sup> Eroglu et al mentioned that in post placental group, menorrhagia was observed in 2/84 clients, in comparison to interval/delayed insertion group where 8/130 complained of menorrhagia. All patients were followed for 1 year. These findings matched with our study results.<sup>24</sup>

The study showed that maternal age is an important factor in contraceptive acceptance. A study by Usha Ram et al have shown that the unmet need for birth spacing is alarmingly high. He highlighted the higher number (56%) of IUCD users belong to the age group of 21-25 years' followed by the 32% in women of 26-30 years' group.<sup>25</sup> Our study showed that majority of the acceptors also belonged to 20 – 30 years of age showing the need to catch them young for proper spacing and limiting of births. In a study published by a teaching institution in Nigeria showed that model age group of participants was 25-29 years (32.5%) among 852 IUCD acceptors.<sup>26</sup>

A study pointed out that PPIUCD was more popular method among multiparas (73.3%) as compared to primis (26.7%).<sup>27</sup> According to Rivero-Fuentes et al women's selection for any contraceptive method is influenced by their knowledge about post-delivery return of fertility and resumption of sexual activity (40% in <3 months and 90% by one year) hence focus should be on young primiparas who are reluctant to return for interval contraception.<sup>28</sup>

The satisfaction rate of PPIUCD found in one study was 93%, irrespective of complaints of complications like expulsion, menorrhagia, & infection.<sup>29</sup> Now world has realized that postpartum family planning can be a game changer for prevention of unplanned pregnancies (within the first year after childbirth) & to prolong the inter-pregnancy interval.<sup>30</sup>

## CONCLUSION

This study concluded that there is less frequency of menorrhagia after immediate IUCD compared to delayed intrauterine contraception device insertion. So, we recommend that immediate IUCD insertion after delivery should be used as a best time for insertion in order to decrease the complications as well as morbidity of these women.

### Author's Contribution:

Concept & Design of Study: Shakila Yasmin  
 Drafting: Salma Jabeen  
 Data Analysis: Sidra Younus, Shazia Saeed

Revisiting Critically: Shakila Yasmin,

Salma Jabeen

Final Approval of version: Shakila Yasmin

**Conflict of Interest:** The study has no conflict of interest to declare by any author.

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