

Infertility factors at the Groote Schuur Hospital Fertility Clinic

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Summary

Nine hundred and four patients who visited the Fertility Clinic at Groote Schuur Hospital during 1986 were classified according to infertility factors. In 36% of all couples a male factor was present, while 57% had a tubal, 29% an ovulatory, 7% a cervical immunological and 6% a uterine factor. Four per cent of all patients had endometriosis, and 2,4% had unexplained infertility. In 57% of cases only one factor was present, but in the rest between 2 and 5 factors contributed to the infertility of the couple.

The study showed that in our population the most common infertility factors are in the male and in women with tubal problems, and resources should be channelled accordingly.

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Infertility is a common problem in all population groups, and for those who are affected it can become a major tragedy and can lead to significant psychological and physical disturbances. It is therefore justifiable to treat patients for infertility as long as they are well selected and counselled, even if resources are limited.

It is important to know about the prevalence of the various factors causing infertility in order to plan and structure a clinic most efficiently. We assessed all patients attending a fertility clinic during 1986 and classified them according to infertility factors.

Patients and methods

The selection criteria at the Fertility Clinic at Groote Schuur Hospital exclude patients who are unmarried, cases in which the couple combined have had more than one child in the past, and cases in which the social background is unstable.

During 1986 904 patients were admitted to the clinic and investigated. After routine history-taking and examination, the husband was referred for semen analysis and the wife underwent hysterosalpingography and had her day 21 serum progesterone value measured. If hysterosalpingography revealed any abnormality, laparoscopy and if indicated hysteroscopy was performed. During the first 2 months of treatment a post-coital test was also done. For the purpose of the study a male factor was considered to be present if the patient's husband had never had normal findings on semen analysis during his stay at the clinic (normal — count > 20 million/ml, motility > 50%, 50% normal morphology). A woman was classified as anovulatory if on two consecutive cycles in the secretory phase the serum progesterone value stayed below 20 nm/l. A tubal

factor was diagnosed if laparoscopy revealed any tubal abnormality. Endometriosis is self-explanatory. A cervical immunological factor was diagnosed when repeated post-coital tests taken at the correct time showed non-motile sperm and/or a sperm-cervical mucus contact test supported the diagnosis, and also when the mixed agglutination reaction in a serum specimen was positive. A uterine factor was diagnosed when hysterosalpingography revealed a constant filling defect and this was confirmed by hysteroscopy. These definitions seem simplified, but they were adequate for the purposes of the study.

Results

The mean age of women seen at the clinic was 29,13 years. The 225 patients on the *in vitro* fertilisation (IVF) programme were fractionally older (mean age 31,05 years), while the mean age of the patients in the general fertility clinic was 28,08 years. Mean parity before admission to the clinic for the patients as a whole was 0,33 and mean gravidity 0,57. The lowest mean parity was that for the patients in the IVF clinic (0,2), reflecting the strict criteria for admission to this specific programme. The distribution of infertility factors is set out in Table I.

TABLE I. DISTRIBUTION OF INFERTILITY FACTORS

Factor	%
Male	36
Ovulatory	29
Tubal	57
Endometriosis	4
Cervical immunological	7
Uterine	6
Unexplained infertility	2,4

In nearly 50% of cases more than one factor contributed to the infertility problem, the distribution being as follows: 57% of couples had 1 factor, 34% 2 factors, 5,5% 3 factors, 0,8% 4 factors, and 0,2% 5 factors. The distribution of factors according to population group is set out in Table II.

The mean number of factors in the black group was 1,22 per couple, that in the white group 1,43 and that in the coloured group 1,42.

Discussion

Infertility is defined as failure to conceive after 1 year of regular unprotected intercourse. In Western countries 5 - 14% of women of child-bearing age are infertile.¹ Some authors even state that the incidence of infertility is rising in younger women.² Spira³ stated in 1986 that 7% of all newly formed couples per year will undergo complex treatment for infertility. Figures for South Africa are not available and in this study it

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TABLE II. DISTRIBUTION OF FACTORS ACCORDING TO POPULATION GROUP (%)

	Unexplained	Male	Ovulatory	Tubal	Endometriosis	Cervical	Uterine
Black	1	30	17	59	2	5	9
White	4,5	50	28	45	7	10	2
Coloured	2	36	31	58	4	7	6

was attempted to survey the prevalence of the different factors leading to infertility.

The most remarkable finding was that the prevalence of male factors causing infertility was consistently high in all population groups, ranging from 30% in the black group to a dramatic 50% among white patients. This may partly be explained by the fact that most of the patients were referred by private practitioners whose treatment had been unsuccessful. These figures are higher than those reported in previous publications — in 1985 Omoriah *et al.*⁴ reported a 25,8% prevalence of male problems in a group of 500 patients, while in 1981 Chowdhury *et al.*⁵ reported a prevalence of 28,9% in a group of 325 patients. Satisfactory treatment options are available for most female factors, but for male factors options are limited and success rates are very low indeed. The figures highlight the urgent need to channel more of the limited resources available for infertility treatment into investigation of and research into male infertility, an area which has been grossly neglected in the past. They also show the absolute need for semen analysis as a primary investigation of any infertile couple before any time or money is spent on treating the female partner.

All other factors seem to be fairly equally distributed among the population groups. The prevalence of tubal factors was high. Black and coloured women were more likely to suffer from tubal infertility than their white counterparts, as was also found in a world-wide survey undertaken in 1985 by Cates *et al.*⁶ Endometriosis, however, was very rare in the black population (2%), the prevalence among whites being approximately 3 times higher (7%).

Unexplained infertility was very rare in our patients (2,4%). Other studies⁷ report much higher prevalences, up to 24%. Unfortunately these workers did not define infertility, and a high percentage of their patients might not have been trying to conceive for more than a year.

In conclusion, this study showed that the distribution of infertility factors among our patients is similar to distributions reported by workers elsewhere in the world, with the exception of unexplained infertility, the prevalence of which is negligible, and male factors, which seem to be more common in our patients.

An epidemiological study of the incidence of infertility in South Africa is needed.

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