



Changing Scenario in Indian Contraceptive Methods: A Glimpse Through a Tertiary Hospital Statistics

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Abstract

Background The patient scenario of a tertiary hospital changes with the implementation of various national programmes in any country. These programmes are conceived after understanding the felt need of the society. Though IUCD was available as an interval method of contraception in the past also and was meant to be effective for 10 years, the prerequisite to come again to the medical facility after 6 weeks of childbirth for insertion resulted in almost all patients to dropout and only the highly motivated would come on their own. Post-partum insertion of IUCD at the time of childbirth or within 48 h has addressed the need of contraception in the post-partum period as well as omitted the need for second visit to a health set-up. Earlier, after achieving the desired family goal of children, tubectomy was the preferred choice, irrespective of age of children but PPIUCD seems to have come up as a long-term reversible method of contraception.

Objective The present study was conceived to study the shift of method of long-term contraception from tubal sterilization and vasectomy to PPIUCD over a period of 8 years from 2010 to 2017.

Method This study was a retrospective analytical study conducted at the Department of Obstetrics and Gynaecology in Safdarjung Hospital between the years 2010 and 2017. The number of IUCDs inserted post-placental (i.e. within 10 min of delivery of placenta) and within 48 h (of vaginal childbirth) and intra-caesarean (intrauterine insertion while performing caesarean) were recorded and analysed. Also, sterilizations (tubectomy) and interval IUCD insertions done during this time period were compared.

Results With the introduction of PPIUCD in national family programme, more women are inclining towards long-term spacing method and not resorting to sterilizations. PPIUCD is preferred over interval IUCD.

Conclusions PPIUCD is there to stay as a method of long-term contraception.

Keywords Post partum IUCD · Post placental · Intra -Caesarean IUCD · Interval IUCD · Tubectomy

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Background/Introduction

The national population policy of India was framed in the year 2000 [1]. The long-term aim of this policy was to stabilize the population growth by 2045. This was needed so as to achieve a visible economic and social growth. It is undeniable that most women do not desire a pregnancy immediately after a delivery but are unclear about the choices available. It is seen that 27% of births in India occur in less than 24 months after a previous birth and 34% of births occur between 24 and 35 months [2]. Most of the post-partum pregnancies are due to non-use of any contraception, and among them, most are terminated by induced abortion. It was realized that 65% of women in their first-year post-partum have an unmet need of contraception. Post-partum insertion of IUCD (PPIUCD) was considered as a safe and

effective method to fulfil this unmet need. Cochrane review provides evidence for its safety and feasibility [3].

Before embarking on a national IUCD programme, the Government of India with a view to bring it in a phased manner started its first batch of IUCD clinician training in 2009. A national training centre in collaboration with JHPIEGO of USAID (US Agency for International Development) was established at our hospital, i.e. Safdarjung Hospital in New Delhi. Safdarjung Hospital is a tertiary-level hospital of North India and has Vardhman Mahavir Medical College attached to it and has a delivery rate of 25–27 thousand annually. Three regional training centres in Mumbai, Jabalpur and Lucknow in 2009–2010 were also established at the same time. This was followed by scaling up of availability of PPIUCD in 19 states by 2013. The opportunity to offer PPIUCD got further impetus with government programmes encouraging institutional deliveries, i.e. Janani Shishu Suraksha Yojana.

Aims and Objectives

1. To determine the number of hospital-delivered patients opting for PPIUCD (post-partum) insertion during the study period.
2. To describe the trends in the number sterilization operations performed during the study period.
3. To determine the trends in the number interval and post-partum IUCD insertions performed during the study period
4. To identify any shift from permanent method of contraception to long-term reversible method of contraception.

Material and Methods

In this hospital-based study, we have analysed secondary data of the number of deliveries, tubectomy operations and IUCD insertions performed in the Department of Obstetrics and Gynaecology in Safdarjung Hospital between years 2010 to 2017.

Post-partum IUCD included post-placental (IUCD inserted within 10 min of delivery of placenta) in vaginal birth and within 48 h (of vaginal childbirth) and intra-caesarean (intra-uterine insertion while performing caesarean). Interval IUCD insertion was defined as IUCD insertion after 6 weeks of childbirth. Inclusion criteria for PPIUCD insertions were women delivering either vaginally or by caesarean section, having received counselling for post-partum contraception and given written informed consent to IUCD insertions. There were well-defined inclusion criteria and patients had to fulfill that [4]. Counselling was done during antenatal visits or during early labour, and a written informed consent was taken prior to insertions. Data of total deliveries, caesarean section deliveries and sterilizations, i.e. vasectomy and tubectomy done during the time period 2010–2017, were also collected.

Percentage change in each year compared to the previous year in the study period was calculated. Mann–Kendall trend test a nonparametric test was used to assess whether there is a monotonic upward or downward trend in a series of values. The test statistic (S) for the annual data was calculated in the excel file to assess the temporal trends. The number of time periods (n) considered was 8 years (2010 to 2017). If the calculated value of test statistic (S) was ≥ 18 which is the critical value for $n=8$, p was considered to be <0.05 indicating a significant trend. The sign of S indicated the slope of the trend, i.e. positive sign indicating increasing trend and negative sign indicating decreasing trend.

Results and Discussion

Table 1 depicts that the number of deliveries has marginally increased in the hospital over the years. There has been an increase in number of caesarean births from 13% to 25%. Our hospital is a tertiary-level hospital with referral from adjoining states which have relatively poor health facilities, which also contributes to higher caesarean rates. Also, with increasing medico legal litigation faced by doctors, there is a tilt towards caution. There could be many other reasons for this, but it is beyond the purview of our present study.

Table 1 Total deliveries, LSCS performed and patients undergoing PPIUCD insertion from the year 2010 to 2017

Year	Total deliveries	LSCS	Percentage of LSCS performed (%)	PPIUCD (intra-caesarean + post-placenta + PP < 48 h)	Percentage of patients undergoing PPIUCD insertion (%)
2010	26,678	3601	13.4	1264	4.7
2011	24,258	3685	15.1	1221	5.03
2012	25,339	4122	16.26	1716	6.7
2013	25,140	4570	18.17	1925	7.6
2014	25,472	5066	19.88	3428	13.4
2015	26,125	5886	22.53	4514	17.2
2016	27,259	6409	23.51	4835	17.73
2017	27,939	7110	25.44	5974	21.38

There is no consensus among the world obstetricians regarding optimum rate of caesarean; however, it varies from 15 to 30%, and our rate is well within the acceptable range [5]. Among the women who delivered in the hospital, the proportion undergoing PPIUCD insertion has increased from 4.7 to 21% during the study period.

While there is a significant increasing trend in number of PPIUCD insertions, there is a decline in the number of interval IUCD insertions over the study period (Table 2, Fig. 1). Interval IUCD is mostly accepted when patients come for MTP due to unintended pregnancy, and it is associated with perforation, increased menstrual bleeding [6] and other complications and not preferred due to reasons earlier mentioned. This shows that more and more patients were willing to accept PPIUCD. Also, the increase in absolute numbers from that of previous years shows that the residents were also well versed in counselling the patients and in the technique of insertion. A small amount of honorarium for

patient, motivator and inserter is also likely to play its part in making this programme a success.

National Health Family Survey (NHFS) shows that PPIUCD contributes as a method of contraception in 2.4% of urban Indian households in comparison with 5.3% in NCR Delhi [7]. Our data show much better acceptance of this method. This is because our hospital is a national-level training centre and has a department of family planning which ensures good follow-up of patients after IUCD insertion and protocols are in place to ensure client satisfaction. An intrauterine contraceptive device (IUCD) has several advantages for use in post-partum period as it is an effective, long-term reversible contraception, coitus independent and does not interfere with breast feeding.

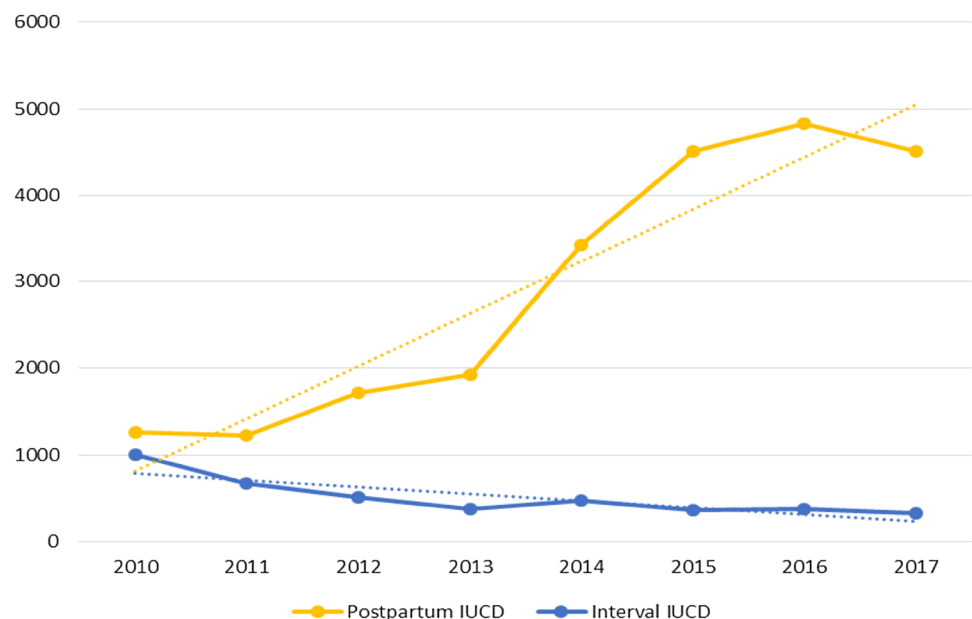
Considering the trends for the timing of IUD insertion in post-partum period, trend analysis indicates an overall rising trend for proportion of post-placental IUD insertions and intra-caesarean-section IUD insertions while there was no significant

Table 2 Trends of post-partum and interval IUCD insertions during the period 2010 to 2017

Years	Post-partum IUCD			Interval IUCD		
	N	Percentage change	Test statistic (S)	N	Percentage change	Test statistic (S)
2010	1264		23*	1005		-24**
2011	1221	-3.40		664	-33.93	
2012	1716	40.54		507	-23.64	
2013	1925	12.17		376	-25.84	
2014	3428	78.08		475	26.33	
2015	4514	31.68		366	-22.95	
2016	4835	7.11		368	0.55	
2017	4514	-6.64		321	-12.77	

* $p < 0.05$ Significant increasing trend; ** $p < 0.05$ significant decreasing trend

Fig. 1 Trends in post-partum and interval IUCD insertions from 2010 to 2017



trend for post-vaginal delivery insertion within 48 h (Table 3, Fig. 2). The reason is that after delivery, to make the patient agree to come to examination table is little difficult unless she herself feels that she has lost the opportunity earlier at the time of delivery, thus the role of counselling. So is the case for the health worker to make special efforts to do the insertion [8].

There was a significant increasing trend in the number of IUCD insertions (PPIUCD and interval IUCD) while the number of tubectomy and vasectomy operations performed remained stable over the period from year 2010 to 2017 (Table 4, Fig. 3). The number of vasectomies performed was very small in this time period. Ours is a patriarchal society, and sadly the burden of family planning completely

Table 3 Trends in post-placental, intra-CS and <48 h post-partum IUCD during the period 2010 to 2017

Years	Post-placental IUCD			Intra-CS IUCD			<48 h Post-partum IUCD		
	N	Percentage change	Test statistic (S)	N	Percentage change	Test statistic (S)	N	Percentage change	Test statistic (S)
2010	553		18*	377		26*	334		-6
2011	379	-31.46		719	90.72		123	-63.17	
2012	201	-46.97		1013	40.89		502	308.13	
2013	321	59.70		1420	40.178		184	-63.35	
2014	997	210.59		2099	47.82		332	80.43	
2015	1183	18.66		3268	55.69		63	-81.02	
2016	1391	17.58		3186	-2.51		258	309.52	
2017	2003	43.99		3913	22.82		247	-4.26	

* $p < 0.05$ Significant increasing trend

Fig. 2 Trends in post-placental, intra-caesarean-section (CS) and post-partum <48 h IUCD insertion from 2010 to 2017

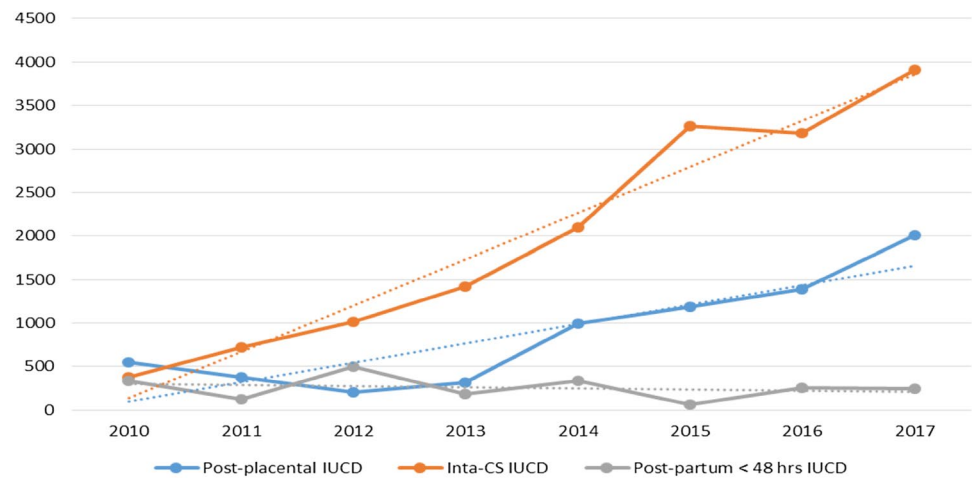
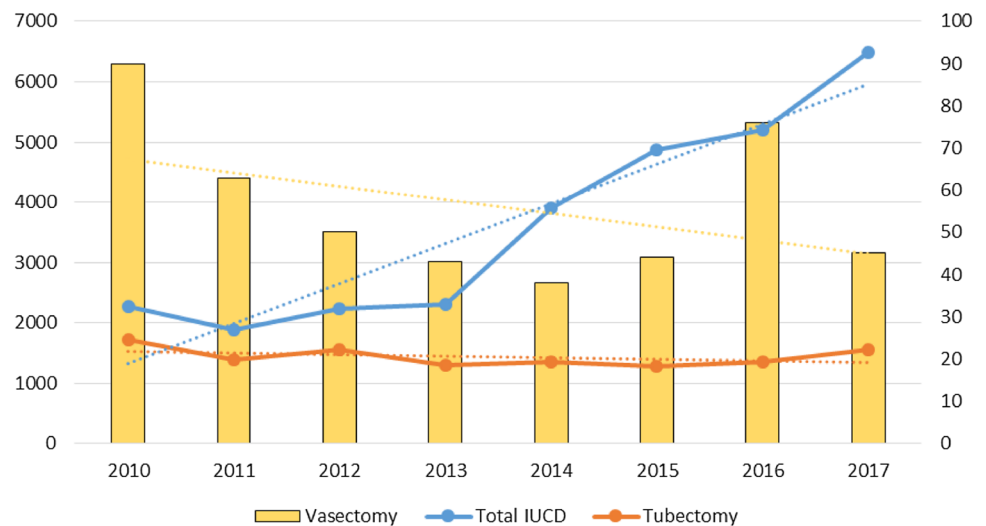


Table 4 Trends in total deliveries, IUCD insertions and tubectomy operations performed during the period 2010 to 2017

Years	IUCD insertions			Tubectomy operations			Vasectomy operations		
	N	Percentage change	Test statistic (S)	N	Percentage change	Test statistic (S)	N	Percentage change	Test statistic (S)
2010	2269		24*	1725		-7	90		-11
2011	1885	-16.92		1396	-19.07		63	-30.00	
2012	2223	17.93		1555	11.39		50	-20.63	
2013	2301	3.51		1297	-16.59		43	-14.00	
2014	3903	69.62		1355	4.47		38	-11.63	
2015	4880	25.03		1275	-5.90		44	15.79	
2016	5203	6.62		1358	6.51		76	72.73	
2017	6484	24.62		1555	14.51		45	-40.79	

* $p < 0.05$ Significant increasing trend

Fig. 3 Trends in number of total IUCD insertions, tubectomy and vasectomy operations performed from 2010 to 2017



falls on the shoulders of the lady of the house [9]. According to NFHS-4 conducted in 2015–2016, in Indian urban areas female sterilization is a method of contraception in 35.7% in comparison with 19.3% in Delhi NCR. In stark comparison with that, male sterilization accounts for 0.2% in urban India and 0.3% in Delhi NCR.

Conclusions

Introduction of postpartum IUCD insertion has clearly tilted the table towards long-term contraception and away from permanent method of sterilization. It has also resulted in increased acceptance of contraception post-delivery and thus fulfills the unmet need earlier. Among the post-partum insertions, it is the intra-caesarean insertion which is the most acceptable method. Tubectomy continues to be one of the methods of contraception but with few acceptors.

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Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest

Ethical Approval The study was approved by the Institutional Ethics Committee.

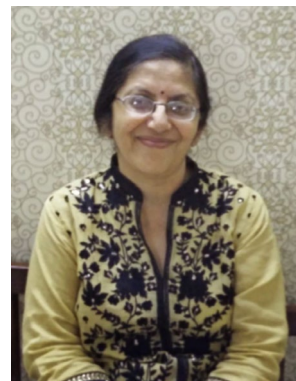
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