



Discussion



DISCUSSION

According to WHO, failure to conceive after 1 year of unprotected intercourse is labelled as infertility. Incidence of infertility in general population is 10-15% (Harrison, 1984; Pepperel, 1984).

Templeton et al. (1990) reported an overall prevalence of infertility as 14%, although half of them eventually conceived. Hull et al. (1985) described the overall prevalence of infertility in U.K. as 17%. In female infertility work up, ovulation is the one of the most important parameter. Ovulatory factor infertility is the most treatable type of infertility.

In the present study, the new regime for ovulation induction was given to patients i. e. 10 days course of clomiphene citrate in 100 mg/day from 2nd day of cycle, those had shown resistant to 5 day course of clomiphene citrate in increasing doses upto 150 mg/day.

Control group had received the 5 day course of clomiphene citrate with human menopausal gonadotropins. Comparison was done for rate of ovulation and cost effectiveness of treatment regimen.

GENERAL CONSIDERATIONS

Infertility may be due to female partner or male partner, in some cases both may be at fault, while in some cases no cause may be found. Figure 1 shows that in the present study, females alone were responsible for 55% of cases and males alone were at fault in 10% cases of infertility. In 25% of cases both partners were accused, In 10% of cases no cause was found

(Table 11).

<i>Factor</i>	<i>FIGO Manual (1990)</i>	<i>Our Study</i>
Female	25-37%	55%
Male	8-22%	10%
Both	21-38%	25%
Unknown	3-14%	10%

According to FIGO Manual (1990) female are at fault in a 25-37% of cases and males are responsible for 8-22%,. In 21-38% of cases both partners are responsible while in 3-14% of cases no cause is detected (Table 11).

As contributions of various causes of subfertility varies from country to country and clinic to clinic. A detailed study of the causes of subfertility was seen under WHO between December, 1980 and Sept., 1993 in University Clinic at Kandang Kerbau Hospital. According to that study female infertility is 52.8% which is in accordance to our results i. e. 55%.

According to Emil Novak and coworkers male factors are prevalent in 25-40% of infertility cases. Female factors alone are responsible in 40-55% of cases, both in 10% of cases and 10% of cases are labelled as unexplained infertility,

The incidence of primary and secondary infertility in the present series was reported as 77.50% and 22.50% respectively (Table 2, Figure 2).

It is in agreement with the result of Panda et al. (1977) from Orissa, who reported the incidence of primary and secondary infertility as 80.04% and 19.06% respectively. Rin et al. (1975) from Tokyo also

respectively.

Saha (1961) and Thomas Adrian et al. (1980) reported a lower incidence of primary infertility. The former reported in Bihar an incidence of 69.5% and 30.5% and the latter workers from Australia reported the incidence of 61.5% and 34.5% of primary and secondary infertility respectively.

· *Table - 12*

<i>Author</i>	<i>Primary Infertility</i>	<i>Secondary Infertility</i>
Saha (1961)	69.5%	30.5%
Rin et at. (1975)	78.5%	21.5%
Panda et al. (1977)	80.04%	19.06%
Thomas Adrian (1980)	69.5%	30.5%
Present study (1997-98)	77.50%	22.50%

Most of the female partners in the present study were between 21-30 years of age (Table 3). This is in accordance with the results of Panda et al. (1972).

Figure 3 shows that in the present study in the age group of 21-25 years 48.4% of cases belonged to primary infertility group while only 5.44% were grouped under secondary infertility.

Secondary infertility is maximum recorded in 26-30 years of age group i.e. 61.1 %. As the age increased more than 30 years, incidence of infertility was decreased rather we should say less number of patients consulted. But trends are changing, prevalence of infertility in higher age group is increasing (Table 3).

As shown in Figure 4, most of the patients of primary infertility (46.4%, n=30) came for check up and treatment with, in a duration of 5 years or less, after marriage while in the secondary infertility group more patients come after 6-10 years duration of marriage (Table 4). Saba (1961) observed the majority of the patients whether of primary or secondary infertility to have a duration of 6- 10 years of infertility.

According to Figure 5, in our study the contributions of various factors to infertility was, as ovarian factor contributed for more than 50% of cases (n=35), tubal etiology was present in 15.39% (n=10) of cases, uterine and cervical factors were responsible for 9.23% (n=6) and 1.54% (n=1) of cases respectively (Table 5).

Tubal factors were more important in secondary infertility and was responsible for 30% of cases. Uterine factors were cursed in less than 10% cases. Cervical factor may be blammed in less than 2% of cases. In many cases more than one etiology was detected.

According to FIGO Manual (1990) ovarian factors are responsible for 26-44% of cases. Tubal factor infertility is present 36-44%. But incidence of tubal factor is very high in Africa i. e. 85% Endometriosis is responsible for 10% of cases (Table 13).

Table 13

<i>Cause</i>	<i>FIGO Manual (1990)</i>	<i>WHO</i>	<i>Present study</i>
Ovulatory factors	26-44 %	23.8%	60.0%
Tubal factors	36-44%	10.6%	22.2%
Endocrinal factor	1-10%	15.8%	11.23%

According to WHO study, ovulatory disorders are present in 23.8% of cases. Tubal causes are present in 10.6%, endometrial and peritoneal factors are responsible for 15.8% of cases and other include 2.5%.

Table 14

<i>Authors</i>	<i>Average size of follicle</i>
Hackeloca et al. (Spontaneous)	16-33 mm
Kerin et al. (Spontaneous)	23.62±0.4 mm
Veemesh et al. (Spontaneous)	20.8±0.6 mm
Veemesh et al. (Induced)	25.4±1.3 mm
Present study (5 day CC)	19.80 mm
Present study (10 days CC)	21.2 mm

As shown in Table 14, Hachcloeca et al. noted a linear increase in the size of the dominant follicle through a normal menstrual cycle. Developing follicles destined to ovulate increase in size 1-2 mm/day and reach a maximum diameter of 16-33 nun before ovulation.

Kerin et al. reported a mean peak diameter before ovulation was 23.6±0.4 mm. Veermish et al. (1997) compounded the follicular size in spontaneous unstimulated menstrual cycle size of follicle in stimulated cycle was significantly higher than spontaneous cycle.

In the current study average size of follicle with 10 days extended course of clomiphene citrate was 17.04 nun on the 13th day of cycle. This value is in accordance to the size reported by Hackelour et al.

diameter) that can be imaged throughout the menstrual cycle even during menstruation and pre antral follicle are too small to be imaged under the influence of follicle stimulation hormone (FSH) released by anterior pituitary gland in response to pulsatile GnRH during the early part of menstrual cycle, a few follicles will undergo progressive development as follicular stimulation progresses. one or occasionally two follicles will continue to develop into the dominant follicles. Many of the developing follicles -will not pass the developmental stage of 10-14 mm diameter before they degenerate.

During the follicular developmental phase one or more follicles may develop. In 5-11% of natural cycles, two dominant follicles may develop, but they are generally in opposite ovaries.

Table 15

<i>Drugs</i>	<i>Ovulation rate</i>
Clomiphene citrate (Standard dose)	<80%
Gonadotrophins	30-100%

Table 20 shows the result of different authors used clomiphene for extended period. Labo et al. used 100 mg CC for 8 days and ovulation was seen in 62% of cycles. R. Fluker et al. used 100 mg clomiphene citrate for 10 days and ovulation was reported in 47% of cycles. In the current study clomiphene citrate was used for 10 days in 100 mg doses per day and ovulation was reported in 66.66% of ovulatory cycles.

Authors	Regime	Observations
Lobo et al.	100 mg CC for 8 days	62%
R. Fluker et al.	100 mg CC for 10 days	47%
Present Study	100 mg CC for 10 days	66.66%

In current study ovulation rate with clomiphene citrate 10 days therapy was 66.6%.

As shown in Figure 7 ovulation with 10 days course of clomiphene citrate was 66.66% (n=10) and with clomiphene citrate x 10 days (n= 18).

Table 17 shows the conception rates in two groups.

<i>Author</i>	<i>CC Regimen</i>	<i>Conception Rate</i>
Lobo et al.	100 mg for 8 days	23%
Fluker el al.	100 mg for 10 day	17%
Current Study	100 mg for 10 day	30%

In current study 10 days course of clomiphene citrate conception rate was 30%, Labo et al. reported conception rate with 8 day course as 23% and Fluker et af. reported conception with 10 days course as 17%.

There is not significant difference in cost of two regimes. So for the poor infertile couples 10 day course of colmiphene citrate is effective method for the ovulation induction, rather than no treatment due to lack of source.