



Research Paper

An Evaluation of The Aetiologic Factors for Male Infertility: A Single Institutional Retrospective Study in Aba, South Eastern Nigeria.

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ABSTRACT

Male factor infertility Substantially contribute between 30%-50% of all cases of infertility. In the developing countries such as Nigeria, Patients present late often after so many years after marriage due to the reluctance on the part of male partners to submit for evaluation. The objective of this study was to review the causes of male factor infertility in our centre. The study was a retrospective one spanning 5 years from January 2020 to December 2024. 176 cases were seen within this period. The youngest was 37 years old while the eldest was 63 years old with a mean age of ----- There was a noticeable increase in incidence per year. The highest incidence occurred in the age group 41-50yrs with 83 cases (47.2%), closely followed by the age group 31-40yrs with 74 cases (42.0%). Varicocele was the most common cause with 62 cases (35.2%). The most common semen parameter was Oligoasthenoteratospermia seen in 115 participants (65.3%). Azoospermia was seen in 12 patients (6.8%). 73 patients (41.5%) had primary infertility while 103 patients (58.5%) had secondary infertility. Male factor infertility is common in Aba and varicocele is the leading cause.

KEYWORDS: Male factor infertility, Aetiologic factors, semen parameters and Aba .

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I. INTRODUCTION

Male factor infertility refers to a male's inability to achieve a pregnancy with his partner often due to problems with sperm production, sperm motility and delivery.

It substantially contributes between 30-50% of all cases of infertility.

Common Aetiologic factors are

- Genetic factors.
- Hormonal imbalance.
- Infections especially chronic infections.
- Life style choices.
- Cancer treatments – chemotherapy and radiotherapy.

Chances of male infertility may increase with

- Body mass index more than 25 (overweight/obesity).
- Age 40 yrs or above.

- Exposure to radiation and chemotherapy.
- Exposure to environmental toxins such as Lead and Mercury.
- Use of Tobacco, Alcohol and Marijuana.
- Use of Anabolic Steroids .
- Use of Depo preparations of testosterone to treat low testosterone states.
- History of post Pubertal mumps infection.
- Chronic Liver Disease.
- Presence of varicocele.
- Presence of unilateral or bilateral undescended testes.
- Use of androgen receptor blockers.
- Use of oestrogenic drugs.

Primary Testicular failure is a form of male infertility where no identifiable underlying cause of testicular dysfunction is found.

There is impaired spermatogenesis and impaired testosterone production.

Its feature include.

- Infertility.
- Erectile dysfunction.
- Reduction in libido.
- Loss of muscle mass.
- Gynaecomastia due to oestrogenic dominance.
- Hot flushes.
- Testicular atrophy.
- Mood changes\.
- Reduced facial or body hair.

Secondary testicular failure occurs when the testes are normal in structure and function but lack adequate hormonal stimulation particularly leutenizing hormone (LH) and follicle stimulating hormone (FSH) as a result of problems with hypothalamic-pituitary axis.

Hyperprolactinaemia can cause secondary testicular failure through inhibition and suppression of the hypothalamic-pituitary axis .

Immunologic cause of male infertility are basically due to the presence of Anti sperm Antibodies which are proteins produced by the immune system that target sperm leading to male infertility.

It causes sperms to clump together, reduce sperm motility and maybe present in blood or semen.

Traditionally, the anti sperm antibodies are formed due to a disruption of the blood-testis barrier. Conditions predisposing to this breach include

- Mumps orchitis.
- Testicular Atrophy following Torsion.
- Undescended testis.
- Testicular tumors.

Bilateral testicular Atrophy is characterized by low testosterone levels, relative hyper oestrogenism, loss of libido and impotency.

Common cause include

- Bacterial orchitis.
- External source of testosterone.
- Aging.
- Excessive alcohol.
- Oestrogen usage.
- Cryptorchidism.
- Chronic liver disease due to breach of the blood testis barrier.

Infections both bacterial and viral such as Gonorrhea, chlamydia and mumps can cause infertility by

- Impaired spermatogenesis.
- Epididymal blockage due to scar tissue formation.
- Impaired quality of semen.

II. METHODOLOGY

This was a retrospective study of the cases of male factor infertility seen within the study period of 5yrs between January 2020 to December 2024.

This was done in major urological centre in Aba.

The case files of the patients with male infertility were withdrawn and relevant information withdrawn from them such as

- Date of presentation.
- Age.
- Mode of presentation.
- Results of laboratory evaluation including seminal fluid analysis.
- Reproductive history.
- Results of radiological evaluation and
- Results of clinical evaluation.

These informations were collated, analyzed and interpreted.

Inclusion criteria

All cases of male factor infertility who presented within the study period and had complete clinical, laboratory and radiological evaluations were part of this study.

Exclusion criteria

All cases of male infertility who presented within the study period but had no complete clinical, laboratory and radiological evaluations were not part of this study.

III. RESULTS

TABLE 1 SHOWING DEMOGRAPHIC VARIABLES

S/N	Variable	Outcome
1	Mean age in Years	_____
2	Range in Years	37 – 63 yrs

TABLE 2 – SHOWING INCIDENCE OF MALE INFERTILITY PER YEAR DURING THE STUDY PERIOD

S/N	Year	Number	Percentage
1	2020	25	14.2%
2	2021	32	18.2%
3	2022	37	21.0%
4	2023	40	22.7%
5	2024	42	23.9%
6	Total	176	100%

FIG. 1 BAR CHART

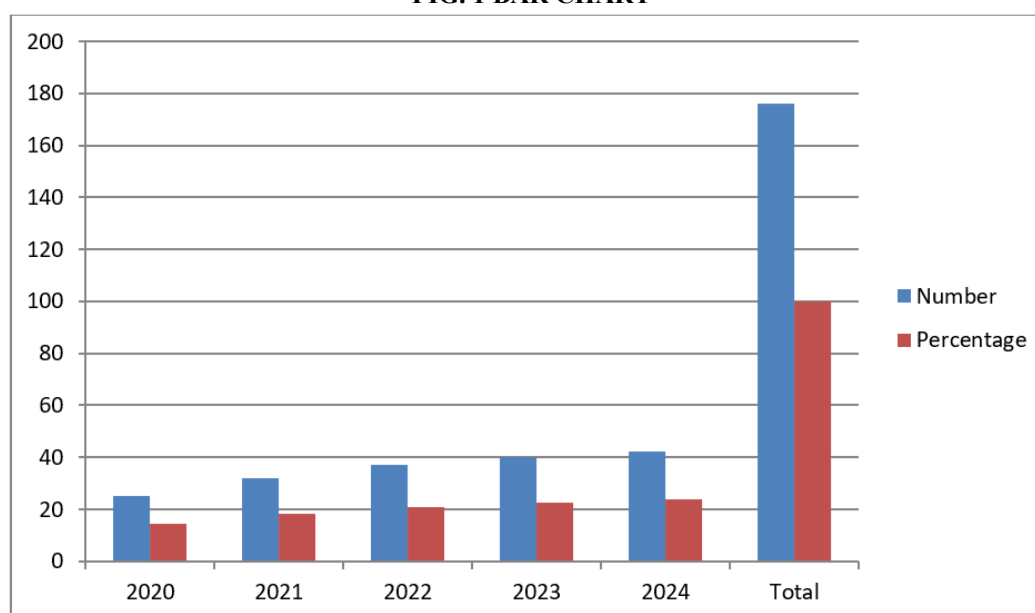


TABLE 3 SHOWING THE AGE DISTRIBUTION OF THE PARTICIPANTS

S/N	Age range in Year	Number	Percentage
1	20 – 30yrs	2	1.1%
2	31 – 40 yrs	74	42.0%
3	41 – 50yrs	83	47.2%
4	51 -60yrs	14	8.0%
5	61 – 70yrs	3	1.75

FIG. 2 BAR CHART

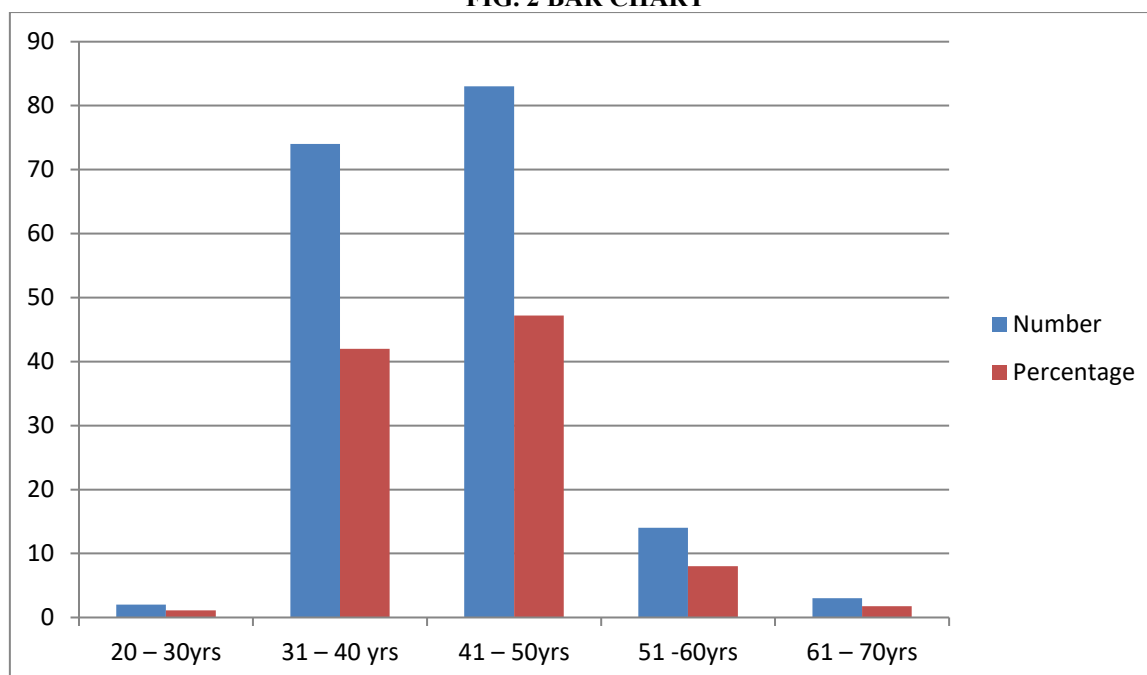


TABLE 4 SHOWING THE AETIOLOGICAL FACTORS OF MALE INFERTILITY SEEN DURING THE STUDY PERIOD

S/N	Aetiological Factors	Number	Percentage
1	Varicocele	62	35.2%
2	Idiopathic testicular Deficiency/failure	37	21.0%
3	Immunological causes	34	19.3%
4	Secondary testicular failure	25	14.2%
5	Chronic infections	10	5.7%
6	Acquired testicular damage	8	4.5%
7	Total	176	100%

FIG. 3 BAR CHART

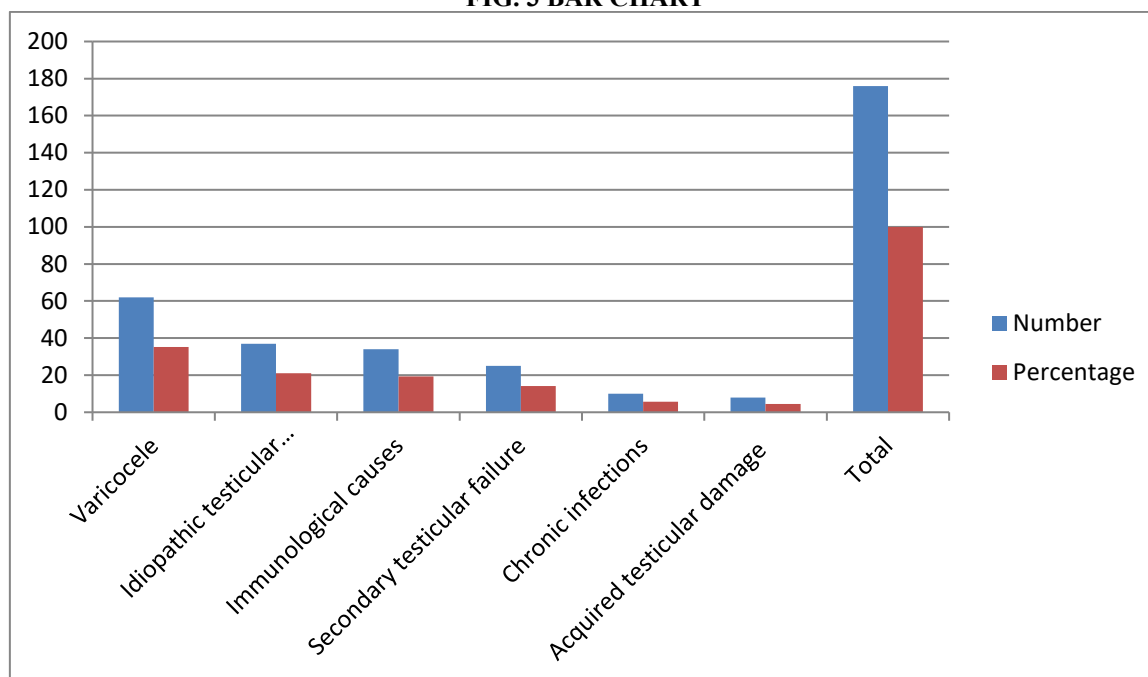


TABLE 5 PATTERNS OF SEMEN PARAMETER SEEN AMONG PARTICIPANTS N = 176

S/N	Semen parameter	Number	Percentage
1	Oligospermia +Asthenospermia + Teratospermia	115	65.3%
2	Oligospermia with Asthenospermia Only	24	13.6%
3	Azoospermia	12	6.8%
4	Oligospermia with Teratospermia Only	10	5.6%
5	Normospermia with asthenospermia and Teratospermia	9	5.1%
6	Normospermia and Teratospermia	3	1.7%
7	Total	176	100%

FIG. 4 BAR CHART

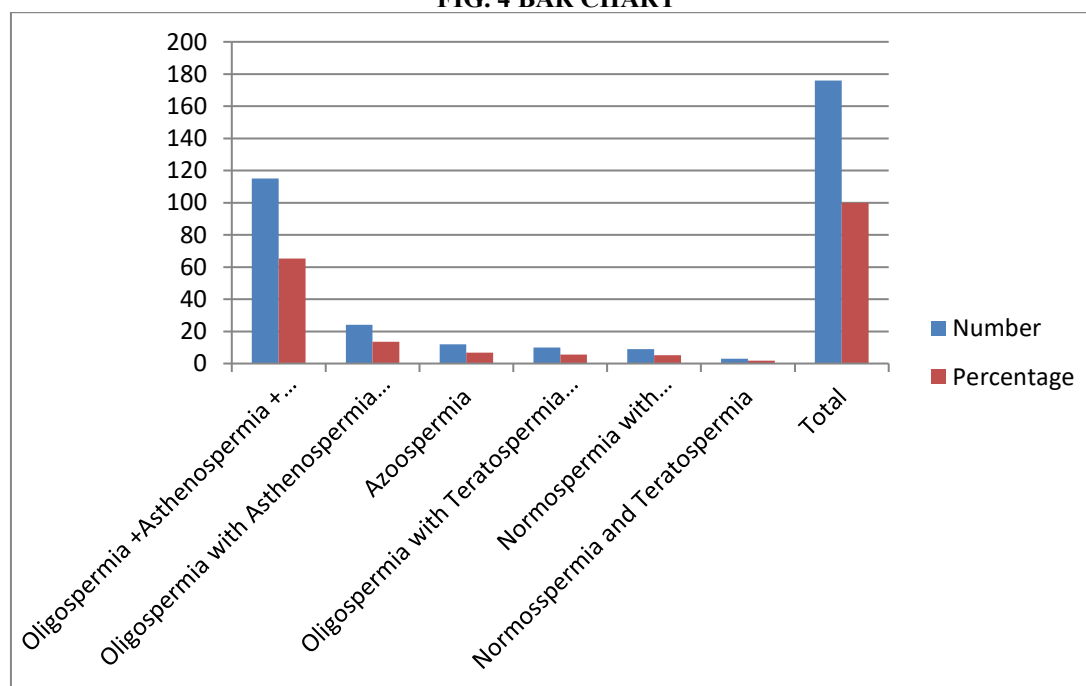
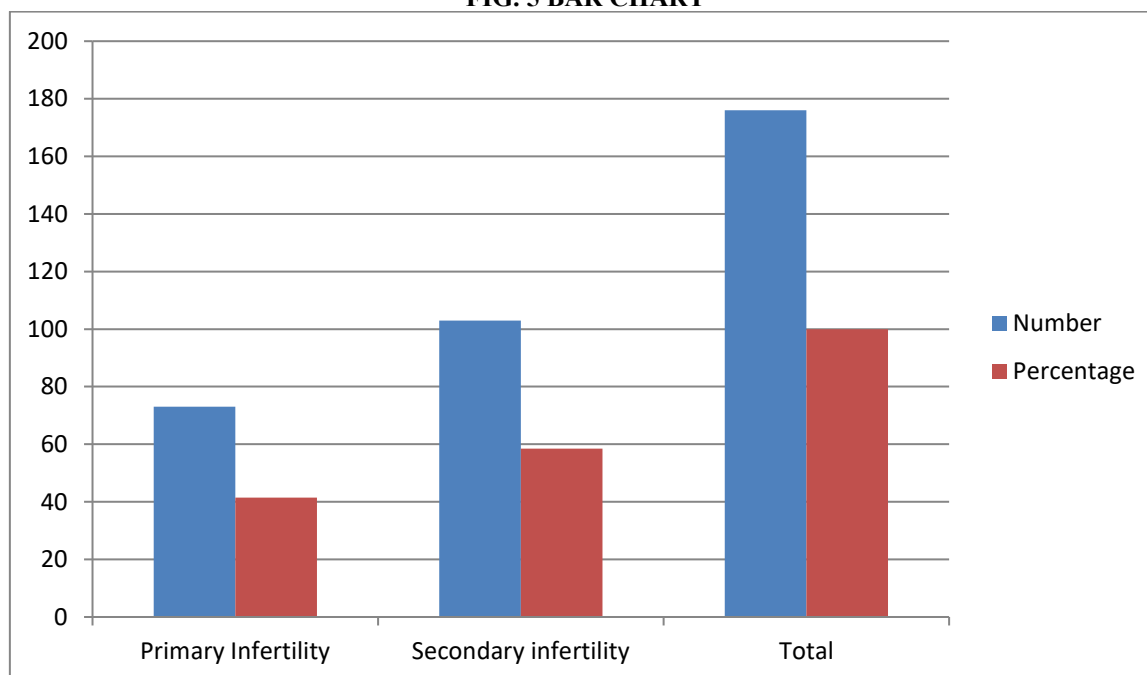


TABLE 6 SHOWING THE TYPE OF INFERTILITY SEEN AMONG THE PARTICIPANTS N = 176

S/N	Type of infertility	Number	Percentage
12	Primary Infertility	73	41.5%
2	Secondary infertility	103	58.5%
3	Total	176	100%

FIG. 5 BAR CHART



IV. DISCUSSION

Male factor infertility is common but unpopular because of the reluctance of the male partners in seeking medical evaluation.

Several etiological factors are associated with its pathogenesis.

In our study, we found an increasing incidence of cases of male infertility.

The highest incidence was in the age group 41-50yrs with 83 cases (47.2%) closely followed by age group 31-40yrs with 74 cases (42%).

Varicocele was the most common cause and was seen in 62 patients (35.2%) followed by idiopathic Testicular insufficiency/failure with 37 cases (21.0%).

Oligoasthenoteratospermia was the most common semen parameter seen in 115 patients (65.5%).

73 cases (41.5%) were due to primary infertility while 103 cases (58.5%) had secondary infertility.

In a work by Osegbe and Amaku- A prospective study in Nigeria on the cases of male infertility using 504 patients, they concluded that the major causes included

- Varicocele.
- Bilateral testicular failure (Idiopathic oligospermia).
- Cryptorchidism.
- Sexual problems.
- Surgical injury.
- Multifactorial.

A work by E.A. Jeje et al on male infertility: An audit of 70 cases in a single centre concluded that, varicocele represents the most common treatable cause of male factor infertility and treatment is accompanied with improved seminal fluid parameters.

A work by Ibioku Elekima et al on evidence based assessment of male only factor infertility: Prevalence and risk factors in Port-Harcourt metropolis, Rivers State, Nigeria, concluded that male only infertility is on the increase and occupations that are accompanied by prolonged sitting , sedentary work style, or working close to high temperature sources as seen in civil servants and welders were observed to be more prone to male only factor infertility.

A work by Gyasi-Sarpong et al on pattern of male infertility in Kumasi Ghana had the following findings.

Majority 58.2% had primary infertility while 41.8% had secondary infertility.
4 (3.6%) had unilateral and bilateral cryptorchidism while 41 (38.7%) of both testes resident in the scrotum had small sized testes.
Varicoceles were present in 24 (22.6%) of men.
38 (34.5%) of the patients had low semen volume.
Azoospermia was seen in 28 (25.3%) with 30 (27.3%) having no motile spermatozoa.
They concluded that male factor infertility in Ghana should receive more recognition and male participation in reproductive health programs should be encouraged.

V. CONCLUSION

The incidence of male infertility is high in Aba but awareness is poor.
Most of the cases presented after many years of the onset of infertility.

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