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COMPARISON OF OUTCOME OF C SECTION WITH N WITHOUT IUCD INSERTION

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Abstract:
Objective: *To compare the outcome of C-section with and without postpartum IUCD insertion in terms of frequency of bleeding and wound infection.*
Methodology: *The design of this study is Randomized controlled trial and this study was conducted in Gynecology Department of Allied Hospital from December 2013 to June 2014. Group A included 151 patients who had IUCD inserted at caesarean section. Group B also included 151 subjects who had caesarean section without IUCD insertion. Wound infection and amount of bleeding was recorded. Bleeding said to be heavy when there is passage of clots or 3-4 pads soaked per day within three days of caesarean section. Wound is infected when there is discharge from wound or there is fever of more than 100F within seven days of caesarean section.*
Results: *There was no significant difference between the two groups in terms of wound infection and bleeding. Wound was infected in 6.6%(n=10) in group A and 5.3%(n=8) in group B, p-value calculated as 0.627. Bleeding was heavy in 2.6%(n=4) in group A and 1.3%(n=2) in group B, p-value was recorded as 0.410. So there was no significant difference in both the groups in terms of bleeding and wound infection.*
Conclusion: *C-section with postpartum IUCD is equally better as compared to C-section without IUCD insertion in terms of bleeding and wound infection. Women undergoing caesarean section, who are desirous of, and suitable for using this method, should be given the option of IUCD insertion at the same time.*
Key Words: *C-Section - Caesarean Section, IUCD - Intrauterine Contraceptive Device.*

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INTRODUCTION:

Pakistan remains the 7th most populous country in the world with contraception being practiced by 30% couples [1]. Many people use contraception incorrectly and inconsistently [2]. IUCDs are the most commonly used method of reversible contraception and are second only to female sterilization as the most common form of birth control. Altogether, 13.6% of couples around the world have selected the IUD for birth control [3]. The method is safe, rapidly reversible, inexpensive, highly effective, long lasting and non-hormonal; these attributes make it unique and desirable for many users. It has been used by 150 million women worldwide [4]. Cochrane review showed that devices containing 380 mm^2 of copper have the lowest failure rate [5]. Caesarean section is commonly performed operation on women that is globally increasing in prevalence. A fair number of women undergoing C-section are good candidates for using IUCD for contraception. It offers obstetrician an opportunity to insert the IUCD into the uterus under-vision, thus obviating the fear of perforating the uterus during the procedure [1]. IUCD insertion immediately after C-section is ideal for some women, as it does not interfere with feeding, is convenient for both women and their health care providers, and is associated with less discomfort and fewer side-effects [6].

The usual side-effects associated with IUCD insertion after Caesarean section are bleeding (heavy lochia) and wound infection. Bleeding is said to be heavy when clots are passed. Wound was infected in 10% cases with IUCD insertion and 2% cases without IUCD insertion. Lochia was heavy in 4% cases with IUCD insertion and 0% cases without IUCD insertion [7, 8]. Postpartum IUCD insertion after caesarean section is a good choice for patients undergoing caesarean section as it would improve contraception rate, increase patient's compliance and offers women a chance to avail this method of contraception at the same time as they have caesarean section [9]. So the Rationale of my study is that if the immediate postoperative period after IUCD insertion is not affected in terms of wound infection and frequency of bleeding than it could be recommended locally [10].

MATERIAL AND METHODS:

The design of this study is Randomized controlled trial and this study was conducted in Gynecology Department of Allied Hospital from December 2013 to June 2014. After taking hospital Ethical Committee approval, indoor admitted patients who fulfilled criteria after explaining the procedure, risks and benefits, informed consent will be taken from them. Exclusion criteria will be strictly followed to limit confounding variables. Patients will be randomly divided into two groups by using computer generated random number table. Group A will include patients who will have IUCD inserted during C-section after delivery of baby, placenta and membranes. IUCD will be inserted through the incision in the uterus and the shortened thread pushed through the cervix from inside the uterus. The IUCD was not anchored to the uterus. Group B will include patients who will not have IUCD inserted after C-section and will serve as control group.

In postoperative period wound will be examined by postgraduate registrar on seventh postoperative day or whenever it is clinically indicated. Bleeding would be checked within three days of caesarean section. Patients will be discharged on fourth post-operative day and will be called in outdoor on 7th post-operative day for stitch removal by taking their contact number. All the information was recorded on a Proforma by me. Data will be entered and analyzed on SPSS V-10. Descriptive statistics will be calculated for all variables. Mean & standard deviation will be calculated for quantitative variables like age, frequency and percentage will be calculated for all qualitative variables like wound infection and bleeding. Chi-square test will be used as a test of Significance for qualitative variables like wound infection and bleeding. p- value $\leq$ 0.05 will be taken as significant. Effect modifies like age, gestational age, parity and type of C-section will be controlled by stratification.

RESULTS:

A total of 302 cases (151 in each group) fulfilling the inclusion/exclusion criteria were enrolled to compare the outcome of caesarean section with and without postpartum IUCD insertion. Out of the 302 subjects, age, gestational age and parity of the patients were recorded and their minimum and maximum values noted and Mean$\pm$SD calculated which are: age from 18-37yrs with Mean$\pm$SD of 28.05$\pm$4.69, gestational age from 37-42wks with38.68$\pm$1.37 and parity from 1-5 with 2.36$\pm$1.10 (Table 1). Table 2 shows distribution of age, gestational age and parity according to the groups (Group A with postpartum IUCD insertion and Group B without IUCD insertion- 151 pts in each group). The Mean$\pm$SD of the three variables noted in each group, group A has following values of 28.12$\pm$4.53, 38.70$\pm$1.40 and 2.19$\pm$0.91 respectively. Group B Mean$\pm$SD ratio of 27.97$\pm$4.85, 38.66$\pm$1.34 and 2.52$\pm$1.23 respectively.

Age distribution of the patients was done which shows that out of 302 subjects 44.4%(n=134) were of the age range of 18-27yrs and 55.6%(n=168) were 28-37yrs. In Group-A, out of 151 pts, 45%(n=68) were 18-27 yrs and 55%(n=83) belonged to 28-37yrs. In Group-B ,18-27 years included 43.7%(n=66) and 56.3%(n=85) for 28-37yrs. p-value calculated as 0.817 for age distribution (Table No.3) Gestational age of the patients was recorded, in Group-A 70.2%(n=106) and in Group-B 72.8%(n=110) were between 37-39 weeks of gestation with a total of 71.5% (n=216), while in Group-A 29.8%(n=45) and in Group-B 27.2%(n=41) were between 40-42 weeks of gestation, with a total of 28.5% (n=86), p-value calculated as 0.610 (Table No.4). Parity of the patients was recorded, in Group-A 24.5%(n=37) and in Group-B 25.2%(n=38) were prim gravida (total out of 302 were 24.8% n=75), While in Group-A 75.5%(n=114) and in Group-B 74.8% (n=113) were multigravida (total out of 302 were 75.2% n=227).

p-value for parity distribution calculated as 0.894. (Table No.5). In group A 15.9% (n=24) and in group B 12.6% (n=19) were elective CS and the total calculated as 14.2% (n=43). Emergency CS rate calculated as 84.1 % (n=127) and 87.4%(n=132) for group A and B respectively and total of 85.8% (n=259). p-value calculated as 0.410. (Table no. 6) wound infection distribution recorded in both groups and out of total 302 pts, 6.0%(n=18) had wound infection (which is described as discharge from wound or fever of more than 100F within seven days) and 94% (n=284) had no evidence of infection. In group A 10 pts (6.6%) and in group B 8 pts (5.3%) had wound infection while 141 pts (93.4%) and 143 (94.7%) were not infected, p-value calculated as 0.627 which shows that there is not significant difference in both the groups (Table no.7). Table 8 shows distribution of bleeding, out of 302 pts, 2% (n=6) had evidence of bleeding (which is said to be heavy when there is passage of clots or more than 3-4 pads soaked per day within 3days of CS) while 98%(n=296) had no evidence of excessive bleeding. In group A 2.6% (n=4) and in group B 1.3% (n=2) had bleeding. p-value calculated as 0.410 which shows that there is not significant difference in both the groups. Table 9 shows distribution of bleeding according to age. Table 10 shows distribution of wound infection according to age. Table 11 and 12 shows distribution of wound infection and bleeding according to gestational age, respectively. Table 13 and 14 shows distribution of wound infection and bleeding according to parity, respectively. Table 15 and 16 shows distribution of wound infection and bleeding according to type of C-section.

	n	Minimum	Maximum	Mean	Std. Deviation
age	302	18	37	28.05	4.69
gestational age	302	37	42	38.68	1.37
parity	302	1	5	2.36	1.10

TABLE 1: DESCRIPTIVE STATISTICS OF AGE, GESTATIONAL AGE & PARITY

TABLE 2: DESCRIPTIVE STATISTICS OF AGE, GESTATIONAL AGE, PARITY

group		n	Minimum	Maximum	Mean	Std. Deviation
group A	age	151	18	37	28.12	4.53
	gestational age	151	37	42	38.70	1.40
	parity	151	1	5	2.19	.91
group B	age		19	37	27.97	4.85
	gestational age	151	37	42	38.66	1.34
	parity	151	1	5	2.52	1.23

TABLE 3: AGE DISTRIBUTION ACCORDING TO GROUPS

		group		
		group A	group B	Total
age distribution	18-27	68 45.0%	66 43.7%	134 44.4%
	28-37	83 55.0%	85 56.3%	168 55.6%
Total		151	151	302

p-value 0.817

TABLE 4: GESTATIONAL AGE DISTRIBUTION

		group		
		group A	group B	Total
gestational age	37-39	106 70.2%	110 72.8%	216 71.5%
	40-42	45 29.8%	41 27.2%	86 28.5%
Total		151	151	302

p-value 0.610

TABLE 5: DISTRIBUTION ACCORDING TO PARITY

		group		
		group A	group B	Total
parity	primigravida	37 24.5%	38 25.2%	75 24.8%
	multigravida	114 75.5%	113 74.8%	227 75.2%
Total		151	151	302

p-value 0.894

TABLE 6: DISTRIBUTION ACCORDING TO C-SECTION

		group		
		group A	group B	Total
c-section	elective	24 15.9%	19 12.6%	43 14.2%
	emergency	127 84.1%	132 87.4%	259 85.8%
Total		151	151	302

p-value 0.410

TABLE 7: DISTRIBUTION ACCORDING TO WOUND INFECTION

		group		Total
		group A	group B	
wound infection	yes	10 6.6%	8 5.3%	18 6.0%
	no	141 93.4%	143 94.7%	284 94.0%
Total		151	151	302

p-value 0.627

TABLE 8: DISTRIBUTION ACCORDING TO BLEEDING

		group		Total
		group A	group B	
bleeding	yes	4 2.6%	2 1.3%	6 2.0%
	no	147 97.4%	149 98.7%	296 98.0%
Total		151	151	302

p-value 0.410

TABLE 9: DISTRIBUTION OF BLEEDING ACCORDING TO AGE

Age	Bleeding	Group		p-value
		A	B	
18-27 years	Yes	0	1 (1.5%)	0.308
	No	68 (100%)	65 (98.5%)	
28-37 years	Yes	4 (4.8%)	1 (1.2%)	0.165
	No	79 (95.2%)	84 (98.8%)	

TABLE 10: DISTRIBUTION OF WOUND INFECTION ACCORDING TO AGE

Age	Wound Infection	Group		p-value
		A	B	
18-27 years	Yes	2 (2.9%)	0	0.16
	No	66 (97.1%)	66 (100%)	
28-37 years	Yes	8 (9.6%)	8 (9.4%)	0.96
	No	75 (90.4%)	77 (90.6%)	

TABLE 11: DISTRIBUTION OF WOUND INFECTION ACCORDING TO GESTATIONAL AGE

Gestational Age	Wound Infection	Group		p-value
		A	B	
37-39 weeks	Yes	10 (9.4%)	8 (7.3%)	0.566
	No	96 (90.6%)	102 (92.7%)	
40-42 weeks	No	45 (100%)	41 (100%)	-

TABLE 12: DISTRIBUTION OF BLEEDING ACCORDING TO GESTATIONAL AGE

Gestational Age	Bleeding	Group		p-value
		A	B	
37-39 weeks	Yes	3 (2.8%)	2 (1.8%)	0.621
	No	103 (97.2%)	108 (98.2%)	
40-42 weeks	Yes	1 (2.2%)	0	0.337
	No	44 (97.8%)	41 (100%)	

TABLE 13: DISTRIBUTION OF WOUND INFECTION ACCORDING TO PARITY

Parity	Wound Infection	Group		p-value
		A	B	
Primgravida	Yes	1 (2.7%)	0	0.308
	No	36 (97.3%)	38 (100%)	
Multigravida	Yes	9 (7.9%)	8 (7.1%)	0.816
	No	105 (92.1%)	105 (92.9%)	

TABLE 14: DISTRIBUTION OF BLEEDING ACCORDING TO PARITY

Parity	Bleeding	Group		p-value
		A	B	
Primgravida	No	37 (100%)	38 (100%)	-
Multigravida	Yes	4 (3.5%)	2 (1.8%)	0.414
	No	110 (96.5%)	111 (98.2%)	

TABLE 15: DISTRIBUTION OF WOUND INFECTION ACCORDING TO TYPE OF C-SECTION

Type of C-section	Wound Infection	Group		p-value
		A	B	
Elective	Yes	2 (8.3%)	2 (10.5%)	0.806
	No	22 (91.7%)	17 (89.5%)	
Emergency	Yes	8 (6.3%)	6 (4.5%)	0.533
	No	119 (93.7%)	126 (95.5%)	

TABLE 16: DISTRIBUTION OF BLEEDING ACCORDING TO TYPE OF C-SECTION

Type of C-section	Bleeding	Group		p-value
		A	B	
Elective	Yes	0	1 (5.3%)	0.255
	No	24 (100%)	18 (94.7%)	
Emergency	Yes	4 (3.1%)	1 (0.8%)	0.162
	No	123 (96.9%)	131 (99.2%)	

DISCUSSION:

Intrauterine contraceptive device (IUCD) is the second most common modern method of contraception used by women in regions with large populations, including Pakistan [11]. It is favored by women who wish to adopt a contraceptive method that does not require regular motivation for use, or husband's participation and are not suitable for using hormonal methods [12,13]. We conducted this study with the need to improve contraception rate, increase patient's compliance and offers women a chance to avail this method of contraception at the same time as they have caesarean section. In our study age [14,15,16], gestational age, parity and C-section were having no significant difference as showing in table 1 to 6. Comparison of difference of wound infection in caesarean section with and without IUCD insertion was recorded, there was no significant difference in both the groups (p-value 0.627) [17]. Comparison of bleeding in both the groups showed no significant difference as the calculated p-value is 0.410. So immediate outcome of caesarean section with and without IUCD insertion has no significant difference [18,19], and C-section with postpartum IUCD insertion is equally better in terms of frequency of bleeding and wound infection [20]. Our findings are in agreement with a study conducted by Bhutta et al showing no significant difference in C-section with and without IUCD insertion in terms of bleeding and wound infection [21,22,23]. In this study 10% of women had infection after C-section with IUCD insertion and 2% without IUCD insertion. Bleeding was present in 4% in group A (with IUCD insertion) and 0% without IUCD insertion [24].

Another study by Kapp.N and others compared IUCD insertion post placental after caesarean delivery with no insertion, clinical signs of infection was present in 3.4% with IUCD insertion 4.5% without IUCD insertion. Excessive bleeding present in 5.5% and 7.6% without IUCD insertion [25]. The present as well as other studies have shown IUCD insertion at caesarean section to be effective and safe. Insertion at caesarean section also offers an alternative to the common practice of tubal ligation, in cases of multiple repeat caesarean sections [26]. Women who have had multiple caesarean sections at short intervals followed by tubal ligation, at a relatively young age may regret it later on, especially in view of the prevalent high perinatal and infant mortality rates [27,28]. Therefore, a reversible, albeit a long-term contraception method like IUCD in this group of women is a feasible option. Insertion at caesarean section is also convenient for the woman, as she does not have to wait till the puerperium to start contraception [29]. This reduces the risk of unplanned or unwanted pregnancies consequent to missed opportunity of starting contraception at the same time of delivery itself. Considering the results of the current study comparing with other national/international studies justifies our hypothesis that [30] "C-section with postpartum IUCD is equally better as compared to C-section

without IUCD in terms of frequency of bleeding and wound infection".

CONCLUSION:

Postpartum IUCD insertion after caesarean section is a good choice for patients undergoing caesarean section as it would improve contraception rate, increase patient's compliance and offers women a chance to avail this method of contraception at the same time as they have caesarean section. So if the immediate postoperative period after IUCD insertion is not affected in terms of wound infection and frequency of bleeding than it could be recommended locally.

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