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PREVALANCE OF MALE INFERTILITY- A STUDY DONE BY SEMINAL FLUID ANALYSIS AT A TERTIARY CARE CENTRE IN JHARKHAND

Pathology

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ABSTRACT

Prevalence of overall infertility ranges from 3.9% - 16.5%. Male infertility accounts for 40 – 45% with around 7% men having suboptimal sperm parameters1. It may be due to low sperm count, poor motility, abnormal morphology or a combination of these. This retrospective study was done to observe male factor infertility and compare it with different geographical regions in our country as well as throughout the world.

The present study was conducted for two years starting from January 2017 to December 2019 on couples attending OPD of Rajendra Institute of Medical Sciences, Ranchi who presented with complaints of inability to achieve clinical pregnancy. Both the couples were investigated and samples of seminal fluid were collected from the husband and examined in Department of Pathology, RIMS, Ranchi.

A total of 244 study subjects were investigated for seminal fluid evaluation. Out of them 68 were found to have some or the other abnormalities.

Out of 68 cases, majority (37 cases i.e. 54.4%) were Oligospermic .

KEYWORDS

INTRODUCTION

India, the second most populous country just after China, with a population of 1.3 billion will soon out strip China by the year 2022 according to recent United Nation predictions. Due to such an increase in population, there has been a continuous decrease in agricultural production as well as fall in per capita income. On the other hand, a significatant population are suffering from an unexpected infertility problem throughout the world. In United Kingdom and USA, it is about 6% and 10 % respectively. Denmark is estimated to have 15.7 % infertility rates. In Nigeria and sub-saharan Africa, the infertility rates could exceed 30% also[2]. An average of 10 – 14 % of Indian population are suffering from an infertility problem, where the social traditions and cultural beliefs make it almost mandatory for every couple to have children. Another important aspect of this problem is that, usually the female is blamed for inability to have a child, and male sterility is often ignored. However there are some major causes and risk factors of male infertility Infertility is defined as failure to achieve clinical pregnancy after 12 months or more of regular unprotected sexual intercourse. Infertility can be categorized as primary infertility and secondary infertility. Primary infertility is said when the male has never impregnated a woman while in secondary infertility the man has impregnated a woman some time before in the past but is unable to do so now. Male infertility can be complete or subfertile. Complete infertility can be due to absence of semen(aspermia) of absence of sperm(azoospermia). Partial fertility of subfertility can be due to oligosoermia (low sperm count), asthenozoospermia (reduced sperm mortility), necrozoospermia (reduced sperm vitality), teratozoospermia (abnormal sperm morphology) or a combination of one or more of these.

Seminal fluid examination is the first step in identifying the underlying cause of male infertility. World Health Organisation has revised the lower limits for the parameters[3] –

- Volume: 1.5 mL (95% CI: 1.4–1.7)
- Sperm concentration: 15 million spermatozoa/mL (95% CI: 12–16)
- Total sperm number: 39 million spermatozoa per ejaculate (95% CI: 33–46)
- Morphology: 4% normal forms (95% CI: 3–4), using “strict” Tygerberg method
- Vitality: 58% live (95% CI: 55–63)
- Progressive motility: 32% (95% CI: 31–34)
- Total (progressive + nonprogressive motility): 40% (95% CI: 38–42).

Aims and objectives

To determine the incidence of male infertility .

To aid in determining the underlying cause or disease affecting fertility.

To compare trends of male infertility in India compared to different geographic regions throughout the world.

MATERIAL AND METHODS

Study Design: Retrospective study

Study Location: Department of Pathology at Rajendra Institute of Medical Sciences, Ranchi

Study Duration: January 2017 to December 2019

Sample size: 68 patients.

OBSERVATION & RESULTS

A total of 244 patients investigated for seminal fluid evaluation. Out of them 68 were found to have some or the other abnormalities –

Table no. 1 – Showing distribution of patients according to various medical conditions.

Medical Condition	Number of patients
Aspermia	05(7.4%)
Azoospermia	14(20.5%)
Oligospermia	27(39.7%)
Asthenozoospermia	15(22.1%)
Oligo-asthenozoospermia	07(10.2%)
Total	68(100%)

Table no. 2 – Showing distribution of patients according to age

Age in yrs	Number of patients
11-20 yrs	01
21-30 yrs	25
31-40 yrs	22
41-50 yrs	20

8 patients of the above mentioned condition also had a low semen volume of less than 1.5 ml which was below the lower limit as defined by WHO parameter.

DISCUSSION

After screening of males by semen analysis provides some insight about the underlying pathological, emotional and psychological problems. In our present study 244 cases were screened but only 68 patients were found to have some male infertility problem. The prevalence of azoospermia in our study population was 20.5% and of oligospermia was 39.5%. According to Samal S et al prevalence of azoospermia was 14.28% and that of oligospermia was 21.43%4. In

many studies the reported azoospermia ranges between 12.32% to 16%(according to Shoaib KM et al and Rikhasor RM et al). According to a study in pakistan the reported prevalence of azoospermia and oligospermia is 14% and 37% respectively[5], which is comparable to our study. Other study reported the prevalence of oligo-asthenozoospermia as 9.09% to 11%[6].

In our study, the prevalence of oligo-asthenozoospermia is 10.2%. Hence the present study revealed the increasing trend of male infertility in last few years except oligo-asthenozoospermia which is constant.

CONCLUSION

Male infertility has a strong impact in the social psychology and physiology of the couple. The present study shows that there has been an average decline in the sperm count over decades. This may be due to several factors including working conditions, climate changes and lifestyle changes[3]

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