



Epidemiological and Clinical Profile in an Azoospermic Male-A Tertiary Care Experience

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Abstract

Azoospermia is defined as the complete absence of spermatozoa upon examination of the semen. Azoospermia is present in approximately 1% of all men, and in approximately 10 -20% of infertile men. Male infertility due to azoospermia is on the increase. Semen parameters are on the decline over the years. What contributes whether environmental factors changing life style and psychological stress etc. is not known? Population) suffer from. A detailed history, a physical examination, a hormone profile, imaging and genetic counseling are important to determine the specific clinical classification of the azoospermia. This study was designed to find out the epidemiological and clinical profile of azoospermic males attending our clinic.

Objectives: *To describe the out the epidemiological and clinical profile of azoospermic males attending fertility clinic of Sree Avittom Thirunal Hospital, Trivandrum.*

Materials and Methods: *100 couples with diagnosed case of azoospermia (standard protocols) registered in Fertility Clinic, SAT, Govt Medical College Thiruvananthapuram from the year 2013 was called in for a personnel interview and examination. Written consent was obtained and couples were recruited Interview method using structured closed end questionnaire*

Results: *Out of 100 Azoospermia cases majority of patients had Primary infertility. Majority of cases of belonged to the age group between 30 to 40 and had Higher Secondary education Majority of study group belong to unskilled labour and belonged to the below poverty line population.80% of couples had a normal sexual life without any major physical or psychological sexual problems Majority had a BMI of more than 24 and 15% of patients lacked male pattern of hair distribution which was again s/o hormonal imbalance or testosterone deficiency.75% of the group had one or other substance abuse which can impair spermatogenesis-smoking and alcohol being the major culprits. Chemical exposure was seen in 11 patients.*

Most of them were painters and few worked in chemical industry ie dye, plastic .A positive medical history was got from 55% of patients. Majority of them were diabetic followed by systemic hypertension. Another important point to note was history of mumps orchitis in the childhood (11%) which is a vaccine preventable disease. 32% had an identifiable testicular problem. Positive surgical history was there in 35%.External genitalia was normal in majority Testis was abnormal in 18% of cases.40% of testis was soft in consistency again suggestive of defective spermatogenesis. CBAVD was present in 10% of subjects.

Conclusion: *This study showed most of our patients attended infertility clinic within 2 years of marriage and most had a normal sexual life.BMI was on the higher side on the study group may contribute to deterioration of spermatogenesis. Substance abuse was significantly seen in the study group. Childhood mumps orchitis was present in 11% of patients which can be prevented by proper vaccination. Prevalence of diabetes, hypertension was more in our study group. This study also suggests the importance of examination of male partner in case of azoospermia and gives a hope for becoming a genetic father with a surgically retrieved sperm by finding out the aetiology of azoospermia*

Keywords: *Azoospermia; Infertility; Mumps; Testis.*

Introduction

Infertility is defined as the inability of a couple to conceive after at least 12 months of unprotected sexual intercourse. Azoospermia is defined as the complete absence of spermatozoa upon examination of the semen (including capillary tube centrifugation (CTC), strictly confirmed by the absence of spermatozoa issued in urine after ejaculation.) Causes of Azoospermia can be pretesticular, testicular and post testicular.¹ Azoospermia is present in approximately 1% of all men, and in approximately 10-20% of infertile men. Pre-testicular azoospermia affects approximately 2% of men with azoospermia. Testicular failure or non-obstructive azoospermia is estimated to affect from 49% to 93% of azoospermic men. Posttesticular obstruction or retrograde ejaculations are estimated to affect from 7% to 51% of azoospermic men. Pretesticular is usually due to hypogonadotrophic hypogonadism and pan-hypopituitarism.² In this testes may be smaller than normal and low FSH, LH testosterone level. Treatment is mainly medical. Testicular is usually due to genetic and non-genetic causes. Non genetic causes includes mumps orchitis and cryptorchidism. In this testes smaller than normal and high FSH and LH. Testicular biopsy can be done for evidence of spermatogenesis.Post testicular is usually due to obstructive causes like infection, iatrogenic following surgery, and congenital bilateral

absence of the vas deferens. In this testis normal in size and normal FSH levels.

Male infertility due to azoospermia is on the increase and semen parameters are on the decline over the years. What contributes to this whether environmental factors, changing life style or psychological stress or a combination is not known.³ Hence such a study is designed to find out the clinical profile for risk factors so that proper intervention can be instituted.

Materials and Methods

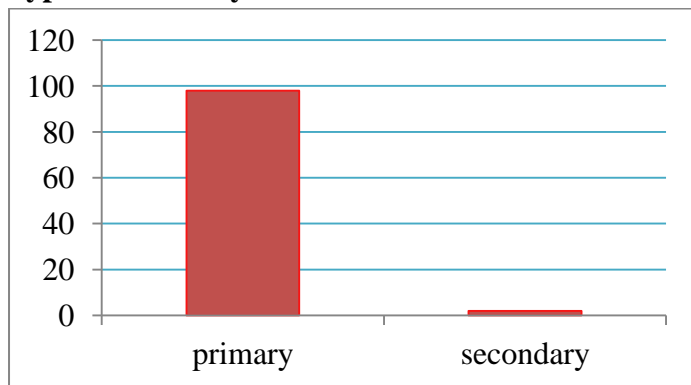
Interview method using structured closed end questionnaire and semen analysis using standard protocols.

Study Variables

100 patients with azoospermia which was confirmed by semen analysis were interviewed and semen analysis report were analysed. Socio demographic variables, environmental history, occupation, sexual history, history of smoking, alcohol, substance abuse, past medical history, previous conception, history of STD and other illness as mumps, TB filariasis, chronic illnesses like hypertension, diabetes, psychiatric illnesses. Medical history of anti-hypertensive's, anti-depressants, anabolic steroids and antibiotics. Past surgical history like scrotal surgery, prostatic surgery, inguinal hernia repair and traumatic history like testicular torsion. Family history of infertility, cystic fibrosis. Clinical examination, routine semen examination.

Results

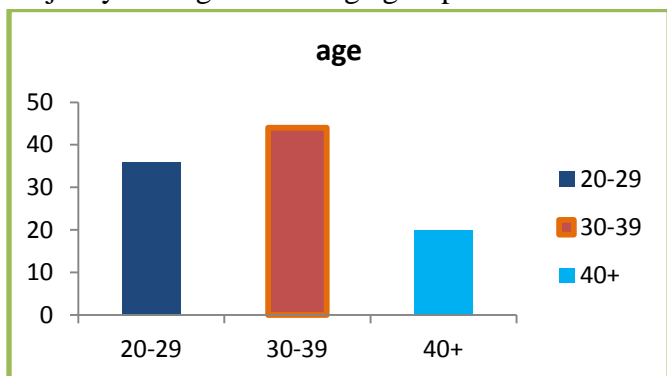
Type of infertility



98 % were primary infertility and of the two secondary infertility one was a case of post irradiation and another a case of testicular trauma following road traffic accident.

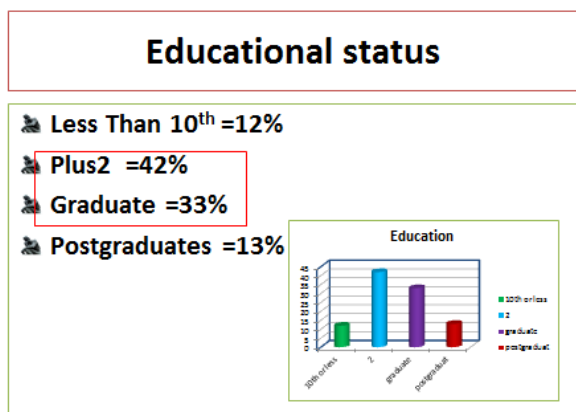
Age

Majority belonged to the age group of 30 and 39

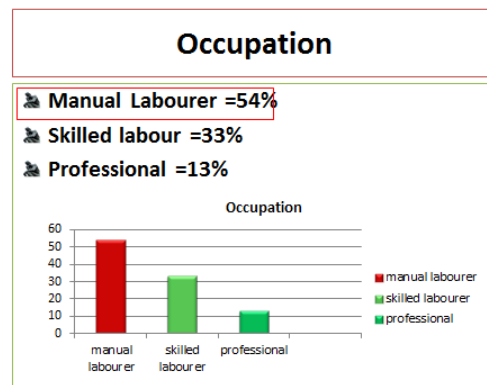


Educational Status

Majority belonged to the educated group

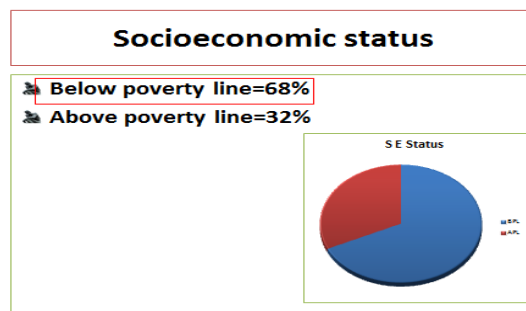


Occupation



Socio economic status

68% belonged to the BPL group (government set up)



Frequency of coitus

20 % were having very low frequency of coitus, low desire for sex,15 % experienced premature ejaculation

BMI

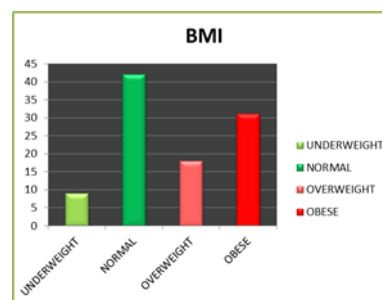
Most of the patients belonged to normal weight but when overweight and obese were taken together they were significantly more. Eunuchoid nature was noted in 2 patients

Underweight=9%

Normal =42%

Overweight=18%

Obese =31%



Hair distribution

85% had normal male pattern of hair distribution and 15 % had a feminine pattern

Substance abuse

Tobacco and alcohol and their combination was seen in 73% of subjects and three fourth of patients had one or other form of substance abuse.

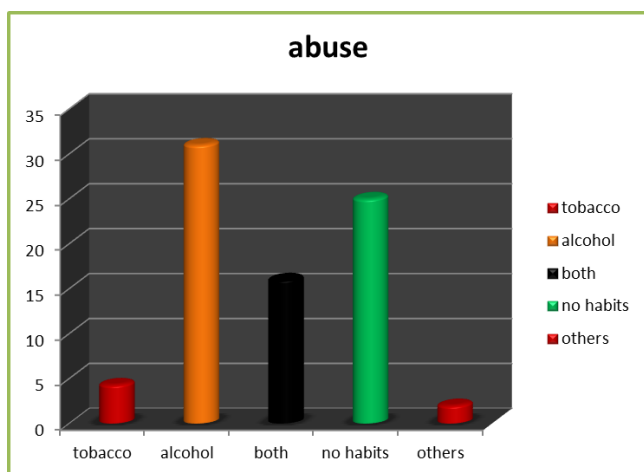
Tobacco=26%

Alcohol =31%

Both =16%

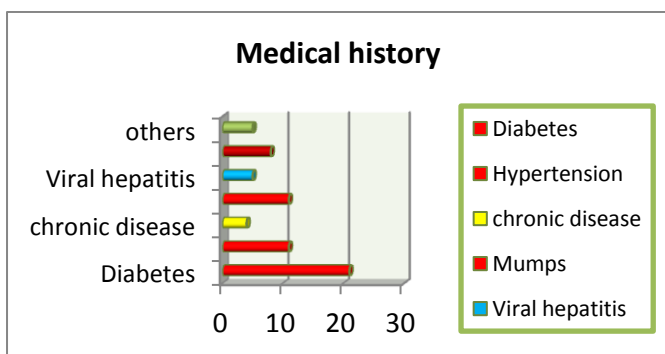
Others=2%

No habits=25%



Medical history

About 55% of patient gave positive medical history, diabetes and chronic hypertension were the major contributors. History of mumps in childhood was specifically asked and was positive in 11%



Testicular problems

Testicular problems were found in 32% of subjects and was mainly maldescend, testicular trauma and varicocele

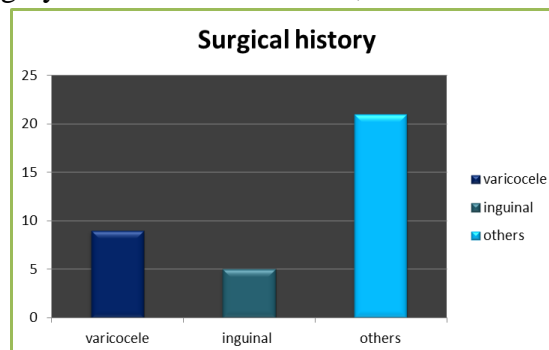
Maldescent=11%

Testicular injury =8%

Varicocele =13%

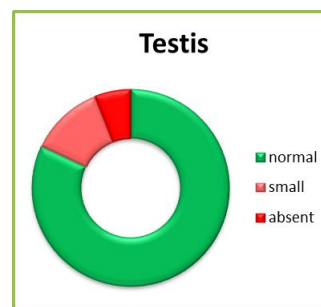
Surgical history

A positive surgical history was got in 35% of patients. 9% had surgery for varicocele,5% had surgery for inguinal hernia. Others included surgery for undescended testes, trauma etc



Male External Genitalia

Penis were normal in 96% of subjects. Two patients had micropenis and other two had hypospadias. Testes were normal in 82% of patients and consistency was normal in 70 % of patients. Three persons gives history of orchiectomy following trauma/torsion. Three had undescended testis and was removed during adult life.Out of small testes seven had surgery for undescended testis, in two external physique was s/o Klinefelters and other three gave history of mumps orchitis in childhood.



Scrotal scar was noticed in 28 % (scar of varicocele, testicular injury maldescend). Vas deferens was present and palpable in 78 %, thickened in 10 % and was absent 12 (Bilateral in 10 and unilateral in 2). Epidydimis was enlarged and palpable in 18% of cases. Varicocele was present in 14 % and hydrocele was present in 8%.

Discussion

This study done in the Fertility clinic of Sri Avittom Thirunal Hospital, Medical College, Trivandrum. 100 men attended with azoospermia were identified and included in the study. Majority of cases belonged to the age group of 30 to 40 and had Higher Secondary education. The average age was 36.9 years (range: 23 years and 53 years) in a study in Burkino Faso.⁴ Majority of study group belong to unskilled labour and belonged to the below poverty line population. Most of them had 1-2 years of cohabitation. The average duration of infertility was 5.8 years (Extreme: 1 year and 20 years) in a similar study⁴. 80% of couples had a normal sexual life with 2-3 act of coitus/week without any major physical or psychological sexual problems. Majority had a BMI of more than 24.9 (18+31=49%). 15% of candidates lacked male pattern of hair distribution which was again s/o hormonal imbalance or testosterone deficiency.⁵ 75% of the group had one or other substance abuse which can impair spermatogenesis-smoking and alcohol being the major culprits.⁷ Chemo Radiation exposure was there in two patients for malignancy. A positive medical history was got from 55% of patients. Majority of them were diabetic followed by systemic hypertension.⁸ Another important point to note was history of mumps orchitis in the childhood (11%) which is a vaccine preventable disease. Thirty two percent had an identifiable testicular problem. Positive surgical history was there in 35%. Testis was abnormal in 18% of cases. 40% of testis was soft in consistency again suggestive of defective spermatogenesis. CBAVD was present in 10%.^{10, 11}

Conclusions and Recommendations

Most of our patients attended infertility clinic within 2 years of marriage. Most of them had a normal sexual life. BMI was on the higher side which requires lifestyle modifications increased body weight may contribute to deterioration of spermatogenesis¹². Males with abnormal hair

distribution and stature may point towards testosterone deficiency and requires confirmation by hormonal evaluation. Substance is increasing in the society, cigarette smoking and alcohol intake may indirectly affect the wellbeing of the couple¹³. Occupational exposure to chemicals can affect spermatogenesis¹⁴ and can be minimized by proper counselling and other protective measures. Option of sperm banking can be offered in case of malignancies in pubertal age before starting chemotherapy or radiation.¹⁵ Universal vaccination to prevent childhood mumps should be practiced as childhood mumps.¹⁶ Early recognition and correction of cryptorchidism. The age at which surgical intervention is practiced and subsequent gonadal development may sometimes affect the prognosis. Proper surgical techniques in Varicocele surgeries, Hernia repair, and scrotal surgery. This study strongly recommends the importance of examination of male partner in case of azoospermia thus giving a hope for becoming a genetic father with a surgically retrieved sperm by finding out the aetiology of azoospermia.

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