Original Article

A Survey on Infertility in Royan Institute

Mohammad Kamali, Ph.D.[1*], Ahmad Reza Baghestani, M.Sc.[1], Fahimeh Kashfi, M.Sc.[1]
Hossein Kashani, M.Sc.[1], Shahram Tavajohi, M.D.[1], Elham Amirchaghmaghi, M.D.[2]

1. Epidemiology Department, Royan Institute
2. Endocrinology and Female Infertility Department, Royan Institute

Abstract

Background: Infertility is defined as failure in pregnancy after one year of unprotected intercourse. Several centers have reported different causes of infertility. The most common causes of infertility are: male factor such as sperm disturbance, female factor such as ovulation dysfunction and tubal factor, both male and female factor, and unexplained infertility .The aim of this study was to survey the epidemiology of infertility in Royan institute.

Material and Methods: In this descriptive retrospective study, 2492 infertile couples were studied. These couples were selected by systematic sampling among couples referred to Royan institute between 1995 and 2001.All existing demographic data and diagnostic methods were recorded in questionnaires .Results were analyzed using SPSS version 11.5.

Results: In this study, the frequency of primary and secondary infertility was 90.1% and 9.9%, respectively. Among 2492 couples, 50.5% had male factor, 28.6% had female factor, 11.6% had both male and female factors and in 9.3% of couples, the cause of infertility was unknown .Results showed that 32.3% of men had normal spermogram, 23.6% of couples had azoospermia, and 40.3% had sperm disturbance including oligospermia, asthenospermia, oligoasthenospermia and teratospermia .3.8% were not able to collect sample for semen analysis. Among women, different infertility factors included: ovarian factor (20.36%), tubal factor (12.64%), uterine factor (4.13%), endometriosis (1.28%) and recurrent abortion (0.68%). 50.48% of women were normal.

Conclusion: Although male factor was the most common cause of infertility in Royan institute, we can not conclude that this factor is the most common cause of infertility in Iran since this center is considered referral especially for male infertility. We suggest performance of similar researches in other centers to evaluate the most common causes of infertility in Iran.

***Key words*:** Infertility, Epidemiology, Male Factor

Introduction

Infertility is defined as failure in pregnancy after one year of unprotected intercourse (1, 2). It is estimated that 20-25% of normal couple are fertile and according to this estimation, 90% of couples are expected to have a child after one year of marriage (3).

Ten to fifteen percent of couples have difficulty conceiving, or having the number of children they want and therefore seek fertility specialist care at least once during their reproductive lifetime (4). Several centers have reported different causes of infertility (2, 5, 6).

Some causes are more common in some countries such as infection and sexual transmitted disease (STD) in Africa (7).

Some environmental factors are considered as influencing factors, such as alcohol use (8) and smoking (9).

According to literature, the most common causes of infertility are: male factor (2, 5, 6, 10, 11, 12) such as sperm disturbance (5, 11, 12), female factor (2, 5, 6, 10, 11, 13) such as ovulation dysfunction (2, 6, 13) and tubal factor (2, 5, 6, 13) ,both male and female factor (2, 5, 10, 11) and unexplained infertility (2, 5, 6). Various causes of infertility have been reported by other researchers. Therefore we decided to survey the epidemiology of infertility in Royan institute, which is considered referral center of infertility in Iran.

Received: 13 July 2006, Accepted: 18 January 2007
***Corresponding Address: P.O.Box: 19395-4644, Epidemiology Department, Royan Institute, Tehran, Iran**
Email: info@royaninstitute.org

Royan Institute
Iranian Journal of Fertility and Sterility
Vol 1, No 1, Spring 2007, Pages: 23-26

Material and Methods

In this descriptive retrospective study, 2492 infertile couples were studied. These couples were selected by systematic sampling among couples referred to Royan institute between 1995 and 2001.

For systematic sampling, infertile couples whose file number terminated with 6 were chosen.

Inclusion criteria were existence of all required data in selected files.

All demographic data and diagnostic methods were recorded in questionnaires. Results were analyzed using SPSS version 11.5.

Results

In this study, 2492 infertile couples were studied. The mean age of women and men in studied couples was 28.2±5.8 and 33.6±6.3 years old, respectively. The most common age group was 19-25 years old among women (31.8%) and 30-34 years old among men (35.1%).

The mean duration of infertility was 7.4±5.2 years. Duration of infertility was less than 5 years in 36.9% of couples. History of infertility in first degree relatives was positive in 8.9% of women and 10% of men.

Table 1: Frequency of causes of infertility in studied couples

Cause of infertility	Number	Percent
Male factor	1258	50.5
Female factor	713	28.6
Both male and female factor	289	11.6
Unexplained	232	9.3
Total	2492	100

The frequency of primary and secondary infertility was 90.1% and 9.9%, respectively.

Among 2492 couples, 50.5% had male factor, 28.6% had female factor, 11.6% had both male and female factors and in 9.3% of couples, the cause of infertility was unknown which was classified as unexplained infertility (Table 1).

Results showed that 32.3% of men had normal spermogram, 23.6% of couples had azospermia, 40.3% had sperm disturbance such as oligospermia, asthenospermia, oligoasthenospermia and teratospermia. 3.8% were not able to collect sample for semen analysis (Table 2).

History of varicocele was found in 21% of men.

Among women, different infertility factors included: ovarian factor (20.36%), tubal factor (12.64%), uterine factor (4.13%), endometriosis (1.28%), and recurrent abortion (0.68%).

50.48% of women were normal. 81% of women with tubal factor had history of tuberculosis.

Table 2: Frequency of different sperm disturbance among studied males

Spermogram	Number	Percent
Normal	805	32.3
Unable to collect	95	3.8
Azospermia	588	23.6
Oligospermia	93	3.7
Asthenospermia	211	8.5
Teratospermia	37	1.5
Oligoasthenospcrmia	208	8.3
Asthenoteratospermia	234	9.4
Oligoteratospcrmia	9	0.4
Oligoasthenoteratospermia	212	8.5
Total	2492	100

Discussion

In this study, 2492 couples were studied and results showed that the frequency of primary infertility was 90.1% and the most common causes of infertility were male factor in 50.5% of couples, female factor in 28.6%, both male and female factors in 11.6% and unexplained causes in 9.3% of couples.

Male factor was the most common cause of infertility and women causes of infertility were as follows according to their frequency: Ovarian factor, tubal factor, uterine factor,

endometriosis, age factor and recurrent abortion.

Frequency of secondary infertility was 9.9% in this study while secondary infertility was found in 35% of couples in Ikechebelu's study in Nigeria (5), 62% in Esimai's study (12) and 22.8%in Razzak's study in Iraq (6).

These differences can be due to age group, socioeconomic and hygiene status which varies among these populations. For example secondary infertility is more common in Africa (14) because prevalence of sexual transmitted disease and its complication such as tubal adhesion are high in Africa (5, 7) Furthermore in our study, infertility was most prevalent among 19-24 years but in Ikechebelu 's study , 67.2% of women were aged between 25 and 34 years (5).

The most common cause of infertility in our study was male factor (50.5%) which was similar to Ikechebelu 's study (42.4%) while the frequency of male factor was 26.8% in Olatunji's study (10), 21% in Chigumadzi's (13) and 36.8% in Razzak's study (6).

In our study, sperm disturbance (40.3%) such as oligospermia, asthenospermia, oligoasthenospermia and teratospermia were the most common etiologic factors responsible for male infertility which is in accordance with Ikechebelu's study (68.2%) (5) while 27.7% in Esimai's study (12) had oligozoospermia.

The most common cause of female infertility in this study was ovarian factor (20.36%) while in Ikechebelu's study (5) and Chigumadzi's study (13), tubal occlusion was the most common cause. Tubal occlusion is more prevalent in African countries because frequency of poorly treated STD is high (5, 7) But in our study, tubal occlusion was mainly secondary to tuberculosis which is an endemic disease in Iran.

Although male infertility is the most common cause of infertility in Royan institute, we can not conclude that male infertility is the most common cause of infertility in Iran because Royan institute is a referral center especially for male infertility.

We suggest performance of similar researches in other centers to evaluate the most common causes of infertility in Iran.

Acknowledgments

We would like to thank Dr Shahverdi, Miss Mirza Agha and other staff of Royan Institute for their collaboration.

References

1. Geelhoed DW, Nayembil D, Asare K, Schagen van Leeuwen JH, van Roosmalen J. Infertility in rural Ghana. Int J Gynaecol Obstet. 2002 Nov; 79(2): 137-142

2. Poppe K, VelkeniersB .Thyroid and infertility. Verh K Acad Geneeskd Belg.2002; 64(6):389-399

3. Cramer DW, Walker AM, Schiffl. Statistical methods in evaluating the outcome of infertility therapy. Fertil Steril. 1979 Jul; 32(1): 80-86

4. Evers JL.Female subfertility. Lancet 2002; 360 (9327): 151-159

5. Ikechebula Ji, Adinma JI, Orie EF.Ikegwuonu SO .High prevalence of male infertility in southeastern Nigeria. J Obs Gyneco. 2003; 23(6): 657-659

6. Razzak AH, Wais SA. The infertile couple: A cohort study in Duhok, Iraq. Est Mediterr Health J. 2002; 8(2-3): 234-238

7. Araoye MO. Epidemiology of infertility: social problems of the infertile couples. West Afr J Med .2003; 22(2): 109-106

8. Tolstrup IS, Kjaer SK, Hoist C, SharifH, Munk C, osier M .Alcohol use as predictor for infertility in a representative population of Danish women. Acta Obstet gynecol Scand, 2003; 82(8): 744-749

9. Saleh RA, Agarwal A, Sharma RK, Nelson DR, Thomas AJ Jr. Effect of cigarette smoking on levels of seminal oxidative stress in infertile men: a prospective study. Fertil Steril. 2002 Sep; 78(3): 491-499

10. Olatunji AO, Sule-odu AO. The pattern of infertility cases at a university hospital. West Afr J Med. 2003; 22(3): 205-207

11. Bayasgalan G, Naranbat D, Tsedmaa B, Sukhee d, Lhagvasuren T, Amarjargal 0 et al. Clinical patterns and major causes of infertility in Mongolia. J Obstet Gynaecol Res .2004; 30(5): 386-393

12. Esimai OA, Orji EO, Lasisi AR. Male contribution to infertility in Ile-Ife , Nigeria. Niger.) Med 2002; 11(2): 70-2

13. Chigumadzi PT, Moodley J, Bagratee J. Infertility profile at King Edward VIII Hospital, Durban, South Africa. Trop Doct 1998; 28(3): 168-172
14. Gerais AS, Rushwan H. Infertility in Africa. Popul Sci.1992; 12: 25-46