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Return to Fertility After Discontinuation of Copper IUD Usage

A study on 55 pregnancies with Multiload Cu-250 users among private patients in Indonesia

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ABSTRAK

R. Soeprono — *Pemulihan kesuburan setelah penggunaan IUD Multiload Cu-250*

Pemulihan kesuburan, setelah penggunaan IUD Multiload Cu-250 dihentikan, terjadi dalam waktu yang singkat. Hal ini merupakan kesimpulan penelitian retrospektip selama tujuh tahun, mencakup 53 pemakai ML Cu-250 yang minta dilepas IUD-nya karena menginginkan anak lagi, dan meliputi 55 kehamilan yang kemudian terjadi. Rata-rata umur 25,02 tahun dan paritas 1,25. Lama pemakaian IUD antara 1,00 dan 66,42 bulan, rata-rata 27,28 bulan. Selang waktu antara pelepasan IUD dan hari pertama menstruasi terakhir sebelum konsepsi (REM-LMP) berkisar antara −0,51 dan 49,03 bulan, rata-rata 5,90 bulan. Empat wanita tidak lagi haid setelah IUD dilepas. Terjadi 35 (63,64%) kehamilan dalam waktu 6 bulan dan 7 (12,72%) dalam 6 bulan berikutnya. Dari 55 kehamilan yang terjadi 46 (83,63%) terjadi dalam waktu 1 tahun, dan 52 (94,54%) dalam waktu 2 tahun setelah IUD dilepas. Lama pemakaian ML Cu-250 tidak berpengaruh atas kelancaran pemulihan kesuburan, kecuali bila ada komplikasi infeksi panggul. Kehamilan dan anak yang dilahirkan tidak juga terpengaruh. Pada 14 wanita pemakai IUD di atas tiga tahun, lama rata-rata REM-LMP hanya 4,15 bulan. Kecuali 2 keguguran, 1 persalinan prematur dan 2 postmatur, 1 perdarahan postpartum atonis dan 1 kematian neonatal pada bayi dengan sindrom Down, semua kehamilan lain berlangsung genap bulan, dengan berat lahir rata-rata bagi 43 bayi 3387 g. Dari 42 anak yang diketahui jenis kelaminnya, 26 (61,90%) lelaki dan 16 (38,10%) perempuan. Angka banding bayi lelaki terhadap perempuan sebesar 162,50 ini jauh lebih tinggi dari angka banding normal sebesar 105 − 106. Apakah fakta ini bermakna dalam hubungannya dengan pemakaian IUD bertembaga sebelumnya pantas diselidiki lebih lanjut.

Key Words: copper IUD — Multiload Cu-250 — removal for planned pregnancy — return to fertility — outcome of pregnancy and offspring

INTRODUCTION

The intrauterine contraceptive device (IUCD) has been steadily gaining preference and importance in both developed and developing communities as a conception preventing technology during the last ten years. This is definitely the case in Indonesia, leading to decreasing reliance on the oral pill, and for that matter also limiting acceptance of other contraceptive techniques, such as the injectables, implants, barrier and surgical methods. By 1985 27% of contracept-

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ive users in Indonesia elected to use the IUD compared to only 11% ten years previously (Marsidi Judono, 1985), and this preference is believed to become more pronounced in years to come. This welcome phenomenon is due to the IUD's valid recognition as a medically safe and technically effective contraceptive, lacking the generalized metabolic side-effects of the hormonal contraceptives and the aesthetically disturbing interference in the sexual process as with the barrier methods. It is compatible with longtime usage without replacement and demographically suitable for mass use in less educated population groups without the necessity for tight or frequent follow-up supervision.

Copper IUDs, thought to be more effective than the inert types, were officially introduced into the Indonesian national family planning program since 1978 to overcome some of the problems encountered with the Lippes Loop such as high drop-out and failure rates. By now the third generation Multiload Cu-250 with a declared effective lifespan of three years has become the primary choice of copper IUD within the program. A ten-year study on the extended use of this specific type of copper IUD showed its continued efficacy over a period far beyond its theoretical effectiveness: in 37% of 52 cases for as long as 4—5 years, in 25% exceeding five years and in one case even nine years (Soeprono, 1987).

On the individual's side, however, lingering doubts and undefined reluctance oftentimes constitute constraints to be overcome before the prospective acceptor is convinced of the many benefits and is prepared to use the device. Among the many questions and doubts put forward during motivational sessions are:

1. Is it safe?
2. Is it effective?
3. How long can it be used?
4. How frequent is the need for replacement?
5. Does it interfere with the husband's sensation during intercourse?
6. How about pregnancy failure and possible defects with the child in utero?
7. How about return to fertility after discontinuation of use, and how long is the interval before becoming pregnant again?
8. Does it have any undesirable effect on the outcome of the future pregnancy and the offspring?

Surely all these questions and possibly several more have to be answered to their satisfaction for the women to accept the device.

General and specific answers to the above questions are readily to be found in the by now very extensive subject literature. Recommended for an overview are the monograph by Davis (1971) and the Population Reports on Intrauterine Devices prepared by the Population Information Program, Johns Hopkins University, Baltimore, (1975; 1979; 1982).

Purpose of study

The present study aims to provide answers to questions concerning return to fertility, length of interval until the reoccurrence of conception, and the outcome of pregnancy and offspring. Mindful of the preferred use of the Multiload Cu-250 in the national service programs in Indonesia, the study was purposefully directed to cover only users of this speccific type of intrauterine device. It is

hoped that findings could be of relevance to both the program and the profession.

Materials and methods

Records of patients from the author's private obstetric practice covering a seven-year period from 1 January 1980 to 31 December 1986 provided the materials for this retrospective study. ML Cu-250 users who requested removal of their IUD desiring another pregnancy and who did actually conceive subsequently, were studied for age, parity, length of ML-CU-250 usage, length of interval between removal and first day of their last menstrual period prior to conception (REM-LMP), outcome of pregnancy and the newborn. Parity was defined at the time of IUD insertion.

All insertions and removals, all antenatal care and all but ten of the deliveries were by the author himself. A small number of cases who did not yet got pregnant and cases with insufficient data due to loss in follow-up were excluded from the study.

Length of IUD use and *length of REM-LMP interval* as the most practical way to quantify elapsed time between removal and conception were in 30-day months, and birthweight was in grams. Data were assessed clinically and statistically. Simple correlation and regression analysis was performed to look into possible relationship between length of IUD use and REM-LMP interval. Statistical computations were done on a Casio fx-3500P scientific calculator and on an IBM PC using Microstat software (Copyright 1980, 1981 by Ecosoft Incorp., distributed by Lifeboat Associates, New York).

Results

During the study period 62 removals for pregnancy wish were performed. Fifty nine pregnancies involving 57 women were known to occur, of which 55 involving 53 women presented ample data for clinical and statistical assessment. These then constituted the study group as listed in TABLE I with data on age, parity, length of IUD use, length of REM-LMP interval, birthweight, gender and other particulars concerning pregnancy and the newborn.

Age varied between 20 and 31 years, with mean and SD values of 25.02 ± 2.97 and median of 25 years. Parity varied from 1 to 3, with mean and SD values of 1.25 ± 0.64 and a median of 1.

ML Cu-250 use ranged between 1.00 to 66.42 months, with an average of 27.28, SD of 15.84 and a median of 24.60 months. The length of REM-LMP interval varied from −0.51 to 49.03 months. (Note: the minus symbol denotes that removal took place 0.51 month or 17 days after the LMP and was not followed by any other menstruation.) Average length of REM-LMP was 5.90 ± 8.60 and the median was 2.81 months. These data and further subgrouping data are presented in TABLE 2. At the 5% significance level the mean values for the subgroups in age, parity, length of IUD use and length of REM-LMP did not present significant differences from the respective mean figures for the whole group ($P>0.05$). This applied also to the subgrouping along ethnic lines.

TABLE 1. — List of cases — Length of IUD use, REM-LMP interval and pregnancy outcome

Case	Record	Name (Mrs)	Age	Para	IUD Use (m)	REM-LMP (m)	Pregnancy BW (g)	Outcome ♂	Outcome ♀	Remarks
1	6534	A	27	3	66.42	2.06	2900		+	
2	6985	S*	28	3	26.81	2.24	3470	+		Minilap pp
3	7224	S*	25	1	13.33	26.84	2950		+	
4	7285	N	27	1	41.75	1.69	4010	+		
5	7349	A*	28	2	28.97	28.09				
6	7385	C*	29	2	9.18	12.81	3250			>42 weeks
7	7434	R	26	1	33.69	6.42	3970	+		
8	7525	S	21	1	60.12	2.51	3470		+	
9	7548	F	28	1	10.15	0.63	3950	+		
10	7548	F	29	2	22.45	1.42	4230	+		
11	7629	M	22	1	36.28	11.75	3250	+		
12	7797	E*	30	2	49.54	0.21	3340		+	Repeat section
13	7862	H	27	1	12.00	2.00	2750		+	
14	8025	S	28	2	48.69	0.54	3400		+	
15	8177	A	25	2	1.00	6.36				TD; term delivery
16	8180	B	24	1	55.36	0.36	4040	+		>42 weeks
17	8191	P	20	2	57.12	0.12	3550		+	
18	8306	M	28	1	24.24	5.33	2625	+		Down's S, RDS, +
19	8362	D	24	1	24.60	0.42	3380	+		
20	8506	S	23	1	35.69	2.60	3625	+		
21	8545	S	24	1	50.33	12.54	3100		+	
22	8565	S	23	2	35.15	11.39	3450	+		
23	8667	M	26	1	42.66	13.27	3925	+		
24	8739	H	22	1	57.84	7.30	2600	+		
25	8774	L*	30	2	17.45	2.81				
26	8833	H	30	1	32.21	12.39				
27	8856	P	28	1	9.27	2.36			+	TD
28	8926	W	22	1	18.81	49.03	3600	+		Pelvic infection
29	8934	J*	25	1	33.03	1.39	3900			
30	8993	B*	27	3	13.87	3.15				
31	9146	H*	26	1	7.27	0.42	3800			
32	9171	G*	22	1	8.24	4.36	2350		+	
33	9171	G*	24	2	33.12	3.84	2650	+		
34	9186	H	27	1	37.21	5.42	3900	+		Hemorrhage pp
35	9296	M	26	1	16.87	0.51	3000		+	
36	9330	B	21	1	31.24	6.07				TD
37	9381	K*	21	1	15.15	6.21				
38	9553	M	25	1	34.12	3.33			+	
39	9565	J	22	1	14.03	1.27				Sp abortion week 10
40	9674	P	30	1	41.42	0.15	3600	+		
41	9867	D	20	0	6.69	0.72	3050	+		Ab in lst preg
42	9947	G*	23	1	19.03	0.06	3160		+	
43	9998	T*	25	1	14.48	20.81				
44	10072	E	26	1	35.81	0.06	3825	+		
45	10074	R	23	1	38.33	1.21	3500	+		
46	10099	D	21	0	10.33	4.00	2750	+		Mole in lst preg
47	10147	E	22	1	13.39	1.75	3400	+		
48	10298	D	23	1	9.39	4.84	3160		+	
49	10324	A*	25	1	17.06	5.66	3350	+		
50	10402	A	23	0	19.15	5.48	3550	+		Mole in lst preg
51	10521	M	22	1	10.60	1.84				Sp abortion week 11
52	10602	B	28	1	26.72	0.72	3760	+		
53	10698	W*	24	1	21.87	0.18	3550		+	
54	11112	D	31	1	16.24	3.21	3070		+	
55	11730	J	30	1	34.54	15.33	3490	+		Incoord. section

m = 30 days month

TABLE 2. — Interval between ML Cu-250 removal and LMP before pregnancy relative to age, party, ethnics and length of IUD Use

Grouping	Number of Women	Age (y)		Parity		Length of IUD Use (m)			Interval Removal-LMP (m)		
		Mean ± SD	M	Mean ± SD	M	Range	Mean ± SD	M	Range	Mean ± SD	M
Age (y)											
20 - 24	23	22.26 ± 1.21	22	1.00 ± 0.52	1	6.69-60.12	27.23 ± 16.85	21.87	-0.12-49.03*	6.05 ± 10.09	3.83
25 - 29	26	26.65 ± 1.41	26	1.42 ± 0.70	1	1.00-66.42	25.32 ± 16.82	25.47	-0.51-28.09	5.82 ± 8.05	2.30
30 - >	6.	30.16 ± 0.40	27	1.33 ± 0.52	1	16.24-49.54	31.90 ± 13.13	33.37	0.15-15.33	5.68 ± 6.52	3.01
Parity											
0	3	21.33 ± 1.52	21			6.69-19.15	12.05 ± 6.40	10.33	0.72- 5.48	3.40 ± 2.44	4.00
1	38	25.02 ± 2.80	25			8.24-60.12	27.24 ± 14.86	25.76	-0.51-49.03	6.30 ± 9.40	3.27
2	11	26.27 ± 3.41	28			1.00-57.12	29.24 ± 17.62	28.97	-0.12-28.09	6.12 ± 8.57	1.42
3	3	30.00 ± 0.00	30			13.87-66.42	35.70 ± 27.37	26.81	0.15-12.39	5.11 ± 6.43	2.81
IUD Use (m)											
<12	10	24.40 ± 3.24	27.5	1.00 ± 0.67	1	1.00-10.60	8.21 ± 2.84	9.22	-0.42-12.81	3.75 ± 3.83	3.18
12 - 24	16	25.12 ± 3.03	22	1.19 ± 0.65	1	12.00-21.87	16.57 ± 3.09	17.16	-0.51-49.03	8.08 ± 13.29	2.98
24 - 36	15	25.93 ± 2.68	25	1.33 ± 0.61	1	24.23-35.82	31.33 ± 4.02	32.21	0.06-28.09	6.64 ± 7.52	3.84
>36	14	25.07 ± 3.24	25	1.36 ± 0.63	1	36.28-66.42	48.79 ± 9.52	49.11	-0.36-13.27	4.15 ± 5.02	1.45
Ethnics											
Indonesians •)	39	24.97 ± 3.10	24	1.10 ± 0.55	1	1.10-66.42	30.04 ± 16.91	32.21	-0.51-49.03	5.29 ± 8.37	2.51
Others ••)	16	25.60 ± 2.74	22.5	1.56 ± 0.72	1	7.27-49.54	20.52 ± 11.28	17.25	-0.42-28.09	7.39 ± 9.52	3.49
Whole group											
All groupings	55	25.02 ± 2.97	25	1.25 ± 0.64	1	1.00-66.42	27.28 ± 15.84	24.60	-0.51-49.03	5.90 ± 8.60	2.81

•) Of Indonesian parentage ••) Of Chinese or Indian parentage M = Median m = 30-days month

* The minus (--) denotes that removal was performed 0.12 month (4 days) after LMP (first day of last menstrual period)

Fertility return. From the data in TABLE 3 it could be concluded that return to fertility after discontinuation of ML Cu-250 was excellent, averaging only 5.90 ± 8.60 months for the whole group. Out of 55 pregnancies, 4 (7.27%) occurred very soon after removal, 35 (63.64%) within 6 months, and 7 (12.72%) between 6 and 12 months after removal. Thus, a total of 83.63% of the pregnancies occurred during the first year after discontinuation of the IUD. A single case stood out for its longest REM-LMP interval of 49.33 months, becoming pregnant only more than four years after removal. This was a secundigravida, aged 22 years, with a history of recurrent pelvic infection (case 28).

TABLE 3. – REM-LMP interval in 55 pregnancies

Time of Pregnancy Onset	Cases	Percentage	Remarks
Very soon around IUD removal	4	7.27 %	
Months after IUD removal: 0 – < 6	35	63.64 %	46 (83.63%) within one year
6 – < 12	7	12.72 %	after IUD removal
12 – < 18	5	9.09 %	52 (94.54%) within two years
18 – < 24	1	1.82 %	after IUD removal
24 – < 30	2	3.64 %	
30 – < 36	0		
36 – >	1	1.82 %	

The length of ML Cu-250 use appeared not to affect negatively subsequent fertility. In cases where the ML Cu-250 was used beyond its theoretical effective lifespan of three years, return to fertility was also found to be good. In these 14 cases the length of REM-LMP interval ranged between a minimum of · 0.36 and a maximum of 12.54 months, with mean and SD values of 4.15 ± 5.02 and a median of 1.45 months.

Outcome of subsequent pregnancy and offspring. Of the 55 pregnancies 45 resulted in term and 2 in postmature deliveries. There was one premature birth, and 2 spontaneous abortions occurred at 10 and 12 weeks. Forty two deliveries were normal spontaneous deliveries, 2 were sections: one repeat section, the other due to incoordinate uterine action. There was one case of atonic postpartum hemorrhage after delivery of a 3900 gram infant. There was one neonatal death due to respiratory distress syndrome with a mongoloid infant (case 18). On 7 pregnancies there was no information on their deliveries, these taking place out of clinic or out of town. Information was available on 43 newborns, their birthweights ranging between 2350 and 4230 grams, averaging 3387 grams. Of the 42 newborns of which the gender was known, 26 (61.90%) were males and 16 (38.10%) were females, giving a male to female ratio at birth of 162.50. This above normal male to female ratio was also found within the subgroup with extended ML Cu-250 usage of 14 cases, with 8 males and 6 females giving a male to female ratio at birth of 133.33. There was no febrile puerperal morbidity and there was no maternal death (see TABLE 5). There was no ectopic pregnancy.

Association between length of IUD use and length of REM-LMP. From the data presented (TABLES 1, 2, 4) it appeared that there was no quantitative relationship between the length of ML Cu-250 usage and the length of interval between its removal and the occurrence of subsequent conception. This was also mathematically evident from the results of the correlation and regression ana-

TABLE 4. — Extended use of ML Cu·250, REM-LMP and outcome of offspring

Cases n = 14	Age	Para	IUD Use (m)	REM-LMP (m)	Newborn and Gender BW (g)	♂	♀
7629 M	22	1	36.28	11.75	3250	+	
9186 H	27	1	37.21	5.42	3900	+	
10074 R	23	1	38.33	1.21	3500	+	
9674 P	30	1	41.42	0.15	3600	+	
7285 N	27	1	41.75	1.69	4010	+	
8667 M	26	1	42.66	13.27	3925	+	
8025 S	28	2	48.69	0.54	3400		+
7797 E	30	2	49.54	0.21	3340		+
8545 S	24	1	50.33	12.54	3100		+
8180 B	24	1	55.36	- 0.36	4040	+	
8191 P	20	2	57.12	- 0.12	3550		+
8739 H	22	1	57.84	7.30	2600	+	
7525 S	21	1	60.12	2.51	3470		+
6534 A	27	3	66.42	2.06	2900		+
Age	25.07 ± 3.24	median 25	mode 27				
Parity	1.36 ± 0.63	median 1	mode 1				
IUD Use	48.79 ± 9.52	median 49.11					
REM-LMP	4.15 ± 5.02	median 1.45					
BW	3470.35 ± 422.58				8 males (57.14%) 6 females (42.86%)		

TABLE 5. — Previous history and outcome of pregnancy (N = 55)

History and Outcome	f	Remarks
Spontaneous abortion	2	At week 10 and 11; evacuation
Premature delivery	1	At week 36, BW 2350 gram
Known term delivery	45	
Postterm delivery	2	
No information on delivery	7	
Method of delivery		
spontaneous/normal	44	
Cesarian section	2	1 repeat, 1 on incoordination
no information	7	
Hemorrhage postpartum	1	Atonia uteri
Newborn		
Birthweight known	43	Range 2350 - 4230 g; 3387.21 ± 447.65
< 2500	1	2.32%
2500 — 2999	7	16.28% }
3000 — 3499	17	39.53 % } total = 90.69 %
3500 — 3999	15	34.88% }
4000 — >	3	6.97 %
Gender known	42	Males 26 (61.90%), females 16 (38.10%)
Live born known	47	
Neonatal death	1	Polyhidramnion, Down's syndrome, RDS
No information	7	
Previous pregnancy		2 moles, 1 section, 1 abortion
Pelvic infection	1	With longest REM-LMP of 49.03 months

lysis presented in the scatterplot (FIG 1) and from the magnitude of the correlation coefficient ($r = -0.0836$). The degree of association was thus found to be negligible. From the clinical point of view, however, it could be positively concluded that return to fertility after discontinuation of ML Cu·250 usage was very

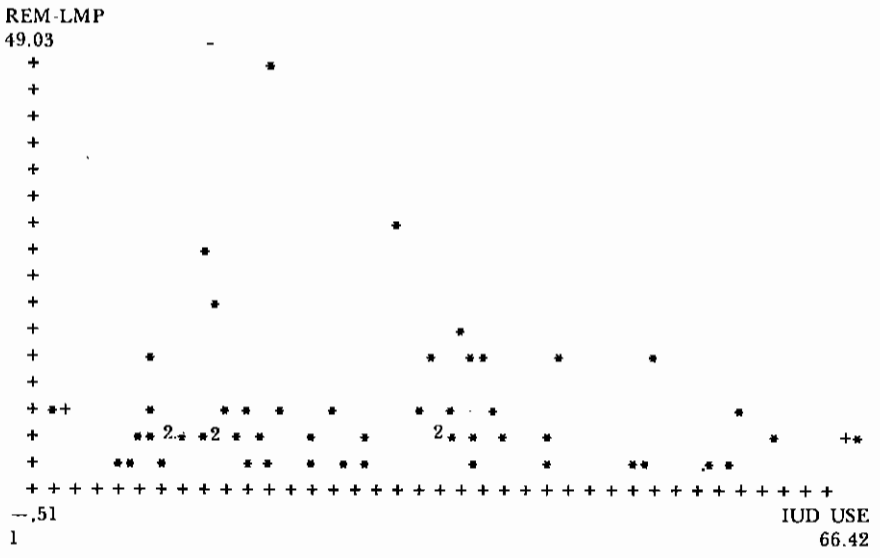

FIGURE 1. — Scatterplot — Correlation between length of IUD use and REM-LMP
Number of cases: 55 Number of variables: 2
Regression equation (shown by + 's on scatterplot):
Intercept = 7.1415 Slope = −4.5406
r = −0.0836 r squared = 0.0070
Correlation negligible
(Computer output: IBM PC — Microstat-Ecosoft)

satisfying apparently not affected by the length of IUD usage. This could clearly mean a welcome message to the many current and prospective users of the device. The scope and results of the current study, however, could not yet provide an overall picture of fecundity after discontinued copper IUD usage.

DISCUSSION

From a previous ten-year study on the copper intrauterine device of the ML Cu-250 type (Soeprono, 1987) it could be concluded that the device can be used with assured efficacy and with reasonable safety over a much longer period beyond its theoretical effective lifespan of three years without replacement, even up to eight years. Although further studies in a broader epidemiological or field setting under less than optimal conditions clinically were recommended to justify adoption of such extended usage regimen in a larger scale service program, it is clear that its adoption should offer considerable benefits in terms of saving in precious time and scarce monies, assure continuation of use, reduce possible complications and eliminate renewed anxieties on the part of the women. It was also concluded that an extended ML Cu-250 usage merits consideration in instances where a more permanent protection against accidental pregnancy is wanted and when surgical contraception is not available is not desired.

The present study showed beyond doubt that after discontinuation of the device return to fertility, even after extended usage, was good to excellent and subsequent pregnancy and offspring were not adversely affected. These findings are important in relevance to their use for purposes of postponement or spacing

in family planning with the younger group of couples. In Indonesia where the idea of the small and prosperous family within the format of the two-child or four-member family (*caturwarga*), launched around 1980 (Soeprono, 1981), is gaining acceptance in the community at large and has been adopted as official policy in the national family planning and population program, spacing technology has assumed a new and most important meaning. As a steadily growing preference for the IUD has been evident in the last seven years, and as the ML Cu-250 has become the primary choice of copper intrauterine device to be used in the national program, this rapid and safe recovery of fertility after usage of this device is a very significant message to discern.

The observed findings relative to rapid return to fertility after IUD removal for planned pregnancy were in line with reported results by other researchers. Indeed it has been generally accepted and demonstrated that IUD use does not affect subsequent fertility (Segal & Tietze, 1971). Davis (1971) wrote that conceptions after removal for planned pregnancy occur rapidly, 59,4% becoming pregnant after 3 months, 75.1% after 6, 84.5% after 9, and 88.2% after 12 months. According to Vessy *et al.* (1978) 92% of 258 women had given birth within two years after removal. Reporting on a countrywide prospective study in New Zealand during the session "Special aspects of family planning" at the XIth World Congress of Gynecology and Obstetrics, September 1985 in Berlin, Jennifer Wilson told the forum that of the 1176 women completed 12 months of study, 979 or 85.3% succeeded in conceiving after IUD removal; 983 women completed two years of study with 91.4% conceiving, and at three years the conception rate was 94.4% for 582 women. Belhadj *et al.* (1986) found in a five year prospective study of 110 women that the median time to planned pregnancy was three months for those who had used the copper T 380 Ag, while rates of successful planned pregnancy were not affected by age at termination or duration of use of the device. However, it is generally agreed, that the occurrence of pelvic infection does affect fertility return, with rates of conception decreasing when rates of infection increase with lengthening usage. This was also clearly evident in this present study when a woman with recurrent pelvic infection experienced the longest REM-LMP interval in the series lasting 49.03 months and became pregnant only after more than four years (case 28).

A surprising fact emerged from this present study relative to the observed above normal male to female ratio at birth of the infants born after discontinuation of use of the copper ML Cu-250. As reported previously the observed male to female ratio at birth (162.50 with the group of 42 newborns, and 133.33 with the subgroup of 14 extended users), was decidedly higher than the normal male to female ratio at birth, which is 105 to 106 worldwide (Guttmacher, 1956), matched precisely by the local ratio in Yogyakarta, Indonesia. Data from the obstetric department of a general hospital in Yogyakarta (Rumah Sakit Panti Rapih), in which all but ten of the births under study took place, are presented in TABLE 6. Whether this observed fact of above normal male to female ratio at birth of infants born by women after removal of their copper intrauterine device for planned pregnancy has any significant consequence is widely open to further discussion and futher study. Certainly it was a surprising fact indeed. Further studies are planned.

TABLE 6. - Male to female ratio at birth in the obstetric department of a general hospital in Yogyakarta (Rumah Sakit Panti Rapih) from 1955 to 1986.

Period	Years	Number of Infants Born			Ratio[1]
		Total	Males	Females	
1955 – 1964	10	14 862	7 656 (51.51%)	7 206 (48.49%)	106.24
1965 – 1974	10	13 574	6 974 (51.38%)	6 600 (48.62%)	105.66
1975 – 1984	10	13 467	6 898 (51.22%)	6 569 (48.78%)	105.00
1955 – 1984	30	41 903	21 528 (51.38%)	20 375 (48.62%)	105.66
1980 – 1986[2]	7	9 501	4 971 (52.32%)	4 530 (47.68%)	109.73

1) Number of males to 100 females
2) Period of present study

CONCLUSION AND RECOMMENDATION

1. Return to fertility after ML Cu-250 removal for planned pregnancy was rapid, with 83.63% and 94.54% of 55 subsequent pregnancies occurred within 6 and 12 months respectively, while outcome of pregnancy and offspring was not adversely affected.

2. Length of interval between removal and conception was not influenced by the duration of IUD usage, except in cases where pelvic infection was present.

3. Besides its use for a more permanent protection against accidental pregnancy, the ML Cu-250 is suitably recommended for spacing purposes with the more younger group of women.

4. Meticulous attention to measures to prevent and treat pelvic infection is essential to achieve the best possible recovery of fertility after discontinuation of IUD usage.

5. A decidedly higher than normal male to female ratio at birth was found with infants born after the desired ML Cu-250 removal for planned pregnancy. This unexpected phenomenon coming out from the series under consideration needs further study.

ABSTRACT

Return to fertility after discontinuation of use of the Multiload Cu-250 intrauterine device was found to be excellent. This was the conclusion of a seven-year study on 55 pregnancies involving 53 ML Cu-250 users who got their devices removed desiring another child. The average age was 25.02 years and the average parity 1.25. The length of IUD use ranged between 1.00 and 66.42 months, averaging 27.28 months. The interval between the time of removal and the first day of the last menstrual period (REM-LPM) prior to conception ranged from −0.51 to 49.03 months, with an average of 5.90 months. In four cases removal was not followed by any period. Thirty five (63.64%) pregnancies occured within six months, and seven (12.72%) between six and twelve months after removal. Of the 55 conceptions 46 (83.63%) took place within one year, and a total of 52 (94.54%) within two years after IUD discontinuation. The length of IUD use appeared not to affect negatively both the return to fertility and the outcome of pregnancy and offspring. In 14 cases with extended use of the ML

Cu-250 beyond three years, the average REM-LMP interval was 4.15 months. The outcome of pregnancy and offspring was generally good. Except for two spontaneous abortion, one premature and two postmature births, one case of atonic postpartum hemorrhage and one neonatal death due to respiratory distress with a child with Down's syndrome, all other pregnancies were known to progress to term, with birthweights of the newborns in 43 cases averaging 3387 grams. Of the 42 newborns with known gender, 26 (61.90%) were males and 16 (38.10%) were females. Whether this decidedly above normal male to female ratio at birth of 162.50 (against a normal of 105 — 106) was of consequence relative to the previous copper IUD usage merited further study.

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