

A STUDY OF 500 ACCEPTORS OF  
INTRAUTERINE  
CONTRACEPTIVE DEVICE –  
COPPER 'T'

*dissertation submitted for*  
**M.D. BRANCH II**  
**OBSTETRICS AND GYNAECOLOGY**  
**STANLEY MEDICAL COLLEGE**  
**CHENNAI**



**THE TAMIL NADU**  
**DR. M.G.R MEDICAL UNIVERSITY,**  
**CHENNAI**  
**MARCH 2007**

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## **CERTIFICATE**

This is to certify that the dissertation entitled “**A STUDY OF 500 ACCEPTORS OF INTRAUTERINE CONTRACEPTIVE DEVICE - COPPER 'T'**” is the bonafide original work of Dr. N.SELVI MAHALAKSHMI in partial fulfillment of the requirements for M.D. Branch II (Obstetrics and Gynaecology) examination of the Tamil Nadu Dr. M.G.R. Medical University to be held in March 2007. The period of study was from May 2004 to March 2007.

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## DECLARATION

I, **Dr. N. SELVI MAHALAKSHMI**, Solemnly declare that dissertation titled **“A STUDY OF 500 ACCEPTORS OF INTRAUTERINE CONTRACEPTIVE DEVICE - COPPER 'T'”** is a bonafide work done by me at Govt. Stanley Medical College and Hospital during 2004-2007 under the guidance and supervision of Prof. **Dr. Cynthia Alexander, M.D., D.G.O.**,

The dissertation is submitted to Tamil Nadu Dr. M.G.R. Medical University towards partial fulfillment of requirement for the award of M.D. Degree (Branch-II) in obstetrics and Gynaecology.

Place : Chennai

Date :

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# Part - I

# Introduction



## INTRODUCTION

The intra uterine device is one of the most widely used methods of family planning with more than Seventy Million users world wide. The first generation are non-medicated devices includes lippes loop and coil devices used in 1960 and the second generation are medicated devices include copper used in late 60 and progesterone releasing devices. I.U.C.D. is an ideal temporary contraceptive. It is effective, safe and has no systemic effects, even the para medical personnel can be trained for selecting counseling and insertion. The women using I.U.C.D. is more safer, more convenient, more effective in preventing pregnancy than condom, spermicide and any other barrier methods.

Recent research is helping to lift a cloud that has hung over the I.U.C.D. for the past several years. Research has shown that I.U.C.d. use increases the risk of pelvic inflammatory disease and subsequently infertility. Newer studies and new analysis of earlier studies, show that the risk of infection is largely limited to the first four months after I.U.C.D. insertion and to women exposed to sexually transmitted diseases. There appears to be virtually no increased risk of infertility in a woman using a copper IUD who has a mutually faithful sexual

relationship with one partner and thus is not exposed to sexually transmitted diseases.

Similarly, evidence shows that copper and all plastic IUDs do not increase the risk of ectopic pregnancies. In fact, these IUDs provide some protection against them. This finding helps to settle a long standing debate. (Population Reports, Series B, 5<sup>th</sup> March'88).

Successful I.U.C.D. use depends upon (1) use of well designed and tested I.U.C.D.

- 2) Careful screening of the women
- 3) Women who has S.T.D. should not use I.U.C.D.
- 4) Careful insertion carried out under sterile condition with disinfected instruments that places IUD high in uterus. This will minimize the pain during insertion, risk of perforation, infection, and chances of pregnancy and expulsion. An IUD, can be inserted at any time during the menstrual cycle provided the pregnancy is ruled out.

- 5) Informative and sympathetic counseling. An IUD user needs to know and remember what signs call for medical attention, when a copper or hormone – releasing IUD should be replaced, and that the IUD does not protect against A.I.D.S. and other sexually transmitted diseases.
  
- 6) Regular follow-up plus quick access to medical care. Help should be available quickly at any time an IUD user notices any signs of complications or has any concerns. Not only doctors but also nurses, midwives, and other health care providers can safely insert IUD whatever their back grounds, all need special training in Pelvic examination and insertion technique and also in screening, counseling, and followup.

# Historical Review

## **HISTORICAL OVERVIEW**

### **Early International Intrauterine Devices**

The first IUDs for women were developed in nineteenth-century Germany as variations of vaginal pessaries. These early IUDs were rigid metal appliances that extended from the vagina or the extocervix through the cervical canal into the endometrium. They were multipurpose devices that only indirectly acted as contraceptives. In 1902 Hollweg introduced a self-inserted pessary that extended into the uterus and that was intended explicitly for contraception. In 1909 Richter introduced a silkworm-catgut ring with a nickel and bronze wire protruding through the cervical os. Although there is no written record of how the male partner responded to this metal protrusion at the top of the vaginal vault, Pust rapidly replaced the metal wire with catgut thread and added features of the old button-type pessary. Given that these devices were used by women in the days before antibiotics or nonsteroidal anti-inflammatory drugs (NSAIDs), their use quickly became associated with serious infections and significant patient discomfort. These side effects created such an enduring negative image for IUDs that when Grafenberg introduced the first true IUD in the 1920s, it was generally rejected by the medical community.

## **Early Intrauterine Devices**

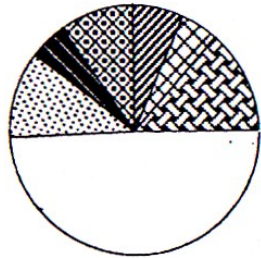
Although several investigators continued to create metal wire devices, most of the successful new IUDs were based on polyurethane frames embedded with barium sulfate to make them visible on radiographs. Within a decade, several plastic devices, such as the S-shaped Lippes Loop, the Tatum T, and the Safe-T-Coil, were in widespread use.

In 1969, Zipper reported that copper had a profound impact on the endometrium. When Tatum wrapped a thin copper wire around the stem of his plastic IUD to create the Copper T200, the first-year typical failure rates decreased to 1.5% to 2%. In 1971 the Copper 7 IUD was introduced and found favour with physicians for use in nulliparous adolescent women who had difficulty successfully using oral contraceptive pills.

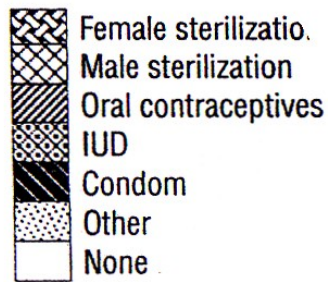
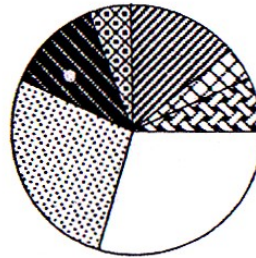
In the late 1960s, investigators at John Hopkins developed the Dalkon Shield – an all-plastic device with small plastic protrusions around its edges to help it adhere to the endometrium and reduce the risk of expulsion. Clinical trials conducted following the FDA regulations for devices (not drugs) revealed that the first-year failure rate was 1% - lower than the rate for any IUD available at the time.

# PATTERNS OF CONTRACEPTIVE USE IN DIFFERENT REGIONS

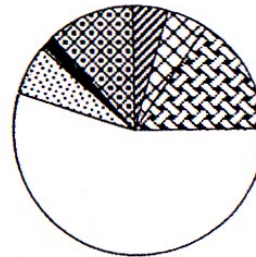
**World**



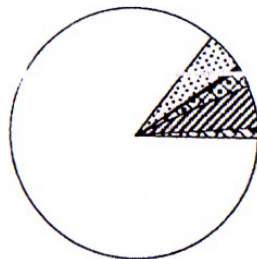
**Developed countries**



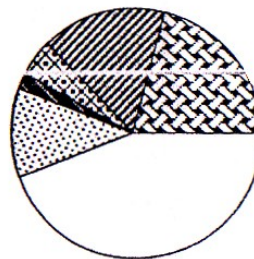
**Developing countries**



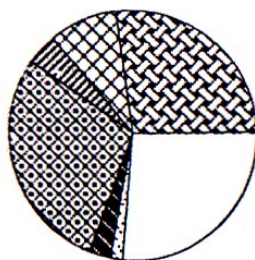
**Africa**



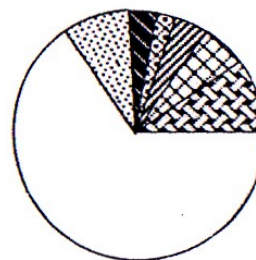
**Latin America**



**East Asia**



**South Asia**



# Review of Literature



## REVIEW OF LITERATURE

An off-quoted but poorly substantiated story described the first IUD as a stone or stones placed in the uterus of camels in North Africa, to prevent pregnancy during long caravan journey. One version of the story however, suggests that the stones were actually put in the vagina, making the methods more akin to a chatity belt than an IUD. Over 2500 years ago Hippocrates is credited with using a hollow lead tube to insert pessaries or other objects into human uterus. Casonova recommended a gold ball; and as recently as 1950 one woman apparently used her wedding ring as a do-it-yourself IUD.

Cervicouterine stem pessaries were used from the late Nineteenth Century. They were made from material as exotic as ivory, glass, ebony and diamond studded platinum and were used for many purposes including contraception. Some were shaped like collar, stud, or had V-shaped flexible wings inserted into the lower uterine cavity. When the devices fractured, as they sometimes did, leaving just the intrauterine part in position, it was learnt that the latter (rather than the surface cap covering the external OS) was the contraceptive. The first completely intrauterine device designed specifically for contraception

was a ring made of silk worm gut, described by Dr. Ritcher of Braslaw. Later, silver wire was wound around the silkworm by Grafenberg and it is of interest that later version were made of German silver, an alloy which contains copper. Now made of coiled stainless steel, the design is still one of the most widely used in China.

Many of the early devices were used as abortifacients as well as contraceptives, and the resultant haemorrhage and pelvic infection led to widespread condemnation by the medical profession. This retarded acceptance of the method, which was only really achieved in 1962 at the first International Conference of IUDs in New York City. The Lippes Loop was presented to this conference by its inventor, and became the standard and now the Cu IUD became popular.

Eur J Gen Pract. 2004 Sep; 10 (3) : 82-7. Related Articles complications of the intrauterine device in nulliparous and parous women.

Department of General Practice and Social Medicine, University of Nijmegen.

## **Objectives :**

The intrauterine device (IUD) is still related to pelvic inflammatory disease (PID), pregnancy, expulsion, perforation and menstrual problems, particularly in nulliparous women. We aimed to study the complications and symptoms of the intrauterine device in general practice, particularly in nulliparous women. METHODS : We used a retrospective cohort study in four general practices participating in the Nijmegen Continuous Morbidity Registration. Selected women had one or more IUDs inserted between 1981 and 2000. data on complications, symptoms and removal of the IUD were obtained from the medical records. RESULTS : 461 women were included, 129 nulliparous and 332 parous women. Users of copper IUDs had a rate of PID of 3.5 per 1000 women-years, rates of (ectopic) pregnancy of 0.6 to 1.1% per year and rates of expulsion of 0 to 1.2% per year. Rates of expulsion for the levonorgestrel – releasing IUDs were 0 to 0.2% per year. Nulliparous women did not show more complications than parous women. Menstrual problems were frequent among users of copper and levonorgestrel - releasing IUDs. One third of the IUDs were removed within the first year after insertion. There was no significant excess of IUD removal among nulliparous women compared with parous women. Main reasons for removal were ‘menstrual problems’ and

‘contraception no longer necessary’. CONCLUSION : Both copper and levonorgestrel – releasing IUDs are safe and highly effective contraceptives, which can adequately be inserted and monitored by general practitioners in nulliparous and parous women.

Reprod Health Matters. 2004 May;12 (23): 136-43. Related Articles, Links

Intrauterine contraceptive devices and risk of pelvic inflammatory disease : standard of care in high STI prevalence settings.

The intrauterine contraceptive device (IUD) is highly effective and cost-effective. IUD use is limited in some regions, however, due to concerns about increased risk of pelvic inflammatory disease (PID) and subsequent complications such as infertility and ectopic pregnancy. Recent reviews suggest that the overall risk of PID with modern IUDs is lower than previously thought, at least in regions with a low prevalence of sexually transmitted infections (STIs). Risk of PID may be higher, however, in places where gonorrhoea and chlamydia are prevalent, where screening for STIs is limited and where aseptic conditions for insertion are difficult to ensure. A World Health

Organization multi-centre study and other studies have confirmed regional differences in STI prevalence, and the WHO study established that PID risk is temporally related to IUD insertion procedures. Studies of the effectiveness of antibiotic due at least in part to use of sub-therapeutic regimens for pathogens commonly implicated in PID. In summary, the IUD can be safe and effective if inserted under aseptic conditions in women free of cervical infection. Further study is needed to define appropriate standards of care for IUD insertion where STI prevalence is high and ability to rule out infection is limited. Even with safe insertion, IUD promotion in areas of high STI/HIV prevalence must address women's needs for dual protection from infection and unwanted pregnancy.

Contraception. 2004 Apr; 69(4) : 279-82. Related Articles.

Clinical outcomes of early postplacental insertion of intrauterine contraceptive devices. Celen S, Moroy P, Sucak A, Aktulay A, Danisman N. Zekai Tahir Burak Women Health Education and Research Hospital, Ankara, Turkey. Sevkielen@hotmail.com

**OBJECTIVES** : To assess the efficacy, safety and thus, advantages and disadvantages, of early postplacental intrauterine

device (IUD) insertion. METHODS : IUDs were inserted within 10 min after postplacental expulsion in term pregnancy both in vaginal and cesarean deliveries via a ring forceps. Of the 276 patients enrolled, 235 were included in the study. Recipients were scheduled for examination before hospital discharge and at 6 weeks, 6 months and 12 months after postplacental insertion. RESULTS : The percentages of women returning for a follow-up visit were 221 (94%), 210(89%) and 183 (78%) at 6 weeks, 6 months and 12 months, respectively. Among IUD acceptors, 74% of the cases had vaginal deliveries and 26% had cesarean deliveries. Continuation rates were relatively high, 87.6% and 76.3%, at 6 and 12 months, respectively, after postplacental insertion of IUD. In this study, the 1-year cumulative expulsion rate with Tcu 380A device was 12.3% which may be regarded as a standard expulsion rate for immediate postplacental insertion of similar models of IUDs. CONCLUSION : The evidence from this study suggests that immediate postplacental insertion of CuT 380 models is an effective, useful, safe, convenient and low-cost procedure for early postpartum contraception.

# Types of IUD's Available

## **Types of intrauterine devices available**

The copper IUD (ParaGardT 380A, Ortho-McNeil Pharmaceuticals, Raritan, NJ) is a T-shaped polyethylene device with 380 mm<sup>2</sup> of exposed surface area of copper on its arms and stem. The polyethylene frame also contains barium sulfate, which renders it radiopaque. The white polyethylene monofilament tail strings pass through and are knotted below a 3-mm plastic ball at the base of the stem. The ball helps reduce cervical perforation with expulsion. The copper IUD is approved by the FDA for up to 10 years of use, but a recent study suggests that it may be effective for at least 12 years. No pregnancies were reported before the eighth year of use.

The progesterone-releasing IUD (Progestasert, Alza Laboratories, Palo Alto, CA; acquired by Abbott Laboratories, North Chicago, IL in 1999) is a T-shaped device made of ethylene / vinyl acetate copolymer. The frame is radiopaque. The stem contains a reservoir of 39 mg of progesterone that is released at a rate of 65 µg/day. The two arms are used only to stabilize the device. The device has two blue-black monofilament strings attached at a hole in the base of the stem. The progesterone-releasing IUD is approved for 12 months of use in the United States.



# Selection of Candidates

## **Selection of candidates**

Product labeling indicates that the IUD user should be parous woman with no history of PID who is in a stable mutually monogamous relationship. The parous woman need not have completed her childbearing but must have demonstrated her fertility. It is estimated that more than 10 million American women fit all aspects of this patient profile and have no contraindications to IUD use; however, many more millions of women may also be excellent candidates for IUD use.

Nulliparity has never been a contraindication to IUD use. Although is recognized that IUD insertion through a cervix that has not been previously dilated may be slightly more challenging, many parous women who have been electively delivered by cesarean section present the same challenges. The uterine cavity of a nulliparous woman is smaller. As a result, the expulsion and failure rates are slightly higher in women who have never borne children, but the IUD still provides excellent pregnancy protection for these women. The real concern with IUD use in nulliparous women who are not at risk for STDs is not strictly medical but medicolegal. Ten percent to 15% of American

couples sustain infertility problems. Placing IUDs in women with unproved fertility exposes the IUD, and potentially the provider, to the risk of charges after IUD removal that the IUD caused infertility. Careful preinsertion counseling is needed to explain potential unrecognized infertility to nulliparous patients.

# Mechanism of Action

## **MECHANISMS OF ACTION**

### **Copper Intrauterine Devices**

Misguided concerns that the IUD works as an abortifacient have seriously limited IUD use by many women and have prevented many providers from offering IUDs. The evidence is clear that the IUD does not work as a postimplantation abortifacient. Segal and co-workers monitored 30 women using IUDs by measuring serial beta-human chorionic gonadotropin levels for 30 months and did not observe any changes in levels. In particular, there was no evidence of an initial rise followed by an abrupt drop in levels characteristic of pregnancy interruption. Wilcox and co-workers found one episode of a transient increase in 107 IUD cycles. Moreover, the failure of uterine washings to retrieve eggs in 56 IUD users in contrast to washings yielding eggs in 4 of 115 controls undermines the hypothesis that IUDs work by creating inflammatory endometrial changes that prevent implantation.

The copper IUD is a functional spermicide; the copper ions released from the device interfere with sperm mobility and create a foreign-body reaction that results in a spermicidal endometrium. Sperm counts in the cervical mucus are significantly lower in IUD users than they are in nonusers. Oviduct counts of sperm are vanishingly small in

IUD users. El-Habashi and Moyer and their co-workers reported finding no sperm in the fallopian tubes of 30 women with IUDs. Microscopic studies demonstrate that the inflammatory changes in the endometrium are spermicidal. Clusters of leukocytes are seen engulfing the sperm. Sagiroglu found that 2 to 16 hours after coitus, spermatozoa were phagocytized in the endometrial cavities of IUD users. The copper ions inhibit sperm penetration into the egg; the acrosomal enzymes needed to dissolve the zona pellucida are not activated in the presence of copper ions.

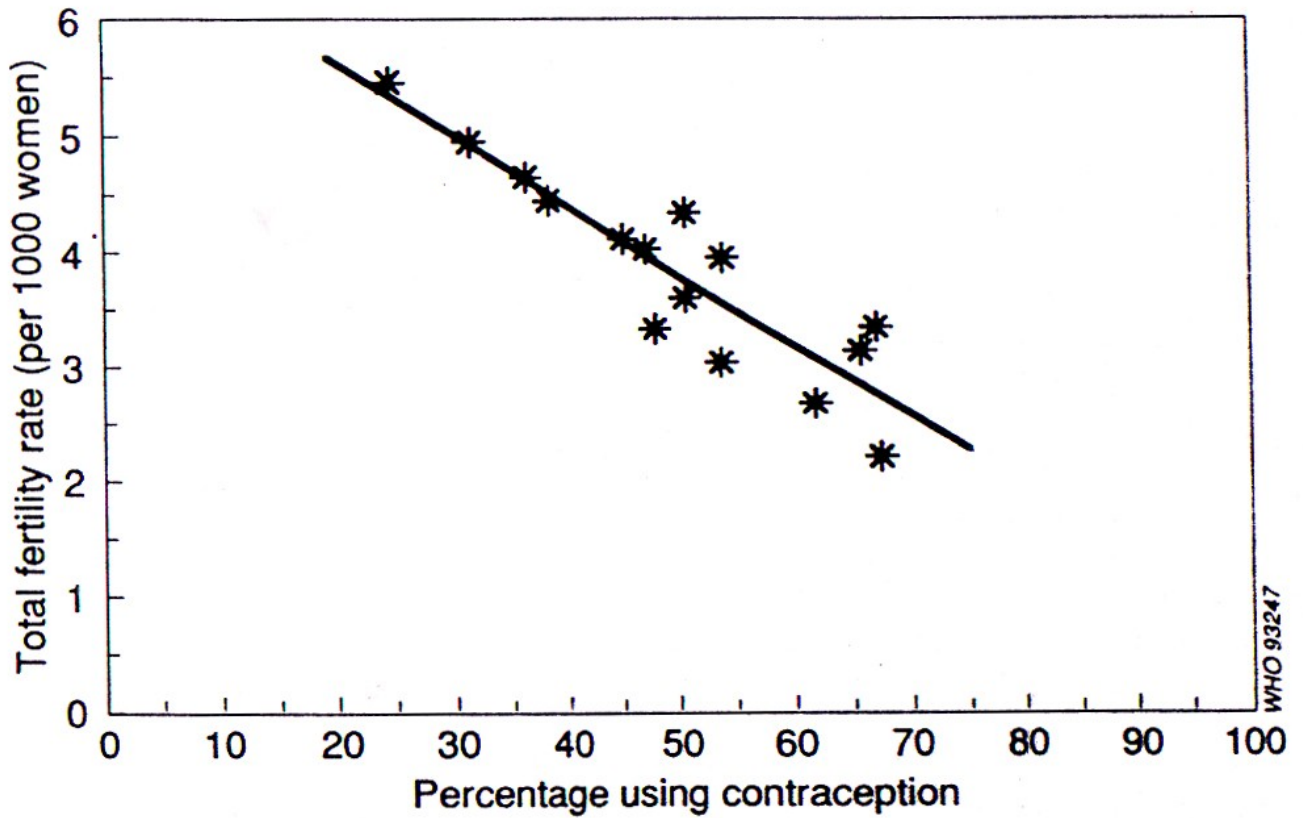
# Efficacy

## **Efficacy**

Because IUDs require little patient action for their continued action, the typical failure rates for IUDs closely approximate the failure rates associated with correct and consistent use; however, the effectiveness of the IUD varies by model. The copper IUD has a first-year failure rate of 0.7% with typical use. Mulliparous women have slightly higher failure rates (0.8%) than parous women. The copper IUD has a cumulative 10-year typical failure rate of 2.1% of 2.7T which is less than the typical first-year failure rate for oral contraceptives. The progesterone-releasing IUD has a first-year typical use failure rate of 2%. The Lippes Loop and Safe-T-Coil IUDs have a first-year failure rate of 3%, but current users of these IUDs may experience significantly lower pregnancy rates because they have successfully used their devices for so many years. Table 1 summarizes the first-year failure rates.



**EFFECT OF CONTRACEPTIVE PREVALENCE ON TOTAL FERTILITY (DATA FROM 15 DEVELOPING COUNTRIES)**



# Contraindication to IUD's

## **Contraindications to Intrauterine Devices (IUDS)**

### ➤ General

- Pregnancy
- Acute unresolved cervicitis (current or within the last 3 months)
- Pelvic inflammatory disease, endometritis, or pelvic tuberculosis (current or within the last 3 months)
- Distorted uterine cavity
- Uterine or cervical carcinoma
- Unexplained vaginal bleeding
- Severe immunocompromise (e.g. acquired immunodeficiency syndrome, chemotherapy)
- Multiple sexual partners or partner with multiple sexual partners

### ➤ IUD specific

- Copper IUD
  - Uterine cavity <6 or >9 cm
  - Copper allergy
  - Wilson's disease

- Severe anemia
  - Menorrhagia
  - Severe dysmenorrhea
- 
- Progesterone-releasing IUD
    - Uterine cavity <6 or >10 cm
    - History of ectopic pregnancy
    - Diabetes

# Part - II

# Aim of Study

## **AIM OF STUDY**

The study is to evaluate IUDs in terms of contraceptive effectiveness, rate of removal, side effects and complications – Bleeding, Perforation, Expulsion and infection. All are measured in (life table rates) that is the number of pregnancy or removal / 500 women users after a specified length of IUD use that is twelve months. In our hospital the copper T 380 is used so it is taken for study.

# Methods and Materials



## **METHODS AND MATERIAL**

All IUD users were taken up for study. This study group includes post partum IUD insertion, interval IUD insertion, Post abortal insertion and post caeserean insertion. Analysis done in this different groups to find out expulsion rate, pregnancy rate and removal rate and the causes for removal were analysed.

Oral enquiry was conducted to the users attending O.P. to find out the type and time of insertion also regarding any complications. Then bimanual pelvic examination speculum examination done to check up the position of IUD and to find out any complication associated with it.

# Insertion Issues

## **INSERTION ISSUES**

### **Timing and Preparation for Insertion**

The IUD can be inserted anytime in a woman's cycle when she is not pregnant. White and co-workers demonstrate that expulsion rates for the first three postinsertion cycles were reduced by more than 30% when insertion was delayed until the end of menses. Theoretically, the optimal time for insertion is at the time of ovulation, when the cervical canal is maximally dilated and progesterone can quiet the myometrial contractions triggered by uterine manipulation. Insertion postpartum is best delayed until the uterus is completely involuted (usually, 4-6 weeks after delivery) to reduce the risk of perforation and expulsion. Nevertheless, international work suggests that insertion immediately postpartum (10-20 minutes after delivery of the placenta) is associated with low risks of uterine perforation and expulsion and may be a reasonable alternative for women who have limited access to the medical care system. Women who have miscarriages or other pregnancy terminations in the first trimester are candidates for immediate IUD insertion unless there is evidence of infection.

The preparation for IUD insertion is straightforward. Women generally benefit from taking NSAIDs 1 hour before the insertion. A small amount of lidocaine injected at the tenaculum site can reduce the discomfort associated with the placement of that instrument. A small cotton swab generously soaked in 20% Hurricane lidocaine can be placed into the cervical canal to reduce insertional discomfort and

vasovagal reactions. If the patient has significant cervical stenosis (requiring cervical dilation), a paracervical block may be needed. Careful cleansing of the ectocervix, the upper vagina, and the cervical canal is intended to reduce bacterial contamination with insertion.

### **Insertion Complications**

Vasovagal reactions occur in approximately 1% of women with cervical manipulation, particularly in women with significant cervical stenosis. If a patient is known to be at increased risk for vasovagal reactions, appropriate equipment should be available for resuscitation, and a prophylactic paracervical block should be placed. When a transient vasovagal reaction develops during insertion, supportive measures are generally adequate.

Uterine perforation occurs once in every 770 to 1600 insertions. The copper IUD is associated with fewer perforations than the progesterone releasing IUD. Risk factors for uterine perforation include an immobile or extremely verted uterus and, most significantly, an inexperienced inserter. Lactation does not increase the risk of perforation. Most perforations occur when the uterus is initially sounded. The sound is the first instrument introduced into the uterus.

### **Postinsertion Instructions**

The patient should be instructed to check the length of the string after menses each month to ensure that the device is still in place. Although the risks of postinsertion problems are small, the woman

should be advised to watch for symptoms consistent with the three main IUD-related problems (pregnancy, expulsion, and infection) and to return for further professional evaluation should any develop. A moderate increase in menstrual blood loss and cramping can occur in the first 2 to 3 months following insertion of the copper IUD.

### **Return to fertility**

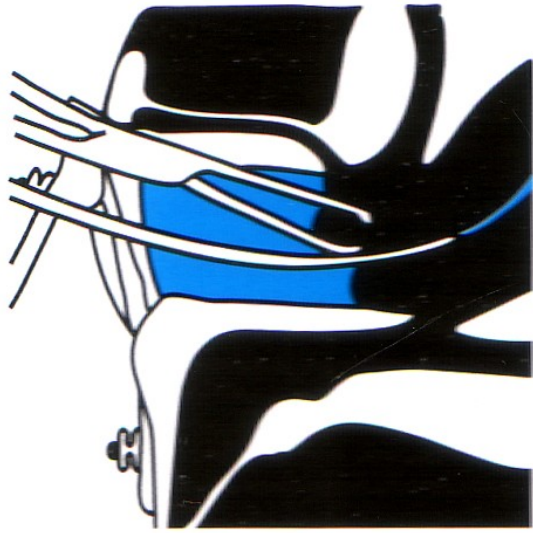
The contraceptive effects of the IUD are rapidly reversible, therefore, the IUD is very appropriate as an interval method to help couples space their pregnancies. Pregnancy rates following removal of the copper IUD have been reported in several studies. The median time to planned pregnancy is about 3 months. Younger women had more rapid and more complete (100%) return to fertility. After controlling for age at time of removal; the duration of use had no impact on the time of return to fertility.

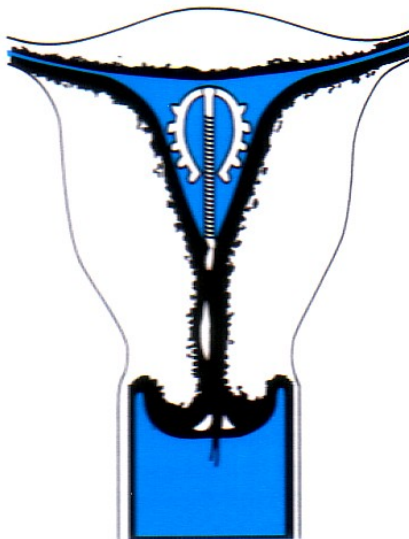
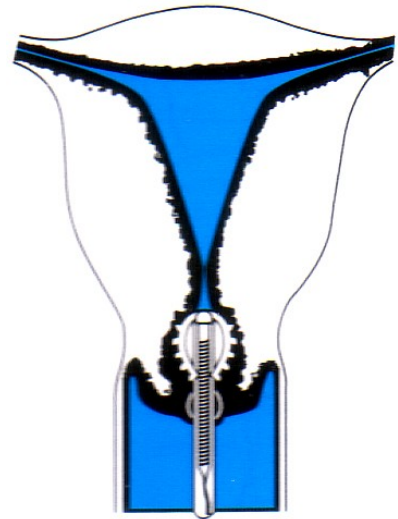
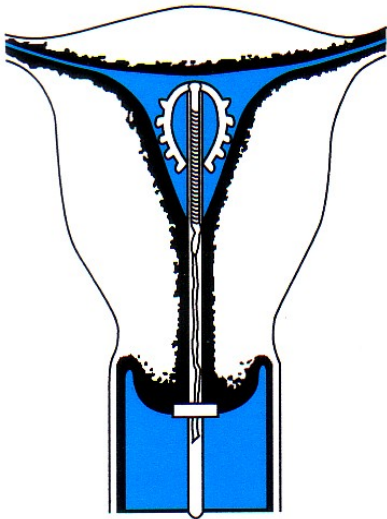
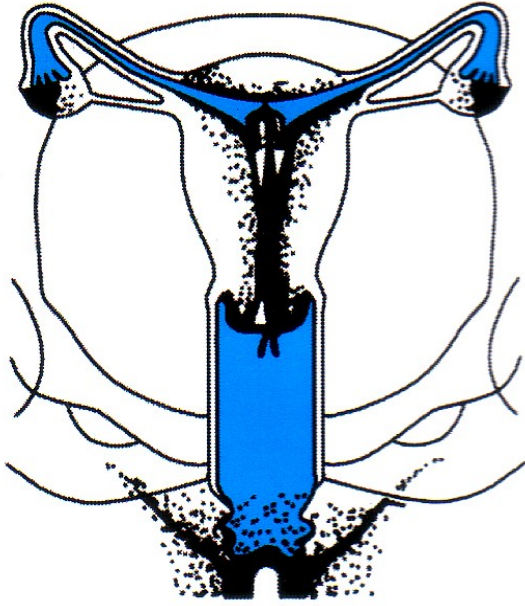
### **Newer devices**

It is expected that the levonorgestrel IUD will become available in the United States within a year. Carrying the brand name Minera (Berlex Laboratories, Wayne, NJ), it will probably be approved for 5 years of use. The device is a T-shaped polyethylene frame with a cylinder of polydimethylsiloxane / levonorgestrel molded within its stem that releases 20 µg of levonorgestrel per day. Worldwide trials have shown that the first-year typical use failure rate is 0.1%. The mechanisms of action are related to the local application of progestin

and are similar to the mechanisms of the progesterone-releasing IUD. The cervical mucus thickens and prevents the passage of sperm into the upper genital tract. The inflammatory changes induced by the plastic frame also contribute to efficacy by acting as a spermicide. The progestin suppresses the endometrium and occasionally suppresses ovulation. The side effects with this device are also influenced by the progestin. Menstrual changes are noted by most users. Women generally experience heavier bleeding in the first cycle but are more likely to experience oligomenorrhea, spotting, or amenorrhea in subsequent cycles. Although the progestin will not reliably suppress ovulation, it can show the atresia of existing follicles; therefore, an increased risk of functional ovarian cysts is associated with the levonorgestrel IUD. The circulatory levels of progestin are lower than with other progestin contraceptives, thus a few women may complain of bloating or breast tenderness with the levonorgestrel-releasing IUD. This IUD has many attractive features.

A frameless IUD (FlexiGard or Cu-Fix) is used in Scandinavia for nulliparous women with smaller endometrial cavities. It consists of six pledgets of copper with a surface area of 330 mm<sup>2</sup> placed in tandem on a polypropylene string that is knotted at both ends. The knot at the top of the string is embedded into the myometrium at insertion, and the strings below the lower knot protrude through the cervix for ongoing monitoring.







# Questionnaire

## QUESTIONNAIRE

### **When can a woman have a copper-bearing IUD inserted?**

#### **Having menstrual cycles**

- She can have a copper-bearing IUD inserted at any time within the first 12 days after the start of menstrual bleeding, at her convenience, not just during menstruation. No additional contraceptive protection is needed.
- She also can have the copper-bearing IUD inserted at any other time during the menstrual cycle, at her convenience, if it is reasonably certain that she is not pregnant. No additional contraceptive protection is needed.

#### **Amenorrhoeic (non-postpartum)**

- She can have copper-bearing IUD inserted at any time, if it can be determined that she is not pregnancy. No additional contraceptive protection is needed.

#### **Postpartums and breastfeeding (including post-caesarean section)**

- If she is less than 49 hours postpartum, she can generally have a copper-bearing IUD inserted.
- If she is 4 or more weeks postpartum and amenorrhoeic, she can have a copper-bearing IUD inserted, if it is reasonably certain that she is not pregnant. No additional contraceptive protection is needed.
- If she is 4 or more weeks postpartums and her menstrual cycles have returned, she can have a copper-bearing IUD inserted as advised for other women having menstrual cycles.

#### **Postpartum and non-breastfeeding (including post-caesarean section)**

- If she is less than 48 hours postpartum, she can generally have a copper-bearing IUD inserted.
- If she is 4 or more weeks postpartum and amenorrhoeic, she can have a copper-bearing IUD inserted, if it can be determined that she is not pregnant. No additional contraceptive protection is needed.

- If she is 4 or more weeks postpartum and her menstrual cycles have returned, she can have a copper-bearing IUD inserted as advised for other women having menstrual cycles.

### **Postabortion**

- If she had a first-trimester abortion, she can have a copper-bearing IUD inserted immediately postabortion.
- If she had a second-trimester abortion, she can generally have a copper-bearing IUD inserted immediately postabortion

### **Should prophylactic antibiotics be provided for copper-bearing IUD insertion?**

#### **Routine copper-bearing IUD insertion**

- Prophylactic antibiotics are generally not recommended for copper-bearing IUD insertion. In settings of both high prevalence of cervical gonococcal and chlamydial infections and limited sexually transmitted infection (STI) screening, such prophylaxis may be considered.
- Counsel the copper-bearing IUD user to watch for symptoms of pelvic inflammatory disease (PID), especially during the first month.

#### **Comments**

- The expert Working Group determined that prophylactic antibiotics for copper-bearing IUD insertion provide little, if any, benefit for women at low risk for STIs.
- This recommendation applies to healthy women; women with health conditions (e.g. cardiac valve disorders) that warrant antibiotic prophylaxis for invasive procedures may also need antibiotic prophylaxis for copper-bearing IUD insertion.

# Analysis

## ANALYSIS

### Time of insertion

<b>Puerperal</b>	<b>Post caeserean</b>	<b>Interval</b>	<b>Post abortal</b>
200	50	200	50
40%	10%	40%	10%

### Age wise

<b>15-19 years</b>	<b>20-24 years</b>	<b>25-29 years</b>	<b>30-34 years</b>	<b>35-39 years</b>
110	260	105	20	5
22.05%	51.88%	20.39%	4.77%	0.91%

### **Para wise**

<b>I</b>	<b>II</b>	<b>III</b>	<b>IV &amp; V</b>
295	140	43	22
59.14%	28.37%	8.30%	4.19%

### **Socio Economic Wise**

<b>I</b>	<b>II</b>	<b>III</b>	<b>IV</b>
139	115	45	273
26.67%	9.77%	9.77%	53.79%

### **Educational Wise**

<b>Below VII Std.</b>	<b>VII to SSLC</b>	<b>Above SSLC</b>
248	247	5
49.88%	49.40%	0.72%

### **Total No. of Cases – 500**

	No	%
1. No Complaints	60	35
2. Menorrhagia	32	16
3. Metrorrhagia	11	7
4. Spotting	8	4
5. Dysmenorrhoea	10	5
6. White Discharge	34	17
7. Back Ache	37	32

## COMPLAINTS WITH TIME OF INSERTION

		L.S.C.S.		Puerperal		Post Abortal		Interval	
		No	%	No	%	No	%	No	%
1.	Menorrhagia	2	4	8	4	20	40	50	25
2.	Metrorrhagia					10	20	25	12.5
3.	Spotting					5	10	15	7.5
4.	Dysmenorrhoea	1	2	5	2.5	5	10	14	7.0
5.	White Discharge	2	4	4	2	19	38	60	30
6.	Back Ache	2	4	18	9	20	40	120	60
7.	Pain Lower Abdomen	2	4	8	4	15	30	25	12.5
8.	Cervicitis	1	2	8	4	15	30	26	13



# Discussion

## **DISCUSSION**

From June 2005 to July 2006. 500 cases were taken for study. Out of this 200 were puerperal insertion forming 40%. 50 were post caeserean insertion forming 10%. 200 interval insertion forming 40% and 50 were post abortal insertion forming 10%.

In our series this users were analysed according to agewise 110 were between 15-19 years forming 22.05%, 260 were between 20-24 years forming 51.88%, 105 were between 25-29 years forming 20.39% 20 were between age of 30 to 34 years forming 4.77%, 5 were between 31-35 years forming 0.91%.

In our series the users were analysed parawise 295 were para I forming 59.14%, 140 were para II forming 28.37%, 43 were para III forming 8.30% and 22 were para IV & V foming 4.19% those who are not willing for sterilisation Cu-T was inserted to para-III or more.

In our series the users were analysed according to socio economic group 139 were socio economic group I forming 26.67%, 45

were SE Group II forming 9.77%, 45 were SE Group III forming 9.77% and 273 were SE Group IV & V forming 53.79%.

In our series the users were analysed education wise :

248 were below VII Std forming 49.88%

247 were VII to SSLC forming 49.40%

5 were above SSLC forming 0.72%

Follow up was done in selected number of IUD users in each group at random and 100 users were followed, 40 were from post placental group, 10 were post caesarean Group, 10 were from post abortal group and 40 were from interval IUD users. Complications were analysed followed after 1 month, 3 month, 6 month, 9 months, and after one year.

Out of this 100 users, 9 months and after one year. 35% Menorrhagia was found in 80 users forming 16% Metrorrhagia was found in 35 forming 7%.

Spotting was present in users 20 forming 4% Dysmenorrhoea was found in 25 users forming 5% white discharge was present in 85 users forming 17%. These patients were examined for T.V. and

Moniliasis 20 had T.V. infection forming 4% and the same were treated, Backache was found in 160 users forming 32% pain lower abdomen was found in 50 users forming 10%. These complaints were analysed with the time of insertion.

### **L.S.C.S. GROUP**

- Menorrhagia was found in 2 users forming 4%.  
Dysmenorrhoea was found in 1 users forming 2.
- White discharge was found in 2 users forming 4%
- Back ache was found in 2 users forming 4%
- Pain lower abdomen was found in 2 users forming 4%

### **PUERPERAL GROUP**

- Menorrhagia was found in 8 users forming 4%
- Dysmenorrhoea was found in 5 users forming 2.5%
- White discharge was found in 4 users forming 2%
- Back ache was found in 18 users forming 9%
- Pain lower abdomen was found in 8 users forming 4%

## **POST ABORTAL GROUP**

- Menorrhagia was found in 20 users forming 40%
- Dysmenorrhoea was found in 5 users forming 10%
- White discharge was found in 19 users forming 38%
- Back ache was found in 20 users forming 40%
- Pain lower abdomen was found in 15 users forming 30%

## **INTERVAL GROUP**

- Menorrhagia was found in 50 users forming 25%
- Dysmenorrhoea was found in 15 users forming 7%
- White discharge was found in 60 users forming 30%
- Back ache was found in 120 users forming 60%
- Pain lower abdomen was found in 25 users forming 12.5%

Complaints were analysed with duration of IUCD after 1 month, 3 months, 6 months, 9 months and 1 year. The complaints were same after 1 month and 3 months and after that they are decreased. Menorrhagia was decreased from 16% to 3% at the end of 1 year.

Metrorrhagia was reduced from 7 to 2% spotting was reduced from 4 to 1% Dysmenorrhoea was reduced from 5 to 3%, White discharge was decreased from 17 to 3%. Back ache was reduced from 32 to 12% pain lower abdomen was reduced from 10 to 3%.

In this users expulsion rate was analysed in each group. Expulsion rate was very high in puerperal group forming 60% cases. The reasons for it may due to involution of uterus and patulous cervix. From the interval group 2 expelled the Cu-T forming 1%. From the post abortal group 1 expelled forming 2%. In post Caeserean group the insertion was done on the day of discharge i.e. 10 to 14 days. In this group 1 expelled the Cu. T. forming 2%.

Removal of IUD was analysed in our series. 50 users came for removal of Cu.T. Menstrual disorder was found in 20 forming 4% pain in lower abdomen was found in 20 forming 4% 10 users were planning for further pregnancy forming 2%.

No pregnancy was met in any of our series, no perforation and dislocation was found in any of our series. Out of 16 expulsion cases, 14 cases had seen the expelled CUT. In 2 cases X-rays were taken CUT was not found in the uterine cavity or in the peritoneal cavity, the patients were reassured.

# Summary and Conclusion

## SUMMARY AND CONCLUSION

### Summary

Out of these 500 users that were followed for one year, 200 were puerperal group, 50 were post caeserean group, 50 were post abortal group, 200 were Interval group. Out of these 20 no complaints were found in 60 users forming 35%. Menorrhagia was found in 35 users forming 16%. Metrorrhagia was found in 14 users forming 7%. Spotting was found in 8 users forming 4%. Dysmenorrhoea was found in 10 users forming 5%. White discharge was found in 34 users forming 17%. Back ache was found in 37 users forming 32%. Pain lower abdomen was found in 20 users forming 10%. The Menstrual disorder and other complaints were reduced in due course of use.

The complaints were analysed with time of insertion. In L.S.C.S. group Menorrhagia forming 4%. Dysmenorrhoea form 2%, white discharge form 4%, back-ache form 4%. Pain lower abdomen forms 4%, cervicitis forms 2%. In puerperal group Menorrhagia forms 4%, Dysmenorrhoea forms 2.5% white discharge forms 2%, back-ache forms 9% pain lower abdomen forms 4%. In post abortal group Menorrhagia forms 40%, Metrorrhagia forms 20% spotting forms



10%, Dysmenorrhoea forms 10%, white discharge forms 38% back-ache forms 40%, pain lower abdomen forms 30%, cervicitis forms 30%. In Interval group Menorrhagia forms 25%, metrorrhagia forms 12.5% spotting forms 7.5% Dysmenorrhoea forms 7% white discharge forms 30% back-ache forms 60%, pain lower abdomen forms 12.5% and cervicitis form 13%.

The expulsion rate was analysed in each group. In puerperal group the expulsion rate was very high. 12 users expelled the Cut from 6%. From the interval group 2 expelled the cut forming 1%. From the post abortal group 1 expelled the cut forming 2%. In post caeserean group the insertion was done on 12<sup>th</sup> – 14<sup>th</sup> week. In this group 1 expelled the Cu T forming 2%.

The cause for removal is analysed. 5 users came for removal forming 10%. CuT was removed in 3 users for menstrual disorder forming 4%. For pain lower abdomen CuT removed in 3 users forming 4%. 2 users were planned for further pregnancy forming 2%. The continuation rate was 85%.

Perforation, pregnancy and ectopic pregnancy were not found in our series. The infection is minimized by aseptic precaution, PID is minimized by not inserting the CuT in persons suffering from STD.

Missing thread was seen in 2 in our series. X-ray and USG taken CUT was not found in uterine cavity or in peritoneal cavity. These 2 cases were considered under expulsion group.

## **CONCLUSION**

### **LSCS Group**

Menorrhagia, Dysmenorrhoea, back ache are more common.

### **Puerperal group**

Back ache (9%), Lower abdominal pain (8%) Cervicitis (8%) are predominant.

### **Post abortal group**

Menorrhagia (40%), Back ache (40%) white discharge are common complaints during the course of follow up.

### **Interval group**

Menorrhagia, (25%), white discharge are seen but in less number of cases.

### **Expulsion rate**

Expulsion rate is more in puerperal group.

Less common in Interval and post abortal group.

## **Removal group**

CuT was removed for menstrual disorder in 4% of cases.

For lower abdominal pain CuT removed fro 2 users.

2 users were planned for further pregnancy.

So continuation rate was 85%. CuT has minimal morbidity and mortality.

Expulsion rate was minimal when it was inserted in post-abortal and interval group by well trained person.

White discharge can be minimized in Interval group by inserting CuT under antibiotic cover.

# Proforma for oral enquiry

## **PROFORMA FOR ORAL ENQUIRY**

- I. 1. Name of the User :
- 2. Age :
- 3. O.P. No. / I.P. No. :
- 4. Address :
  
- 5. Religion :
- 6. Socio Economic Status :
- 7. Education Status :
  
- II. Personal History :
  
- III. Family History :
  
- IV. Menstrual History :
- 1. Age of Menarche :
- 2. Cycles & Flow :
- 3. Dysmenorrhoea :
- 4. LMP :

- V. Obstetrical History :
  - a) Age of Marriage :
  - b) No. of deliveries & :  
age of Children
  - c) No. of abortion :
  - d) LCB :
  - e) Last Abortion :
  
- VI IUCD
  - 1. Time of insertion :
    - a. Post – Abortal
    - b. Post – Placental
    - c. Interval
    - d. Post-Caeserean
  
- VII General Examination
- VIII Breast Examination
- IX Abdominal Examination
- X Speculam Examination
- XI Bimanual Pelvic Examination
- XII Vaginal Smear Examination for T.V. 6 Moniliasis

XIII Follow-up	1 <sup>st</sup> Month	3	6	9	1yr
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1. Perforation
2. Menorrhagia
3. metrorrhagia
4. Dysmenorrhoea
5. Spotting
6. back-ache
7. lower abdominal pain
8. white discharge
9. pregnancy with CuT insitu
10. Cervicitis
11. Expulsion
12. Cause of removal



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I.P. No.	Name	Age	Socio Economic	Obstetric History	Time of insertion				Complaints during one year followup					
					Post Abortal	Post Placental	Interval	Post LSCS	Menorrhagia	Metrorahagia	Spotting	Dysmenorrhoea	DischargeWhite	Back Ache
1.	Padma	23	IV	P1			✓			✓				
2.	Noorani	25	I	P1				✓						
3.	Padma	25	IV	P1			✓						✓	
4.	Thara	33	IV	P4	✓						✓			
5.	Gomathi	23	II	P1		✓								
6.	Kamatchi	24	IV	P1				✓		✓			✓	
7.	Indira	42	III	P4		✓								
8.	Valli	24	IV	P1		✓			✓					✓
9.	Selvaranai	40	II	P1			✓			✓				
10.	Nalini	22	IV	P1		✓							✓	
11.	Rajalakshmi	25	IV	P1		✓				✓				
12.	Revathi	24	I	P1		✓							✓	
13.	Sindya	25	IV	P1		✓								

14.	Sudha	20	IV	P1			✓				✓			
15.	Nirmala	29	III	P3	✓					✓				
16.	Deepa	20	IV	P1		✓							✓	
17.	Indira	21	II	P1				✓			✓			
18.	Shabran Banu	23	IV	P1			✓							✓
19.	Nirmala	24	IV	P1		✓							✓	
20.	Bhavanai	21	IV	P1		✓							✓	
21.	Ashma	21	IV	P1		✓								
22.	Sasikala	22	IV	P1		✓				✓				
23.	Rajam	24	IV	P1	✓									✓
24.	Pushpa	23	IV	P1				✓	✓					
25.	Krishnaveni	28	IV	P4			✓			✓				
26.	Saradha	24	IV	P1		✓								
27.	Nirmala	26	IV	P1		✓				✓				
28.	Kumari	26	IV	P1		✓								
29.	Uma	28	II	P3		✓							✓	
30.	Nagarathinam	26	IV	P1		✓				✓				
31.	Sangeetha	27	IV	P1		✓								

32.	Geetha	25	IV	P1		✓							✓	
33.	Vahitha	24	IV	P1			✓				✓			
34.	Nandhini	28	IV	P1		✓							✓	
35.	Seethalakshmi	29	I	P1				✓						
36.	Sundari	25	IV	P1		✓							✓	
37.	Chitra	29	III	P1		✓				✓				
38.	Sabhana	27	II	P1	✓				✓					
39.	Nalini	26	IV	P1		✓							✓	
40.	Ramsan Begum	31	IV	P1		✓				✓				
41.	Meera	30	IV	P1		✓							✓	
42.	Muthulakshmi	30	III	P1		✓								
43.	Indira	18	IV	P1				✓	✓					
44.	Sridevi	28	IV	P1			✓				✓			
45.	Nalini	24	IV	P1	✓									
46.	Kavitha	26	I	P1		✓				✓				
47.	Devi	27	IV	P1		✓							✓	
48.	Visitha	27	IV	P1		✓								✓
49.	Nirmala	25	IV	P1		✓								



50.	Anandhi	30	IV	P1		✓								
51.	Amutha	23	IV	P1		✓								
52.	Vijaya	29	II	P1		✓							✓	
53.	Bharathi	29	IV	P1		✓			✓					
54.	Sridevi	30	IV	P3		✓				✓				
55.	Kalavathy	25	II	P1		✓			✓					
56.	Lakshmi	28	IV	P1	✓									
57.	Viji	31	IV	P1			✓						✓	
58.	Sathya	20	III	P1		✓					✓			
59.	Santhanalakshmi	21	I	P1		✓			✓					
60.	Vimala	26	IV	P1		✓								
61.	Uma	30	IV	P1		✓								
62.	Malliga	24	IV	P1	✓							✓		✓
63.	Indumathi	27	II	P1				✓			✓			
64.	Priya	25	IV	P1		✓								
65.	Sumathy	19	IV	P1			✓			✓				
66.	Thangalatha	22	II	P1		✓								✓
67.	Vimala	28	IV	P1		✓								

68.	Selvi	27	IV	P1		✓			✓					
69.	Kavitha	26	II	P1		✓							✓	
70.	Bhuvana	26	IV	P1				✓	✓					
71.	Vatchala	28	IV	P1		✓			✓					
72.	Suganya	26	IV	P1			✓							✓
73.	Jayanthi	32	IV	P4		✓							✓	
74.	Santhi	34	II	P1		✓			✓					
75.	Tamilarasi	30	IV	P1				✓		✓				
76.	Poongodi	20	IV	P1		✓					✓			
77.	Ambiga	18	IV	P1	✓									
78.	Subashini	22	IV	P1		✓								
79.	Rajalakshmi	36	I	P1		✓								
80.	Priya	32	IV	P4		✓			✓					
81.	Padmavathi	26	IV	P1				✓	✓					
82.	Bhavani	22	IV	P1		✓								
83.	Varalakshmi	30	I	P1				✓					✓	
84.	Parvathi	27	IV	P1		✓			✓					
85.	Geetha	22	IV	P1		✓								✓

86.	Revathi	24	II	P1			✓				✓			
87.	Kalai	20	IV	P1		✓			✓					
88.	Mohana	22	IV	P1		✓			✓					
89.	Sundari	32	IV	P1			✓						✓	
90.	Mullai	22	III	P1		✓								
91.	Soundarya	18	IV	P1				✓						
92.	Saroja	22	IV	P1		✓						✓		
93.	Shalini	24	IV	P1		✓							✓	
94.	Reena	26	IV	P1		✓								
95.	Anitha	24	IV	P1		✓					✓			
96.	Jaya	26	I	P1				✓						
97.	Rajaeswari	18	IV	P1		✓								
98.	Thulasi	22	IV	P1		✓							✓	
99.	Mahalakshmi	24	IV	P1			✓							
100	Rekha	18	IV	P1		✓								✓
101	Roja	26	IV	P1		✓								
102	Manjula	20	IV	P1				✓	✓					

.														
103	Suhasini	26	IV	P1		✓								✓
104	Dhanalakshmi	22	IV	P1		✓			✓					
105	Megala	20	IV	P1			✓				✓			
106	Kathirmathi	28	II	P1		✓						✓		
107	Usha	26	IV	P1		✓			✓					
108	Jeeva	22	IV	P1		✓								
109	Girija	27	IV	P1		✓								
110	Indirani	28	IV	P1		✓			✓					
111	Soniya	18	IV	P1		✓								
112	Meena	19	IV	P1		✓								
113	Dhesam	26	IV	P1		✓			✓					

.														
114	Abirami	20	II	P3		✓								
115	Vasantha	28	IV	P1		✓								✓
116	Samundeeswari	26	IV	P1			✓		✓					
117	Sasikala	26	IV	P1				✓		✓				
118	Muthulakshmi	20	III	P1		✓								
119	Malathi	28	IV	P1		✓							✓	
120	Nirmala	26	IV	P1		✓								
121	Vimalarani	26	III	P1		✓						✓		
122	Mullai	28	IV	P1		✓								✓
123	Kousalya	26	IV	P1		✓								
124	Maya	28	IV	P1		✓							✓	

.														
125	Mythili	22	IV	P1				✓	✓					
126	Subhasini	26	IV	P2		✓								
127	Ramya	22	IV	P1		✓			✓					
128	Chandra	26	IV	P1		✓			✓					
129	Yogalakshmi	22	III	P1		✓								
130	Sowmiya	22	IV	P1		✓								✓
131	Athilakshmi	26	IV	P1		✓			✓					
132	Rubini	18	IV	P1		✓			✓					
133	Rupa	26	IV	P1		✓							✓	
134	Poongodi	22	III	P1		✓								
135	Ambiga	26	IV	P1		✓								✓

.														
136	Nalini	30	IV	P1				✓	✓					
137	Monika	18	II	P1		✓							✓	
138	Lakshmi	26	IV	P1			✓		✓					
139	Parvathi	20	IV	P1				✓						
140	Divya	22	IV	P1		✓								✓
141	Vijayalakshmi	26	IV	P1		✓								
142	Sandya	20	III	P1		✓								✓
143	Kala	26	IV	P1		✓								
144	Sathya	28	II	P1		✓								✓
145	Rani	18	IV	P1		✓						✓		
146	Radhika	20	IV	P2		✓			✓					

.														
147	Kalavathi	20	III	P1		✓			✓					
148	Rukmani	26	IV	P1		✓			✓					
149	Jayanthi	26	IV	P1		✓								
150	Rohini	28	IV	P1		✓								✓
151	Surya	26	IV	P1		✓								
152	Pooja	32	IV	P1		✓								✓
153	Thamarai	24	III	P1		✓								
154	Selvi	18	IV	P1		✓								
155	Nirmala	19	IV	P1		✓							✓	
156	Suganya	22	IV	P1		✓								
157	Radha	20	IV	P1		✓						✓		



.														
158	Roshini	26	III	P1		✓							✓	
159	Subashini	21	IV	P1		✓							✓	
160	Pavithra	24	IV	P1				✓						
161	Govindammal	30	II	P1		✓								
162	Vinitha	28	IV	P1		✓								✓
163	Jothi	18	IV	P1		✓								
164	Bhuvana	18	IV	P1		✓						✓		
165	Sorna	20	III	P1		✓								
166	Dhatchayani	26	IV	P1		✓						✓		
167	Banu	28	IV	P2		✓								
168	Sophiya	28	IV	P1		✓								✓

.														
169	Sharbanu	30	IV	P1		✓								
170	Fathima	19	III	P1		✓								
171	Kalaiarasi	24	IV	P1				✓				✓		
172	Samundi	22	IV	P1				✓						✓
173	Parameswari	22	IV	P1				✓						✓
174	Kamini	28	IV	P1				✓					✓	
175	Raji	26	III	P1		✓								
176	Priya	21	IV	P1		✓						✓		
177	Divyasri	30	IV	P1		✓								
178	Kavitha	19	IV	P1		✓								✓
179	Jayalakshmi	22	II	P1	✓									

.														
180	Sudha	24	IV	P1		✓								
181	Jayasri	26	IV	P1			✓							✓
182	Gunalakshmi	28	IV	P1		✓				✓				
183	Nirmala	26	III	P1		✓								✓
184	Sumathi	20	IV	P1		✓								
185	Dharshini	22	IV	P1		✓						✓		
186	Roja	18	IV	P1		✓								✓
187	Malini	19	IV	P2	✓									
188	Soniya	22	IV	P1		✓				✓				
189	Kuppulakshmi	26	IV	P1		✓								✓
190	Vanam	30	IV	P1				✓						

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191	Pachyamma	28	IV	P1				✓				✓		
192	Shoba	29	II	P1		✓					✓			
193	Durga	22	IV	P1		✓								✓
194	Subashini	30	IV	P1		✓				✓				
195	Sathya	28	IV	P1				✓			✓			
196	Gayathiri	26	III	P1		✓								✓
197	Bharathi	28	IV	P2		✓						✓		
198	Pavithra	29	IV	P1		✓								✓
199	Revathi	25	IV	P1				✓						
200	Keerthana	24	IV	P1		✓					✓			
201	Indira	26	IV	P1				✓	✓					

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202	Ambiga	28	IV	P1	✓									
203	Soundarya	18	IV	P1				✓						
204	Rajaeswari	20	IV	P1		✓								
205	Rekha	20	IV	P1		✓								✓
206	Soniya	26	IV	P1		✓								
207	Rubini	26	IV	P1		✓			✓					
208	Monika	28	II	P1		✓							✓	
209	Rani	26	IV	P1		✓						✓		
210	Selvi	32	IV	P1		✓								
211	Jothi	24	IV	P1		✓								
212	Bhuvana	18	IV	P1		✓						✓		

.														
213	Roja	19	IV	P1		✓								✓
214	Sumathy	22	IV	P1			✓			✓				
215	Meena	20	IV	P1		✓								
216	Nirmala	26	IV	P1		✓							✓	
217	Fathima	21	III	P1		✓								
218	Kavitha	24	IV	P1		✓								✓
219	Malini	30	IV	P2	✓									
220	Sudha	28	IV	P1			✓				✓			
221	Deepa	18	IV	P1		✓							✓	
222	Sathya	22	III	P1		✓					✓			
223	Poongodi	18	IV	P1		✓					✓			

.														
224	Kalai	19	IV	P1		✓			✓					
225	Manjula	22	IV	P1				✓	✓					
226	Megala	26	IV	P1			✓				✓			
227	Abirami	30	II	P3		✓								
228	Muthulakshmi	28	III	P1		✓								
229	Parvathi	29	IV	P1				✓						
230	Sandya	22	III	P1		✓								✓
231	Radhika	30	IV	P2		✓			✓					
232	Kalavathi	28	III	P1		✓			✓					
233	Radha	26	IV	P1		✓						✓		
234	Sorna	28	III	P1		✓								

.														
235	Sumathi	29	IV	P1		✓								
236	Indira	25	II	P1				✓			✓			
237	Bhavanai	24	IV	P1		✓							✓	
238	Ashma	26	IV	P1		✓								
239	Santhanalakshmi	28	I	P1		✓			✓					
240	Subashini	18	IV	P1		✓							✓	
241	Priya	20	IV	P1		✓						✓		
242	Nalini	20	IV	P1		✓							✓	
243	Sasikala	26	IV	P1		✓				✓				
244	Thangalatha	26	II	P1		✓								✓
245	Subashini	28	IV	P1		✓								



.														
246	Bhavani	26	IV	P1		✓								
247	Geetha	32	IV	P1		✓								✓
248	Mohana	28	IV	P1		✓			✓					
249	Mullai	22	III	P1		✓								
250	Saroja	26	IV	P1		✓						✓		
251	Thulasi	22	IV	P1		✓							✓	
252	Dhanalakshmi	26	IV	P1		✓			✓					
253	Jeeva	22	IV	P1		✓								
254	Mythili	22	IV	P1				✓	✓					
255	Ramya	26	IV	P1		✓			✓					
256	Yogalakshmi	18	III	P1		✓								

.														
257	Sowmiya	26	IV	P1		✓								✓
258	Poongodi	22	III	P1		✓								
259	Divya	26	IV	P1		✓								✓
260	Suganya	20	IV	P1		✓								
261	Samundi	26	IV	P1			✓							✓
262	Parameswari	22	IV	P1			✓							✓
263	Jayalakshmi	20	II	P1	✓									
264	Dharshini	25	IV	P1		✓						✓		
265	Soniya	24	IV	P1		✓				✓				
266	Durga	28	IV	P1		✓								✓
267	Padma	29	IV	P1			✓			✓				

.														
268	Gomathi	25	II	P1		✓								
269	Shabran Banu	29	IV	P1			✓							✓
270	Pushpa	27	IV	P1				✓	✓					
271	Amutha	26	IV	P1		✓								
272	Mahalakshmi	31	IV	P1			✓							
273	Kamatchi	30	IV	P1				✓		✓			✓	
274	Valli	30	IV	P1		✓			✓					✓
275	Revathi	18	I	P1		✓							✓	
276	Nirmala	28	IV	P1		✓							✓	
277	Rajam	24	IV	P1	✓									✓
278	Saradha	26	IV	P1		✓								

.														
279	Vahitha	27	IV	P1			✓				✓			
280	Nalini	27	IV	P1	✓									
281	Malliga	25	IV	P1	✓							✓		✓
282	Revathi	30	II	P1			✓				✓			
283	Shalini	23	IV	P1		✓							✓	
284	Anitha	29	IV	P1		✓					✓			
285	Thamarai	29	III	P1		✓								
286	Pavithra	30	IV	P1				✓						
287	Kalaiarasi	25	IV	P1				✓				✓		
288	Sudha	28	IV	P1		✓								
289	Keerthana	31	IV	P1		✓					✓			

.														
290	Noorani	20	I	P1				✓						
291	Padma	21	IV	P1			✓						✓	
292	Rajalakshmi	25	IV	P1		✓				✓				
293	Sindya	30	IV	P1		✓								
294	Geetha	18	IV	P1		✓							✓	
295	Sundari	21	IV	P1		✓							✓	
296	Nirmala	25	IV	P1		✓								
297	Kalavathy	23	II	P1		✓			✓					
298	Priya	20	IV	P1		✓								
299	Revathi	25	IV	P1				✓						
300	Nirmala	27	IV	P1		✓				✓				

.														
301	Kumari	26	IV	P1		✓								
302	Nagarathinam	31	IV	P1		✓			✓					
303	Nalini	30	IV	P1		✓							✓	
304	Kavitha	30	I	P1		✓			✓					
305	Vimala	18	IV	P1		✓								
306	Kavitha	28	II	P1		✓							✓	
307	Bhuvana	24	IV	P1				✓	✓					
308	Suganya	26	IV	P1			✓							✓
309	Padmavathi	27	IV	P1				✓	✓					
310	Reena	27	IV	P1		✓								
311	Jaya	25	I	P1				✓						

.														
312	Roja	30	IV	P1		✓								
313	Suhasini	23	IV	P1		✓								✓
314	Usha	29	IV	P1		✓			✓					
315	Dhesam	29	IV	P1		✓			✓					
316	Samundeeswari	30	IV	P1			✓		✓					
317	Sasikala	25	IV	P1				✓		✓				
318	Nirmala	28	IV	P1		✓								
319	Vimalarani	31	III	P1		✓						✓		
320	Kousalya	20	IV	P1		✓								
321	Subhasini	18	IV	P2		✓								
322	Chandra	23	IV	P1		✓			✓					

.														
323	Athilakshmi	29	IV	P1		✓			✓					
324	Rupa	21	IV	P1		✓							✓	
325	Ambiga	26	IV	P1		✓								✓
326	Lakshmi	27	IV	P1			✓		✓					
327	Vijayalakshmi	23	IV	P1		✓								
328	Kala	27	IV	P1		✓								
329	Rukmani	20	IV	P1		✓			✓					
330	Jayanthi	18	IV	P1		✓								
331	Surya	29	IV	P1		✓								
332	Roshini	21	III	P1		✓							✓	
333	Dhatchayani	28	IV	P1		✓						✓		



.														
334	Raji	30	III	P1		✓								
335	Jayasri	27	IV	P1			✓							✓
336	Nirmala	25	III	P1		✓								✓
337	Kuppulakshmi	28	IV	P1		✓								✓
338	Gayathiri	27	III	P1		✓								✓
339	Sangeetha	29	IV	P1		✓								
340	Sabhana	21	II	P1	✓				✓					
341	Devi	28	IV	P1		✓							✓	
342	Visitha	26	IV	P1		✓								✓
343	Indumathi	24	II	P1				✓			✓			
344	Selvi	23	IV	P1		✓			✓					

.														
345	Parvathi	25	IV	P1		✓			✓					
346	Girija	21	IV	P1		✓								
347	Krishnaveni	26	IV	P4			✓			✓				
348	Uma	22	II	P3		✓							✓	
349	Nandhini	20	IV	P1		✓							✓	
350	Sridevi	19	IV	P1			✓				✓			
351	Lakshmi	27	IV	P1	✓									
352	Vimala	21	IV	P1		✓								
353	Vatchala	25	IV	P1		✓			✓					
354	Kathirmathi	21	II	P1		✓						✓		
355	Indirani	29	IV	P1		✓			✓					

.														
356	Vasantha	21	IV	P1		✓								✓
357	Malathi	26	IV	P1		✓							✓	
358	Mullai	28	IV	P1		✓								✓
359	Maya	25	IV	P1		✓							✓	
360	Sathya	22	II	P1		✓								✓
321	Rohini	25	IV	P1		✓								✓
362	Vinitha	24	IV	P1		✓								✓
363	Banu	25	IV	P2		✓								
364	Sophiya	20	IV	P1		✓								✓
365	Kamini	29	IV	P1			✓						✓	
366	Gunalakshmi	20	IV	P1		✓				✓				

.														
367	Pachyamma	21	IV	P1				✓				✓		
368	Sathya	23	IV	P1				✓			✓			
369	Bharathi	24	IV	P2		✓						✓		
370	Nirmala	21	III	P3	✓					✓				
371	Seethalakshmi	21	I	P1				✓						
372	Chitra	22	III	P1		✓				✓				
373	Vijaya	24	II	P1		✓							✓	
374	Bharathi	23	IV	P1		✓			✓					
375	Shoba	28	II	P1		✓					✓			
376	Pavithra	24	IV	P1		✓								✓
377	Meera	26	IV	P1		✓							✓	

.														
378	Muthulakshmi	26	III	P1		✓								
379	Anandhi	28	IV	P1		✓								
380	Sridevi	26	IV	P3		✓				✓				
381	Uma	27	IV	P1		✓								
382	Tamilarasi	25	IV	P1				✓		✓				
383	Varalakshmi	24	I	P1				✓					✓	
384	Nalini	22	IV	P1				✓	✓					
385	Govindammal	25	II	P1		✓								
386	Sharbanu	24	IV	P1		✓								
387	Divyasri	25	IV	P1		✓								
388	Vanam	20	IV	P1				✓						

.														
389	Subashini	29	IV	P1		✓				✓				
390	Ramsan Begum	20	IV	P1		✓				✓				
391	Viji	21	IV	P1			✓						✓	
392	Jayanthi	23	IV	P4		✓							✓	
393	Priya	24	IV	P4		✓			✓					
394	Sundari	21	IV	P1			✓						✓	
395	Pooja	21	IV	P1		✓								✓
396	Thara	22	IV	P4	✓						✓			
397	Santhi	24	II	P1		✓			✓					
398	Rajalakshmi	23	I	P1		✓								
399	Selvaranai	28	II	P1			✓			✓				

.														
400	Indira	24	III	P4		✓								
401	Santhanalakshmi	21	IV	P1		✓			✓					
402	Rajalakshmi	36	III	P1		✓								
403	Varalakshmi	30	IV	P1				✓					✓	
404	Jaya	26	IV	P1				✓						
405	Vijaya	29	IV	P1		✓							✓	
406	Kalavathy	25	IV	P1		✓			✓					
407	Indumathi	27	IV	P1				✓			✓			
408	Thangalatha	22	IV	P1		✓								✓
409	Kavitha	26	III	P1		✓							✓	
410	Santhi	34	IV	P1		✓			✓					

.														
411	Revathi	24	III	P1			✓				✓			
412	Kathirmathi	28	IV	P1		✓						✓		
413	Abirami	20	IV	P3		✓								
414	Monika	18	IV	P1		✓							✓	
415	Sathya	28	IV	P1		✓								✓
416	Sathya	20	II	P1		✓					✓			
417	Mullai	22	IV	P1		✓								
418	Muthulakshmi	20	IV	P1		✓								
419	Vimalarani	26	IV	P1		✓						✓		
420	Yogalakshmi	22	IV	P1		✓								
421	Poongodi	22	II	P1		✓								



.														
422	Sandya	20	IV	P1		✓								✓
423	Kalavathi	20	IV	P1		✓			✓					
424	Anandhi	30	IV	P1		✓								
425	Amutha	23	II	P1		✓								
426	Bharathi	29	IV	P1		✓			✓					
427	Sridevi	30	IV	P3		✓				✓				
428	Lakshmi	28	IV	P1	✓									
429	Viji	31	IV	P1				✓					✓	
430	Vimala	26	IV	P1		✓								
431	Uma	30	I	P1		✓								
432	Malliga	24	IV	P1	✓							✓		✓

.														
433	Priya	25	III	P1		✓								
434	Sumathy	19	II	P1			✓			✓				
435	Vimala	28	IV	P1		✓								
436	Selvi	27	IV	P1		✓			✓					
437	Bhuvana	26	IV	P1				✓	✓					
438	Vatchala	28	III	P1		✓			✓					
439	Suganya	26	IV	P1			✓							✓
440	Jayanthi	32	IV	P4		✓							✓	
441	Tamilarasi	30	IV	P1				✓		✓				
442	Poongodi	20	IV	P1		✓					✓			
443	Ambiga	18	IV	P1	✓									

.														
444	Subashini	22	IV	P1		✓								
445	Priya	32	IV	P4		✓			✓					
446	Padmavathi	26	I	P1				✓	✓					
447	Bhavani	22	IV	P1		✓								
448	Parvathi	27	IV	P1		✓			✓					
449	Geetha	22	IV	P1		✓								✓
450	Kalai	20	IV	P1		✓			✓					
451	Mohana	22	IV	P1		✓			✓					
452	Sundari	32	IV	P1				✓					✓	
453	Soundarya	18	IV	P1				✓						
454	Saroja	22	IV	P1		✓						✓		

.														
455	Shalini	24	IV	P1		✓							✓	
456	Reena	26	II	P1		✓								
457	Anitha	24	IV	P1		✓					✓			
458	Rajaeswari	18	IV	P1		✓								
459	Thulasi	22	IV	P1		✓							✓	
460	Mahalakshmi	24	IV	P1			✓							
461	Rekha	18	IV	P1		✓								✓
462	Roja	26	IV	P1		✓								
463	Manjula	20	IV	P1				✓	✓					
464	Suhasini	26	II	P1		✓								✓
465	Dhanalakshmi	22	IV	P1		✓			✓					

.														
466	Megala	20	IV	P1			✓				✓			
467	Usha	26	IV	P1		✓			✓					
468	Jeeva	22	III	P1		✓								
469	Girija	27	IV	P1		✓								
470	Indirani	28	IV	P1		✓			✓					
471	Soniya	18	III	P1		✓								
472	Meena	19	IV	P1		✓								
473	Dhesam	26	IV	P1		✓			✓					
474	Vasantha	28	IV	P1		✓								✓
475	Samundeeswari	26	IV	P1			✓		✓					
476	Sasikala	26	IV	P1				✓		✓				

.														
477	Malathi	28	IV	P1		✓							✓	
478	Nirmala	26	IV	P1		✓								
479	Mullai	28	III	P1		✓								✓
480	Kousalya	26	IV	P1		✓								
481	Maya	28	IV	P1		✓							✓	
482	Mythili	22	IV	P1				✓	✓					
483	Subhasini	26	IV	P2		✓								
484	Ramya	22	III	P1		✓			✓					
485	Chandra	26	IV	P1		✓			✓					
486	Sowmiya	22	IV	P1		✓								✓
487	Athilakshmi	26	II	P1		✓			✓					

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488	Rubini	18	III	P1		✓			✓					
489	Rupa	26	IV	P1		✓							✓	
490	Ambiga	26	IV	P1		✓								✓
491	Nalini	30	II	P1				✓	✓					
492	Lakshmi	26	IV	P1			✓		✓					
493	Parvathi	20	IV	P1				✓						
494	Divya	22	IV	P1		✓								✓
495	Vijayalakshmi	26	IV	P1		✓								
496	Kala	26	III	P1		✓								
497	Rani	18	IV	P1		✓						✓		
498	Radhika	20	II	P2		✓			✓					

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499	Rukmani	26	IV	P1		✓			✓					
500	Jayanthi	26	IV	P1		✓								