

# EXPERIENCE OF A COMPREHENSIVE INFERTILITY CLINIC IN THE DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY, UNIVERSITY OF SINGAPORE

By S. S. Ratnam, P. C. T. Chew and M. Tsakok

## SYNOPSIS

**From 1970 to 1974, 709 infertile couples were investigated in the University Department of Obstetrics and Gynaecology. Problems with ovulation accounted for 22.5%, blocked tubes 11.7%, endometriosis 14.7%, oligospermia or azospermia 23.1% and mixed gynaecological problems 5.8%. No apparent cause was found in 22.1%. With increasing use of laparoscopy, asymptomatic endometriosis was diagnosed in many infertile women. Highest pregnancy rate of 47.8% was seen in the apparently normal couples.**

## INTRODUCTION

The study of infertility is complicated because many factors may be responsible, either separately or in combination, in the male and the female. Investigations have often been incomplete and spread over several months. In the University Department of Obstetrics and Gynaecology, at the comprehensive infertility clinic service, a rapid system of investigation scheme has been formulated and this paper presents a review of our experience in 709 couples who were seen from 1970 to 1974.

## METHOD OF INVESTIGATION

The normal scheme of investigation for each couple covers about three months. A full history and general vaginal examination are carried out at the first visit. The husband's seminal fluid is examined and repeated if the sperm count is less than 20 million/ml. In cases azospermia or severe oligospermia, the male is interviewed and examined and testicular biopsy is carried out, when indicated.

Information on ovulation is obtained during the first or second month by examination of a basal body temperature chart, examination of ovulatory cervical mucus and a secretory endometrium during the second half of cycle. A post-coital test is also taken at the expected time of ovulation to check the compatibility of the male and female. Tubal patency was diagnosed by tubal insufflation prior to 1972. Since then it has been replaced by laparoscopy and hydrotubation with methylene blue. At the same

time, the morphological state of the ovaries is assessed and an endometrial curetting obtained for histology and culture for T.B. If the ovaries show no evidence of ovulation, are sclerotic or appear abnormal at laparoscopy, ovarian biopsies are performed and if the uterus is acutely retroverted, a laproscopic ventro-suspension is carried out at the same time (Tsakok and Ratnam, 1975). In cases where fallopian tubes are blocked, a hysterosalpingogram is carried out.

## RESULTS

A total of 788 infertile couples were seen and primary infertility accounted for 75.5% of cases. Seventy-nine cases or 10% were incompletely investigated or defaulted.

Of the remaining 709 couples, the proportions of the various infertility factors are shown in Table I.

Twenty-two and a half percent had problem with ovulation. This included patients with amenorrhoea, oligomenorrhoea and defective luteal phase. Tubal blockage was present in 11.7% while endometriosis accounted for 14.7%. In 90% of patient with endometriosis, the only complaint was infertility and the diagnosis was made on laparoscopy. All had match-head lesions and the uterosacrals were thickened, oedematures and nodular.

A small proportion, about 5.8% had a combination of fibromyoma, adenomyosis and congenital uterine anomalies as contributory factor of infertility.

Oligospermia and azospermia were present in 23.1% of cases. Only 10% (16 patients) had a recognizable cause such as varicocele or hydrocele. Majority of the rest refused testicular biopsy. In 36.6% (60 patients) of these cases, female factors causing infertility were also present.

---

Department of Obstetrics and Gynaecology, University of Singapore.

S. S. RATNAM, M.D., F.R.C.S., F.R.C.S. (E), F.R.C.S. (G),  
F.R.C.O.G., F.A.C.S., F.I.C.S., Head and Professor.

P. C. T. CHEW, M.B., B.S., M.Med., M.R.C.O.G., Lecturer.

M. TSAKOK, M.B., B.S., M.Med., M.R.C.O.G., A.M., Senior Lecturer.

---

**TREATMENT**

Table II shows the number of pregnancies occurring in the infertile patients.

In the group with ovulatory defect, 113 patients had problems of anovulation or infrequent ovulation. All were treated with clomiphene and 36 patients conceived, a pregnancy rate of 31.9%. In 17 patients, human pituitary gonadotrophin was used. Four patients or 23.6% became pregnant. Of the remaining 30 patients with defective luteal phase, clomiphene in combination with human chorionic gonadotrophin were given. Nine pregnancies (30%) occurred.

Tubal surgery including salpingo-lysis, salpingostomy and cannulation of tube with absorbable suture material were carried out in 28 patients. Only 15

patients had patent tube postoperatively, and four patients (14.3%) conceived.

Fifty-eight patients with matched endometriotic lesions had a complete course of progestogen therapy of 9-12 months. 27.6% became pregnant within a year after therapy.

Table III shows the various types of treatment in the male infertile patients. Hormone therapy included giving testosterone, masterolone, thyroxine and clomiphene. Only a pregnancy rate of 12.9% was achieved. Twenty-five percent of patients became pregnant with artificial insemination of fresh donor semen and 36.8% conceived with insemination of husband's semen after centrifugation. Fourteen patients were treated with antibiotics for 3-6 months; two pregnancies occurred. In 9 patients who had variococoelectomy or Jaboulay's operation; 4 pregnancies occurred.

TABLE I  
MAIN CONTRIBUTORY FACTORS IN 709 INFERTILE COUPLES

Infertility Factors	No.	Per Cent
Problems with ovulation	160	22.5
Blocked tubes	83	11.7
Endometriosis	104	14.7
Mixed gynaecological problems	41	5.8
Oligo-or azoospermia	164	23.1
Apparently normal couple	157	22.1
Total	709	100

TABLE II  
RESULTS OF TREATMENT IN 591 COUPLES

GP	No. of patients treated	No. of pregnancies	% pregnancy
Problems with ovulation	160	49	30.6
Blocked tubes	28	4	14.3
Endometriosis	58	16	27.6
Mixed gynaecological problem	41	13	31.7
Oligo-or azoospermia	147	29	19.7
Apparently normal couples	157	75	47.8
Total	591	186	31.5

TABLE III  
SHOWS THE VARIOUS TYPES OF TREATMENT IN THE MALE INFERTILE PATIENTS

Treatment	No. of patient	No. of pregnancies	% pregnancy
Hormone therapy	85	11	12.9
AID	20	5	25.0
AIH	19	7	26.8
Antibiotics	14	2	14.3
Male Surgery	9	4	44.4
Total	147	29	19.7

## DISCUSSION

With a rapid investigation scheme as outlined in this paper, the contributory factor of infertility would be known in about 3 months.

The use of laparoscopy in the investigation of infertility has significantly contributed to the telescoping of the time required to investigate the female. Prior to its use, patients had to wait for 6-9 months for a hysterosalpingogram and laprotomy was performed only as a last resort. One interesting finding that emerged from this study is that asymptomatic endometriosis was found in many infertile women. The incidence of 14.7% in this study is probably an underestimate as laparoscopy was only available to us since 1972 and it had been carried out only in 421 patients. How and whether the small endometriotic lesion contribute to infertility is not well understood but early recognition and treatment may help to improve fertility.

The low pregnancy rate with human pituitary gonadotrophin (HPG) in this study is largely due to the very stringent selection of patients and the extreme caution created in not overstimulating the ovaries. Very limited supplies of HPG were available and therefore only patients who had failed to respond to high doses of clomiphene and HCG treatment were given HPG.

In patients with blocked tubes, tubal surgery offers very little hope as shown in our result. Until

we know more about tubal function, the result of tuboplasty is unlikely to improve.

As many basic data regarding male fertility are still lacking, treatment of infertile husband is empirical and not satisfactory. The overall pregnancy rate of 20% in our patient is poor and treatment with hormones appears to give the poorest result.

Highest pregnancy rate (47.8%) was seen in the so-called "normal infertile patient". Recently Joyce *et al* (1974) treated this group of patients with clomiphene on the ground that serial hormone analyses revealed defective ovulation. They showed that over 50% became pregnant following clomiphene therapy. Nevertheless, further research is needed to identify the cause of this condition before rational treatment can be instituted.

## ACKNOWLEDGEMENT

We wish to thank Doctors C. Lim, Ilancheran, Y. C. Wong, W. Wun, R.N.V. Prasad and T. Chan for their assistance and Doctor James Lee of the Department of Social Medicine and Public Health for compilation of data.

## REFERENCES

1. Joyce D., Peirce B. and Newton J. R.: Hormone levels in infertile women. *J. Obstetrics and Gynaecology, British Commonwealth*, 81, 568, 1974.