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The present study was undertaken to determine ovulation by the easy, simple and cheaper procedures such as endometrial biopsy, cervical mucus examination and in some cases serial ultrasonography.

Detection of ovulation by these simple methods has also done by Birnberg (1958), Allende (1956), Ajjandl (1981) and Blackwell (1984).

In the present study 80% of the patients complained of primary infertility, 16% of secondary infertility and 4% of secondary amenorrhoea. The higher incidence of primary infertility in patients is probably due to the growing awareness among the general population for early conception and early treatment in the case of failure to conceive within one year of marital life.

The age group in which infertility was more common in the present study was 21-25 years (48%), 22% cases belonged to 16-20 years age group and 24% in the 26-30 years. This higher incidence of infertility in the 1st and 2nd decades of the reproductive life of a woman is probably due to early age marriage in our country. 54% of the cases in our study belonged to the lower middle socio-economic status. Though infertility is known to be more common in the higher socio-economic group. The higher incidence in the middle and lower group is because of the general
population around Jhansi belonged mostly to these groups. Only 5% of total patients attending the OPD are from higher strata of society.

Maximum number of cases (91%) belonged to the Hindu religion because it is a basically Hindu community.

Though 52% cases belonged to urban areas it is not because of infertility is less common in rural areas. There is less awareness of the fact among the rural population that infertility can be treated and that it is not a curse of the God.

54% of the cases complained of infertility of 1-5 years duration. This was probably because the lesser duration of infertility the more people had hopes of conceiving very few cases belonged to the group with the duration of infertility of more than 10 years.

100% of the cases with polycystic ovary syndrome and 75% with oligomenorrhea had primary infertility. These cases with menstrual irregularities were found to have suffered from irregular periods over since menarche. 83% cases with normal menstrual cycles had primary infertility and cause infertility in these cases could either be failure to ovulate or due to other factors.

Hypoplastic uterus were found in 25% of poly-menorrhea and 25% cases of oligomenorrhea and in 50% cases of secondary amenorrhea. Patients with normal menstruation hypoplastic uterus was found in 8.33% cases.
Unilateral palpable ovary was found in 12.5% cases of oligomenorrhea and 5.5% cases with normal cycles.

Bilateral palpable ovaries were found in 2.7% cases of normal cycles, 2.7% cases showed unilateral cystic ovary in patients with normal menstrual cycles. Vaidya et al (1978) reported 20% cases of hypoplastic uteri in oligomenorrhea. They found one case of one ovary cystic and one case of both ovaries were cystic in hypomenorrhea and none in oligomenorrhea.

PREMENSTRUAL MOLIMINA

Molimina symptoms such as breast tenderness, headache, œdema and dysmenorrhea are generally believed to occur in ovulatory cycles (Melody, 1961; Magyar et al, 1978). Our study dysmenorrhea was present in 58.33% patients of ovulatory cycles. This is in accordance with the findings of Lamb et al (1953) who found it in upto 75% of cases. Pain was not a significant finding in anovulatory cycles, and found in only 20% cases.

Breast tenderness was noticed in 22.22% of ovulatory cases and 10% in anovulatory cycles.

Abdominal fullness in the study cases was seen only in the ovulatory patients (27.77%) whereas 10% in anovulatory group.

Headache occurred exclusively in ovulating patients. It was found in 2.77% of ovulating patients. No patient complained of headache in anovulatory cases.
Mitteschmerz was found in only one (2.77%) case although the incidence as high as 35%. O' Herlihy et al (1980) has reported that this discrepancy can be explained on the ground that the majority of our patients belonged to rural background and poor literacy level and therefore the patients failed to report such symptoms as they did not attach enough significance to it.

CERVICAL MUCUS

Cervical mucus changes were found to be quite reliable in our study in detecting ovulation supported by Insler et al (1970). Similar experiences have been reported by Zondek Rozin (1954) and Malik et al (1979).

In our study, 14th day mucus samples in ovulatory group showed cervical mucus viscosity to be low in 30 (83.33%) cases, moderate in 5 (13.8%) and high in 1 (2.7%) cases. These features of cervical mucus are obviously due to inhibitory action of progesterone on cervical glands after ovulation fully in accord with the observations of Zondek and Rozin (1954), Ronald and Mac Donald (1969).

In anovulatory cycles findings were reversed with viscosity at 14th day it was moderate in 25% and higher in 75% cases.

And ferning was also +2 to +4 in 10%, 30% and 60% cases respectively. This indicates the continuous unopposed action of oestrogen on cervical mucus due to persistence of graffian follicle and failure of ovulation to occur.
Malik et al (1979) in a similar study have reported premenstrual mucus minimum or negative ferning in 28.27% cases of ovulatory cycles. In anovulatory cycles they found complete or incomplete ferning in 53.10% and 27.22% cases respectively. These results though not similar, but are comparable to our own figures.

**ENDOMETRIAL BIOPSY**

Endometrial biopsy is the best single test for ovulation detection according to Moyees et al (1950).

It was performed in all cases in the present study. On the basis of histology, 72% showed secretory endometrium, 20% showed proliferative endometrium and 4% showed tubercular endometritis.

Other workers have reported similar findings (Ajjandi et al, 1981 and Purandare et al, 1984).

On the basis of histology ovulation was diagnosed in 75% cases of polymenorrhoea and 62% cases of oligomenorrhoea. The groups of cases with normal menstrual cycle showed ovulation in 75.2% cases.

Anovulation was found in 25% cases of polymenorrhoea, 37% cases of oligomenorrhoea and 50% of secondary amenorrhoea with lowest incidence in cases with normal menstrual cycle (22.22%).

Lower incidence of ovulation have been reported by Vaiday et al (1978). They found ovulation in 33% cases of oligomenorrhoea and anovulation in 12% cases.
Irrespective of the menstrual pattern anovulation was found in 20% cases in our study. Gupta et al (1980) and Saha (1961) have reported incidence of anovulation in 16.9% and 19.5% cases respectively. These findings are more or less similar to our findings.

Tubercular endometritis was seen in 4% cases in our study. Similar to that Saha et al (1961) reported it as 3% and Gupta et al (1980) reported a higher incidence of tuberculosis in 8.66% cases in his study.

**ULTRASONOGRAPHY**

On serial ultrasonography findings show that detection of ovulation by ultrasonography in comparison with endometrial biopsy is almost the same.

Our study showed that ovulation was detected in 97.22% cases with secretary endometrium and only 2.77% cases has no ovulation with secretary endometrium.

In proliferative endometrium 10% of cases had anovulation.

2 cases of anovulation conceived during the course of study who were taking the treatment for anovulation as ovulation induction (Clonifen citrate).

Hyperprolectinemia was found in 2 cases who were given treatment for it and out of 2, 1 conceived during treatment.

Hypothyroidism was found in 2 cases. They were given treatment and had conceived during treatment.