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Male Infertility As Seen in University of Maiduguri Teaching Hospital North-Eastern Nigeria

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ABSTRACT: ***Background:*** ***Male infertility is a worldwide problem. In Africa it assumes a bigger dimension due to its psychosocial implications. We reviewed the magnitude of the problem and outcome of management. Aim to study the pattern of male infertility, and outcome of its management.*** ***Materials and Methods****: Male infertility patients managed at University Teaching Hospital Maiduguri (UMTH) between January 2008 to December 2012 were reviewed.* ***Results****-There were 73 patients, age ranged from 25-52 years with a mean of 38.35years. The peak age group was 30-39years with 45.20% of the patients.The duration of the problem varied from months to over 10 years. Twenty five(34.25%) patients had STD. Co-morbid medical conditions were hypertension in 18(24.66%), diabetes 9(12.33%). Abnormal findings in the testes were varicoceles in 51(34.93%) testes while 7(4.79%) were undescended testes. Seminal fluid analysis revealed azospermia in 44(60.27%), oligospermia in 26(35.62%). Sixty - seven patients had hormonal assay of which 21(31.34%) showed low testosterone and 17(25.37%) hyperprolactinemia. Forty-nine patients had bilateral testicular biopsy (98 testes) of which 47(47.96%) showed complete arrest of spermatogenesis with no viable spermatids. The psychosocial pressure and family problems were, 59(80.82%) 0f patients being under pressure from their spouses, with 28 cases of divorce. There were complete response with conception in 19(26.03%), partial response in 23(31.51%), to failure of treatment in 31(42.47%).* ***Conclusion:*** ***Male infertility is a major concern. Thorough evaluation to identify treatable causes, and referral for those that will benefit from assisted reproductive techniques, gives optimum results***

Keywords: Male Infertility, Pattern, Mangement Outcome.

1. Introduction

Among the various pathologies that afflict humans, infertility has a special place. It usually does not result in physical morbidity, pain, limitation of activity or longevity. However its impact on the psychological and social wellbeing of not only the index patient but also his or her partner makes it a major concern for health professional[1]. In Africa not only the couple suffer from the trauma of childlessness but also their parents and close relations, barely a year after wedding. The literature revealed many causes of infertility in the male which may be genetic or acquired. Complicated sexually transmitted diseases with their attendant vas deferens obstruction, varicoceles with its attendant hyperthermia, increase venous pressure and toxic metabolites[2], hormonal inbalances eghyperprolact anaemia with its effects of inhibiting pulsatile secretion of gonadotrphin releasing hormone, which causes decreased pulsatile release of FSH and LH, and testosterone which in turn causes spermatogenic arrest[3], and testicular atrophy from various causes, among others. There are systemic diseases that are known to be associated with infertility such as diabetes[4], obesity[5], and chronic liver diseases. Treatment options varied from assisted invitro conception[6], microvascular surgery for varicoceles, and medical treatment for hormonal inbalancses[7]. This study aimed at reviewing the pattern of male infertility and outcome of management.

2. Patients and Methods

The study reviewed all male patients presenting with primary infertility at the UMTH between January 2008 to December 2012. Informed consent was obtained from the patients and permission given by the Hospital Medical and Ethical committee. Data extracted from clinical and laboratory records and analysed.The diagnosis of primary infertility was based on clinical history of failure to achieve conception following regular unprotected sexual intercourse for at least one year. The following investigations were carried out among others, PCV, urinalysis, urine microscopy and culture, seminal fluid analysis, hormonal assay(FSH, LH, Prolactin, Testosterone), and testicular biopsy for histology where indicated. Patients received, where applicable antibiotics based on sensitivity, multivitamins, antioxidant extracts (Enhantz, homtamine), and Bromocriptine. Surgical procedures done where indicated were varicocelectomy, hydrocelectomy, and orchidopexy. For the purpose of the study responses to treatments were graded thus: complete response is when conception is achieved, partial response is when sperm count or hormonal imbalance improves but no conception, while failure means no response or condition worsens.

3. Results

Eighty-four patients were reviewed of which 11 were excluded for incomplete data and 73 were analysed. Age ranged from 25-52 years with a mean of 38.35years and SD of 7.30. The peak age group was 30-39years with 33(45.20%) of the patients. Fifty eight (79.50%) of patients

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were aged between 30-49years **(Table 1).** The duration of the problem varied from lessthan 5 years in 26(35.62%), 5-10years in 19(26.03%), and over 10 years in 28(38.35%). All patients were married with 24(32.88%) patients having more than one wife. Coital frequency varied from once a week in 8(10.96%), 2 times a week in 21(28.77%), and 3 times a week in 39(53.42%) patients, while 5 patients had low libido and erectile dysfunction. Only 35(47.95%) patients were aware of ovulation period. Twenty – eight (38.36%) of patients admitted there spouses had conceived before though with different partner. There were 25(34.25%) patients with history of STD, 21(28.77%) with history of UIT, while 8(10.96%) gave history of groin surgery. Abnormal findings in the testes were varicoceles in 51(34.93%) testes while 7(4.79%) were undescended testes **(Table 3)**. Seminal fluid analysis revealed azospermia in 44(60.27%), oligospermia in 26(35.62%), while 3(4.11%) patients had normal sperm count. Semen culture revealed mixed organisms in 11(15.07%), while 13(17.81%) revealed gram negative isolates. Sixty one patients had hormonal assay of which 9(14.75%) were normal and 19(31.15%) showed low testosterone **(Table 4)**. Forty-nine patients had bilateral testicular biopsy(98 testes) of which 18(18.37%) were normal while 47(47.96%) showed complete arrest of spermatogenesis with no viable spermatids**(Table 5)**. The psychosocial pressure and family problems were enormous with 59(80.82%) 0f patients being under pressure from their spouses, with 28 cases of divorce **(Table 2).**Co-morbid medical conditions were hypertension in 18(24.66%), diabetes in 9(12.33%), obesity in 8(10.96%), SCD 5(6.85%), depression 4(5.48%), and asthma and chronic liver disease 2(2.74%) each. Response to treatments offered varied from complete response with conception in 19(26.03%), partial response in 23(31.51%), to failure of treatment in 31(42.47%).

4. Discussion

Globally infertility is a major social problem afflicting mainly the working population, more so in developing countries where the children are often looked upon as source of sustenance in retirement age[8]. This study found 79.50% of patients in the working age of 34 – 49 years in keeping with global trend. Patients usually seek remedy from various health centres, fertility clinics, and prayer houses for years, as portrayed by long duration of the problem in this study with 64.40% had been bearing the burden for 5years and above. Where polygamy is practiced, infertility is a major motivation in acquiring additional wives with the hope of achieving conception. This study found polygamy rate of 32.88% among the patients. More often the additional wives are of proven fertility of having children in previous marriages, with 38.36% conception rate among the wives of the patients. Infective causes of infertility are well known, the study found UTIand STD as the commonest infective causes occurring in 28.77% and 34.25% respectively, comparable to 8-35% of male infertility cases associated with genital tract infection and inflammation found by Askienazy-Elbhar[9].Systemic diseases that are known to be associated with infertility are obesity, diabetes, SCD, chronic liver disease, among others. The study found diabetes, obesity, SCD, and chronic liver disease, in varying proportions among the patients. There is now emerging evidences that male obesity impacts negatively on the male reproductive potential not only reduces sperm quality, but in particular altering the physical and molecular structure of germ cells in the testes and ultimately mature sperm [10]. Diabetes has a negative impact in terms of sperm quality and the ejaculation mechanism, the study found 12.33% of patients diabetic far more than the 1.18% found by Delfino et al [11]. The study found SCD to be associated with low testosterone, high FSH and prolactin signifying primary testicular failure in keeping with similar study by Osegbe et al [12]. Chronic liver disease is associated with low testosterone as seen in this study, similar to findings by Green et al of clinical signs of hypogonadism and overt feminisation[13]. The study found a profound negative impact of infertility on the psychosocial life of the patients, as all patients admitted being under pressure from spouse, parents, friends and relations. These pressure took the form of nagging, quarrels and threats from spouse leading to tension, anxiety, and overt clinical depression, Prasanta et al found the non fulfilment of a wish for a child to be associated with emotional squeal such as anger, depression anxiety, marital problems and feelings of worthlessness[14]. The study found varicocele**,** testicular atrophy, and cryptoorchidism[15] as the main local testicular pathologies associated with male infertility, in keeping with similar studies. Seminal fluid analysis revealed azospermia, oligospermia, and normal count in 60.27%, 36.62%, and 4.11% respectively similar to findings by Parikhet al of 71.25%, 24.71%, and 2.35% respectively[16]. Abnormal hormonal assays associated with male infertility in this study were low testosterone, hyperprolactenaemia, and hypogonadismas found by similar studies .Testicular biopsy findings showed complete arrest of spermatogenesis with sloughing in most patients, and few showed arrest at various stages of spermatogenesis as commonly found in obstructive and primary testicular failure[16]. The outcome of treatments were complete response of 23.29%, partial in 34.25% (57.54%Total response) which is in keeping with global trend without Assisted Reproductive Technique though Dama et al found 83%.

5. Conclusion

Male infertility exist as clinical problem with major psychosocial impacts. Thorough evaluation is required for definitive treatment. Most patients benefit from hormonal manipulation and or surgical procedures with few requiring referral for Assisted Reproductive Techniques. There is need to study the ethiopathogenesis of male infertility in this environment.

Table 1: Age Distribution

Age	*No*	*%*
< 30	8	10.96
30 – 39	33	45.20
40 – 49	25	34.25
50 – 59	7	9.59
Total	73	100

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Table 2: Psychosocial Pressure.

Sources of Pressure/problems	No	%
Wife	59	80.82
Parents	52	71.23
Friends	32	43.84
Wife's Parents	12	16.44
Relations	8	10.96
Quarrels/Threats/Nagging	52	71.23
Separation	7	9.59
Divorce	28(cases)	

Table 3: Abnormal findings in Gonads

Abnormality	*No*	*%*
Varicoceles	51	34.93
Small volume/Atrophy	31	21.23
Abnormal lie	17	11.64
Undiscended	7	4.79
Hydroceles	5	4.11

NB: Testes Examined 146.

Table 4: Hormonal Assay Results**.**

Hormone	N0	%
Low testosterone	19	31.15
Hyperprolactinemia	15	24.59
High FSH, High LH	13	21.31
Low testosterone, High Prolactine	5	8.20
Normal Hormone Assay	9	14.75
Total	61	100

Table 5: testicular Biopsy Results

Biopsy	No	%
Normal	18	18.37
Viable Spermatogenesis with Arrest at various stages	24	24.49
Complete Arrest with sloughing and thickened membrane	47	47.96
Inconclusive/inadequate	9	9.18
Total	98	100.00

NB: Fourty- nine patients had biopsy (98 testes)

Table 6: Co-morbid Medical conditions.

Medical conditions	No	%
Hypertension	18	24.66
Diabetes mellitus	9	12.33
Obesity	8	10.96
Sickle Cell Disease(SCD)	5	6.85
Depression	4	5.48
Chronic liver disease(CLD)	2	2.74
Asthma	2	2.74

Legends of Tables:

Table 1: Age distribution
Table 2: psychosocial problems
Table 3: Abnormal findings in gonads
Table 4: Hormonal assay results
Table 5: Testicular biopsy results

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