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SUBFERTILITY;
AETIOLOGICAL FACTORS

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ABSTRACT... Objectives: To determine the frequency of different aetiological factors responsible for subfertility. **Study Design:** Cross sectional descriptive case series. **Setting:** Baqai institute of reproduction and developmental sciences (BIRDS). **Period:** January 2013-December 2013. **Methods:** All the couples presented with subfertility and had undergone the required investigations were included in this study. **Results:** Among 982 couples majority 730(74.33%) had primary and 252(25.66%) had secondary subfertility. Female factors were responsible in 44.60%, male in 34.31%, combined in 19.85% and unexplained in 1.22%. The most frequent cause of female subfertility was anovulation found in 50.39% followed by tubal blockage in 47.39%. Among male factors39.84% had asthenospermia while 19.92% had oligospermia, 12.96% had obstructive azospermia. **Conclusion:** Significant number of females with primary subfertility had anovulation while majority with secondary subfertility had tubal blockage. Male factors were also predominent cause of subfertility. In most of the couples ARTs are the only means to achieve a child.

Key words: Subfertility, Tubal Blockage, Anovulation.

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INTRODUCTION

Subfertility is best defined as the inability to conceive after one year of unprotected regular intercourse.[1] Between 8-12% of couples around the world have difficulty in conceiving a child at some point in their lives thus affecting 50-80 million people.[2] As a result of increased public awareness about subfertility and its treatment options, more and more couples are expected to seek treatment for the condition.[3]

The World Health Organization defines health as "a state of complete physical, mental and social well being, and not merely the absence of disease or infirmity in all matters relating to the reproductive system and its function and processes. By this definition, infertility is a major cause of diminished health in developing countries.[4]

Subfertility may be primary, means couple has never conceived or secondary, where at least one conception has occurred for one or both the partners. Previous studies in Pakistan suggest a high incidence of primary (55-65%) subfertility than that of secondary subfertility (35-45%).[5]

During the past two to three decades there have been three important changes in infertility practice. First, the introduction of assisted reproduction technologies has provided an opportunity to study basic reproductive processes. Second, social changes have occurred such as the increase in the proportion of women over 35 years old seeking pregnancy. Third, the development of molecular biology and genetics has become very important for the study, diagnosis and assessment of couples, many of them considered until now as "unexplained infertile couples".[6]

The present research is focused to find out the frequency of different aetiological factors among subfertile couples after complete investigation.

MATERIAL AND METHODS

This cross sectional descriptive study was conducted at Baqai institute of reproduction and developmental sciences (BIRDS) from January 2013- December 2013.The data was collected on especially designed performa and analysed in the form of frequency and percentage by using

SPSS version 10.

Couples who had lived together for at least 12 months and had undergone the required investigations were included in the study.

Couples who had not lived together for at least 12 months and the couples who presented with infertility but had not undergone the required investigations were excluded from study.

Semen analysis is the counter stone for the assessment of the male partner in a subfertile couple. Semen analysis has been standardized throughout the world. This was made possible through the effort of WHO since 1970's by producing, editing, updating and disseminating a semen analysis manual.[7,8]

Male factors were investigated by semen analysis, which was done after 3 days of abstinence. Diagnosis of abnormal semen parameters was made according to WHO criteria. FSH, LH & Testosterone were done with azospermia to differentiate between obstructive azospermia and testicular failure.

Female ovulatory function was investigated by hormonal profiles (Serum TSH, FSH, LH, Prolactin, Progesterone and Testosterone). HSG was the primary method of investigation for tubal patency. Laparoscopy was performed when patients had doubtful or inconclusive HSG results and in presence of symptoms of pelvic pain, dysmenorrhea and dyspareunia.

RESULT

A total number of 982 couples were included in study who visited BIRDS during January 2013 to December 2013. During this study period 730 (74.33%) couples presented with primary subfertility while 25.66% came with secondary subfertility.

This study found that female causes accounted for 44.60% of subfertility, male cause accounted for 34.31%, combined causes accounted for 19.85% and in 1.22% subfertility was unexplained.

The commonest aetiological factor among female including both combined causes and only female factor subfertility was anovulation found in 319(50.39%). Tubal factor subfertility was found in 300(47.39%). Premature menopause found in 6 cases. Congenital abnormalities of genital tract (bicornuate uterus or vaginal septum) was found in 3(0.47%) cases. Turner syndrome found in 2 cases and kallmann's syndrome in one female.

Primary	730	74.33%
Secondary	252	25.66%

Table-I. Type of subfertility (n=982)

Female	438	44.60%
Male	337	34.31%
Combined	195	19.85%
Unexplained	12	1.22%

Table-II. Sex distribution (n=982)

Anovulation	319	50.39%
Tubal Factor	300	47.39%
Menopause	6	0.94%
Congenital Structural Anomalies	3	0.47%
Submucous Fibroids	2	0.31%
Turner's Syndrome	2	0.31%
Kalmann's Syndrome	1	0.15%

Table-III. Female aetiological factors (n=633)

Asthenospermia	212	39.84%
Oligospermia	106	19.92%
Obstructive Azospermia	69	12.96%
Teratospermia	56	10.52%
Oligoteratospermia	40	7.51%
Asthenoteratospermia	19	3.57%
Pyospermia	15	2.81%
Erectile Dysfunction	13	2.44%
Testicular Failure	2	0.37%

Table-IV. Male aetiological factors (n=532)

DISCUSSION

Our study had shown a higher incidence of of primary subfertility that is 74.33% than secondary subfertility (25.66%).Another local study had shown primary subfertility 73.31% & secondary 26.82%.[9] A study conducted at Milatary hospital Rawalpindi found primary subfertility79.6% & secondary subfertility 20.4%.[10] Most subfertile

couples around the world suffer from primary subfertility.

In our study male factors were responsible for 34.31% while female factors were 44.60%.In other study male causes responsible for 45.13%.[9] Khan HL, et al found male factor responsible for 35.5% female factor for 40.1%[11] which are very similar to our study.

The most frequent cause of female subfertility was anovulation found in 50.39%. Hormonal analysis in subfertile females is one of the basic test.[12,13] In other study anovulation found in 43.35%.[9] while A.Ghazi found anovulation in 27%.[14]

Johnson has quoted that male factors contribute 30%, ovarian factors 25% and tubal factors 25% cases of subfertitlity in her study, while in 20% cases there was no explanation.[15] Hysterosalphingography is an important diagnostic tool where laparoscopy is not available.[16,17] In our study tubal blockage found in 47.39%. A.Ghazi found tubal blockage in 32.6%.[14] Khan HL found tubal blockage in 39.85%.[11] Aziz. N found tubal blockage in 21.9% and PCO in15.6%.[18] Sultana N found unilateral or bilateral tubal blockage in 20% of subfertile women.[19] The prevalence has increased in last decade or so in large part because of an increase in sexually transmitted diseases resulting in pelvic inflamatory diseases.[20] Tubal causes accounts for 35% to 40% cases of infertility.[21]

Semen analysis is a basic investigation among the male partners as mentioned by all workers.[22] Khan HL, et al found 74.4% oligospermia/ asthenospermia and 25.6% azospermia.[11] AGhazi in her study found 40 (26%) males had abnormal readings like oligospermia, oligoasthenospermia and azoospermia.[14] In this study the most frequent finding was asthenospermia found in 39.84% followed by oligospermia found in 19.92%. Teratospermia was found in 10.52%. Obstructive azospermia was found in 12.96% of male partners in our study these values were similar to those of the world literature.[23]

CONCLUSION

Investigating subfertility is a lengthy process and requires examination, personal inquiry and invasive tests. At many instances it is preventable by reducing sexually transmitted diseases, postpartum and post abortion complications. In most of the couples ARTs are the only means to achieve a child.

REFERENCES

1. Taylor A. **ABC of Infertility! Making a diagnosis.** Br Med J 2003; 327: 494-7.
2. Sciarra,J. **Infertility: an International Health problem International Journal of Gynaecology and Obstetrics**1994;46: 155
3. Pal L, Santoro N. **Age related decline in Infertility.** Endocrinol Metab Clin N Am 2003; 32: 669-88.
4. Abdullah S, Daar, Meral Z. Infertility and social suffers. **The case of ART in developing countries, section of infertility and assisted reproductive technologies in the developing world infertility** www.who.org.
5. Usman AT. **Laparoscopic evaluation of female Infertility.** Pak Armed Forces Med J 1995; 45: 63-5.
6. Brugo-Olmedo S, Chillik C, Kopel S. **Definitions and causes of infertility.** Reprod Biomed Online.2001; 2(1):41.
7. Christina Wang MD, Ronald S. Swerdioff MD. **Limitations of semen analysis as a test of fertility and anticipated needs from newer tests.** Fertil steril 2014; 102(6):1502-07.
8. WHO. **World health organization laboratory manual for the examination and processing of human semen,** 5th ed. Geneva, Switzerland: WHO; 2010.
9. Rahim R, Majid SS. **Aetiological factors of infertility.** J postgrad Med Inst 2004;18(2):166-71
10. Yasir N, Parveen S, Tariq H, Fatima A. **Laparoscopic findings of female infertility- a study of 186 cases at a tertiary care hospital.** Pak Armed Forces Med J 2014; 64(2): 304-7
11. Khan HL,Khan YL, Mahmood N, Mustansar M, Sardar S, Khawaja AR. **Causes of male and female subfertility in couples who underwent In Vitro Fertilization at LIFE clinic; A statistical study.** J Bahria Uni Med Dental Coll 2016;6(1):47
12. Yacoub K. **ABC of Subfertility.** Br Med J 2003; 327:610.

13. Silverberg KM. **Evaluation of the couple with Infertility in a managed care environment.** Clin Obstet Gynecol 2000; 43: 844-53.

14. Ghazi A, et al. **Subfertility: Experience in a tertiary care hospital.** Pak J Surg 2007; 23(4): 283-6.

15. Johnson J. Infertility. **In: Patrick Sutter & DanForth's Textbook of Obstetrics & Gynecology, 9th ed.** Edinburgh: Churchill Livingstone; 2003. P.685-695.

16. Ramazan R, Parveen S, Jehan S. **Hysterosalpingographic findings among infertile women.** Isra Med J 2015; 7(4): 216-9.

17. Barnhart K, Bunsmoor JUR, Coutifaris C. **Effect of endometriosis on in vitro fertilization.** Fertil Steril 2002; 77: 1148-55.

18. Aziz N. **Laparoscopic evaluation of female factors in infertility.** J Coll Physicians Surg Pak 2010; 20(10): 649-52.

19. Sultana N, Huma Z, Shoaib M. **Eitiology of female infertility in age group 20-35 years- A study based on laparoscopic findings.** Pak J Med Health Sci2012; 6(3):623-5.

20. Haque S. **Role of Hysterosalpingography for evaluation of infertility.** Bang Med J 2010; 39(1): 16-23.

21. Streda R, Mardesic T, Kault D, Lazarovska S, Solomovaj Vaboni J. **The diagnostic value of Hysterosalpingography, diagnosis of tubal disease.** Ceska Gynaecol 2009; 74(1): 18-21

22. James DM, Nicopoullos S. **Assessment and management of azoospermia in the infertile couple.** In: Progress in Obstetrics and Gynaecology (Vol.16). Edinburgh: Churchill Livingstone; 2005. p.241-258

23. Dunson DB, Baird DD, Colombo B. **Increased Infertility with age in men and women.** J Obstet Gynecol 2004; 103: 51-3.

"Feelings are just visitors, let them come and go."

Mooji

AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Dr. Rana Hussain	Data collection, analysis & interpretation.	
2	Dr. Farzana Nasir	Compiled data.	
3	Dr. Nazia Hashim	Conception & design.	
4	Dr. Sonia Naqvi	Supervised the study	