Clinical Presentation of Infertility in an Outpatient Clinic of a Resource Poor Setting, South-East Nigeria

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ABSTRACT

Aim: To identify the prevalence, common symptoms, signs, partner contribution, common diagnosis and outcome of infertility in a resource poor setting.
Study Design: Descriptive retrospective study.
Place and Duration of Study: Ebonyi state University teaching Hospital, Abakaliki south-east, Nigeria, in two years (1st January 2009 to 31st December 2010).
Method: Case notes of patients who attended the infertility clinic over the study period were retrieved from the health services department of the hospital and analysed.
Results: Infertility patients were 295 out of 1,913 new gynaecological cases during the period under review, forming 15.4% of the study population. The number of folders with complete information was 266 which were 90.2%. Primary infertility patients were 94(35.3%) of all infertility cases) while 172(64.7%) were secondary infertility. The age range was 19 to 47 years, with a mean value of 30.9±2.3 of two standard deviations across the mean. The mean parity was 1.4±0.8 and ranged between 0 – 7 children. Among those with previous deliveries, 68.2% had no living child. The predominant symptoms in the females were insomnia, inadequate coital exposure, galactorrhoea and vaginal discharge. The commonest demonstrable signs were galactorrhoea in 92(34.6%) patients, cervical excitation tenderness in 54(20.3%) and uterine mass in

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65(24.4%).Some 44(16.5%) persons had no remarkable findings.

Partner contributions were: 93 (34.9%) for females; 60(22.6%) males; 64(24.1%) both partners. Pelvic infections (75.5%) and tubal occlusion (16.9%) were the commonest aetiologic factors. Others were: endocrine disorders including polycystic ovarian diseases, uterine myoma, uterine synaechiae and tubo ovarian masses. The outcome of treatment was: 40(15.0%) pregnancies; 112(42.1%) still on treatment and counseling; 75(28.2%) referrals and 39(14.6%) patients lost to follow up.

Conclusion: Astute history taking and physical examination helped in elucidating the cause of infertility in many of our patients. Secondary infertility as in other parts of our country takes upper hand thereby reinforcing the need for prevention of pelvic infection in women of reproductive age. Total cares of infertility couples require the cooperation of men, laboratory scientists, radiologists, and even clinical psychologists (it is multidisciplinary). Treatment outcome is still poor and may be improved through increased priority in public funding, equipment supply, and manpower training as well as health education.

1. INTRODUCTION

Infertility is a worldwide problem, affecting 8 – 15% of the couples in their reproductive age (Boivin et al., 2009; Audu et al., 2003; Puscheck and Woodad, 2009). However, the incidence varies from one region of the world to the other, being highest in the so-called infertility belt of Africa, of which Nigeria is inclusive (Okonofua, 2003). In some parts of this belt, infertility is said to constitute up to 65% of gynaecological consultations (Idrisa, 2005). Institution based incidence of infertility recently reported from some parts of Nigeria are: 4.0%, 11.2% and 48.1% respectively from llorin (North central), Abakaliki (south-east) and Oshogbo (South west) (Abiodun et al., 2007; Umeora et al., 2008; Adeyemi et al., 2009).

In sub-Saharan Africa, pelvic infections largely constitute the cause of infertility in several places (Audu et al., 2003; Okonofua, 2003; Idrisa, 2005; Abiodun et al., 2007; Meroe et al., 2008; Adeyemi et al., 2009). These stem from sexually transmitted diseases, post abortal and post delivery complications. Comparative studies from Ile – Ife Nigeria showed a positive correlation between secondary infertility and induced abortion, post abortal sepsis, manual removal of placenta as well as previous prolonged unsupervised labour (Orji, 2008). Both the males and females are said to contribute equally to infertility[1]. Male factors include pretesticular – neurohormonal (as in general debilitation, hypothalamohypophysial and other endocrine maladies); environmental toxins (cadmium, lead and tobacco related) or metabolic disorders; testicular (testicular neoplasm, epididimo orchitis, or testicular trauma) and post testicular-including the blockage of male genital tubules (Boivin et al., 2009; Idrisa, 2005; Gagnon, 1988; Safe, 2000; Omu et al.,1995; Oluyemi et al., 2006). Unfortunately in Nigeria, many men refuse or need much persuasion to present themselves for investigation either because they feel that they have no problem or as a result of their local/cultural beliefs. Female disorders include cervical, uterine, tuboperitoneal, ovarian, endocrine and general metabolic disorders (Boivin et al., 2009; Idrisa, 2005).

Diagnosis of infertility depends on clinical presentation and results of investigations. So many advances in this field of gynaecology have made investigative techniques for this

condition vast and sophisticated. Unfortunately, clinicians in resource – poor settings face the challenge of harmonizing cost with efficient and effective management of infertility in this teaming population of patients. This stems from the fact that these techniques are scarcely available and expensive. All that may be available to the Gynaecologist may be a thorough history, physical examination and a few ancillary investigations.

The objective of this study is therefore to identify the biosocial factors; common symptoms and signs, their mode of distribution among the patients presenting with infertility, the common etiology and treatment outcome in a resource poor setting in Nigeria.

2. MATERIALS AND METHODS

2.1 Study Background

Ebonyi State is a mainland south–eastern state of Nigeria with an area of 5,530km^2 and an estimated population of 4.34 million people, having its capital in Abakaliki[15]. Ebonyi State University Teaching Hospital (EBSUTH) is one of the two tertiary health institutions in Abakaliki. It receives referrals from all parts of the state and the neighbouring states of Benue, Cross–River, Enugu and Abia.

The Obstetrics and Gynaecological department of EBSUTH is staffed with 10 consultant Obstetricians and Gynaecologists; 24 resident doctors, numerous House officers and staff Nurse/midwives. The unit consists of 4 teams, each having at least 2 consultants. The consultants and resident doctors run the gynaecological clinics every working day of the week (Mondays to Fridays).

The gynaecological ward has 24 beds. Patients are admitted into these wards from the gynaecological clinics in addition to referrals from the accident and emergency unit of the hospital.

Patients seen at the gynaecological clinics are referred by doctors in and outside the hospital. Detailed history and physical examinations are carried out to make an impression on patient's condition. Ancillary tests where needed are performed to further elucidate the diagnosis. An outpatient register is kept on all patients who came to the clinic.

2.2 Study Population

All patients who attended the gynaecological clinic with a diagnosis of infertility were included in the study. All cases with incomplete information (e.g. Medical history, Social history and Occupation) required were excluded, including those who could not complete their investigations (e.g. Full blood count, Seminal fluid analysis, Pelvic sonography and Hysterosalpingography).

2.3 Study Design

This was a descriptive retrospective study of all infertility cases seen between 1st January 2009 and 31st December 2010 (a two year period) at the gynaecological clinic of EBSUTH. After obtaining clearance from the Ethics and Research committee of the Hospital, all cases of infertility were identified from the gynaecological out-patient register. Names of the

patients and their hospital numbers were obtained. With this, case notes of the patients were retrieved from the health records department and relevant data were extracted.

Information obtained from the case records were related to the social demographic characteristics of the patients, symptoms and signs they presented with, duration of the infertility, investigations with the results, and the outcome of treatment.

Ethical approval was given and patients gave full consent for the study.

The data was analyzed using SPSS version 16 to obtain the mean, range and percentages and standard deviations. These were displayed on tables 1-6.

3. RESULTS

The total gynaecological consultations during the period under review were 2,478. The total number of patients who were attending for the first time was 1,913, out of which cases of infertility were 295 patients giving an incidence of 15.4%. Folders with complete information were 266 (90.5%).

Primary infertility patients were 94 giving a prevalence of 35.3% of all the infertility patients. Secondary infertility cases were 104 (66%). The age range was between 19 years and 47 years. The mean age incidence was 30.9±2.3 years.

Table I shows the ages, parity and duration of infertility. The mean parity was 1.4±0.8. The parity ranged between 0 and 7 deliveries. 68.2% of the patients with previous deliveries had no living children. Two patients had 7 children each and they were females. Six other patients had 5 deliveries each, but none was alive. Almost half of the population of the infertile population studied (43.9%) had experienced infertility between one and five years. As the years increased, the population who presented for medical assistance decreased.

Table 1. Socio-demographic characteristics and infertility

Variables	Number (%)
Age	**N = 266**
< 20	4(1.5)
20 – 29	112(42)
30 – 39	120(45.1)
40 or more	30(11.3)
Parity	
0	92(34.6)
1	53(19.9)
2	64(24.1)
3	44(16.5)
4	0(0)
5 or more	13(4.9)
Duration of infertility (years)	
1 – 5	123(46.2)
6 – 10	73(27.4)
11 – 15	40(15.0)
16 – 20	25(9.4)
21 or more	5(1.9)

Table 2. Contribution of partners to infertility

Partner contribution	Number of cases (%) N = 266
Male only	60(22.6)
Female only	93(34.9)
Both partners	64(24.1)
No cause found	49(18.4)

Table 3. Symptoms in infertile gynaecology patients

Symptoms	Number (%) N = 266
Chronic Pelvic pain	100(37.6)
Insomnia	124(46.6)
Inadequate coital exposure	122(45.8)
Menstrual irregularity	99(37.2)
Galactorrhoea	73(27.4)
Previous history of:	
Induced abortion	56(21.1)
Post partum sepsis & haemorrhage	74(27.8)
Unremarkable past and present history	62(23.3)
Vaginal discharge	117(43.9)

Table 4. Physical examination in infertile gynaecology patients

Findings	Number (%) N =266
Galactorrhoea	92(34.6)
Hirsuitism	38(14.3)
Cervical excitation tenderness	54(20.3)
Uterine mass	65(24.4)
Adnexal mass	30(11.3)
Normal study	44(16.5)

Table 5. Factors identified in female infertility

Factor	Number (%) N = 266
Pelvic infections	201(75.5)
Endocrine disorders	39(14.6)
Polycystic ovaries	24(9.0)
Uterine myoma & polyps	47(17.7)
Uterine synaechiae	23(8.6)
Tubal occlusion	45(16.9)
Tubo-ovarian masses	16(6.0)

Table 6. Outcome of infertility treatment

Outcome	Number (%) N = 266
Became pregnant	40(15.0)
Treatment & counseling still in progress	112(42.1)
Referred	75(28.2)
Lost to follow up	39(14.6)

4. DISCUSSION

The finding of incidence of infertility of 15.4% among the gynaecological patients in our study is surprisingly low as the catchment populations are rural, urban and peri-urban dwellers (Gagnon, 1988). However, this agrees with another study in Abakaliki and is even higher than results from Ilorin though a far cry compared to the results from Oshogbo (Abiodun et al., 2007; Umeora et al., 2008; Adeyemi et al., 2009). The reason for the low incidence in this study may be attributed to the superstitious beliefs common in our environment which make infertile couple seek help from native doctors and prayer houses rather than orthodox Medicare.

The predominance of secondary infertility in this study (65%) agrees with other studies in our country (Audu et al., 2003; Okonofua, 2003; Orji, 2008). This is opposed to the trend in the developed world where primary infertility is higher (Puscheck and Woodad, 2009; Bhattacharya, 2007). This situation in sub-Saharan Africa has been attributed to poorly managed previous pelvic infections or pelvic inflammatory diseases (Audu et al., 2003; Okonofua, 2003; Orji, 2008; Okonofua et al., 1997). One is therefore not surprised that symptoms of chronic pelvic pain, menstrual irregularity in addition to previous history of post partum complications and abortion were common in our patients.

The poor child survival which prompted multiparous patients to attend infertility clinic is note worthy. The finding that 118 patients constituting 46.9% of secondary infertility cases had no living child agrees with an earlier work in Gombe where 67.4% of patients had no living child (Audu et al., 2003). This is a reflection of the role of poor child survival and poor obstetric services in contributing to the increase in the number of 'infertility patients in Nigeria. The finding of the inverse relationship between the number of couples seeking medical attention and duration of infertility may be a reflection of frustration and mistrust on medical services as infertility progresses and therefore calls for aggressive attention on first attendees.

This study is showing a greater contribution of female factor(35.1%) as opposed to male factors which is 22.3% and agrees with the study at Maiduguri (where male and female factor contributions were respectively: 28.6% and 31.3%) (Audu et al., 2003). This work showed a wider margin probably reflecting the greater female contribution to secondary infertility through increased tubo peritoneal disorders (Bhattacharya, 2007; Templeton, 2000). The incidence of tubal diseases in this study was 54.4%. Although sexually transmitted disease is a contributor to secondary infertility in both partners, females have extra contributions from pelvic infections caused by puerperal sepsis, post abortal sepsis and post operative septic morbidities and these were present in the history from the case notes (Audu et al., 2003; Oluyemi et al., 2006; Chukwudebelu et al., 1979; Mbazor and Umeora, 2007).

Insomnia and many other bizarre symptoms constituted the major complaints seen in these patients 124(47.6%). This reflects the psychological trauma experienced by these patients. A study on psychiatric morbidity in infertility showed that 37.5% of them had anxiety while 42.9% were depressed, both manifested with insomnia (Ukpong and Orji, 2006). Another study which was multicenter from the north, south-east and south-western parts of Nigeria also showed that these women were subjected to domestic violence though of varied magnitude in different cultures (Gagnon, 1988).

Neither the fact that about a quarter of these women had any remarkable past or present history (23.1%) nor any remarkable physical findings (26.9%) reflect the inadequacy of history and physical examination in the diagnosis of root cause of infertility. Unfortunately, many centers lack tools for proper investigation of the patients (Audu et al., 2003). Obtaining the co-operation of the male counterparts are also difficult (Okonofua, 2003; Umeora et al., 2008). Unexplained infertility was high in our center being 18.5% and is higher than the study at Nnewi and Enugu, reflecting the need for better investigational tools to probe into chromosomal and immunological disorders (Idrisa, 2005; Ikechebelu et al., 2002).

Polycystic ovarian disease and other endocrine disorders formed 23.8% of the population studied is slightly higher than the study in Maiduguri where they made up 19.4%.

Galactorrhoea was common among the complaints (27.6%) and physical findings (34.6%) Since it is found in normal fertile women, and in hyperprolactinaemia whose differentials are: hypothalamohypophysial gonadal axis disorder, pituitary tumours, drugs, renal failure, and primary hypothyroidism, one is not surprised at the relatively high incidence (Klufio, 2003). It may be one of the treatable conditions elicited from history and physical examination. However laboratory investigations to elucidate or rule out associated conditions are still required (Audu et al., 2003; Idrisa, 2005; Klufio, 2003).

Inadequate coital exposure of less than twice a week (seen in 45.7%) reflects the need for health education. However, it is known that as infertility progresses, coital frequency reduces (Ameh et al., 2007). Such clients, among other things, may need reassurance.

The outcome showing a pregnancy rate of 15.1% is a cause for worry, although 42% were still receiving treatment and counseling. Loss of 14.6% at follow up reflects the health seeking behavior where clients tend to have multiple consultations with orthodox and native doctors (Idrisa, 2005).

5. CONCLUSION

This study has observed that secondary infertility is common among the patients with infertility problem in EBSUTH in agreement with other centers. Elucidation of signs and symptoms suggestive of current or previous pelvic infection supported its role in infertility. A significant number of infertile patients in our population had nothing significant found in their physical examination. Psychological symptoms are very common among them. Unexplained infertility is high and outcome of management is poor.

In view of the foregoing, preventive efforts to curb pelvic infection through safe sex; prevention of sexually transmitted diseases, provision of safe abortion care, essential obstetric services including safe delivery services will reduce the incidence of infertility. Astute history taking and physical examination is a readily available tool for management of many of these patients. Gaining the cooperation of the male counterparts and provision of

facilities to properly investigate these patients should be a public health priority and is a necessity in institutions such as ours. Psychological support and health education are needed for management of infertility patients.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

Abiodun, O.M., Balogun, O.R., Fawole, A.A. (2007). An etiology, clinical features and treatment outcome of intrauterine adhesions in llorin, North-central Nigeria. W.A.J. Med., 26, 298–301.

Adeyemi, A.S., Adekunle, D.A., Afolabi, A.F. (2009). Pattern of gynaecological consultations at Ladoke Akintola University Teaching Hospital, Osogbo. Niger J. Clin. Pract., 12, 47–50.

Ameh, N., Kene, T.S., Onuh, S.O., Okohue, J.E., Umeora, O.U.J., Anozie, O.B. (2007). Burden of domestic violence among infertile women attending infertility clinics in Nigeria. Niger J. Med., 16, 375–377.

Audu, B.M., Massa, A.A., Bukar, M. (2003). Clinical presentation of Infertility in Gombe, North-Eastern Nigeria. Trop J. Obstet Gynaecol., 20, 93–96.

Bhattacharya, S. (2007). Infertility. In: Edmond DK(Ed) Dewhurst's Textbook of Obstetrics and Gynaecology for Postgraduates. Blackwell Science, Oxford, 440-460.

Boivin, J., Bunting, L., Collins, J.A., Nygren, K.G. (2009). International estimates of infertility prevalence and treatment seeking: Potential need and demand for infertility medical care. Hum. Reprod, 24, 2379–2380.

Chukwudebelu, W.O., Esege, N., Megafu, U. (1979). Aetiological facors in infertility in Enugu, Nigeria. Infertility, 2, 193-200.

Ebonyi State (2011). Wikipedia available at: http://en.wikipedia.org/wiki/Ebonyi-state.

Gagnon, C. (1988). The role of environmental toxins in unexplained male infertility. Seminars in Reproductive Endocrinology, 6, 369-376.

Idrisa, A. (2005). Infertility, in: Kwawukume E.Y. and Emuveyan E.E. (Eds). Comprehensive Gynaecology in the tropics. Graphic Packaging. Accra, 333–345.

Ikechebelu, J.I., Adinma, J.I.B., Ikegwuonu, S.G., Orie, E.F. (2002). Clinical correlates of unexplained infertility in Southeastern Nigeria. Trop. J. Obstet Gynaecol., 8-11.

Klufio, C.A. (2003). Hyperprolactinaemia and prolactinomas. In: Kwawukume EY and Emuveyan EE. (Eds). Comprehensive gynaecology in the tropics. Graphic Packaging Ltd. Accra Ghana, 375-381.

Mbazor, J.O., Umeora, O.U.J. (2007). Correlation between hysterosalpingography and laparoscopy/dye test in the investigation of tubal infertility. Nig J Med., 48, 71-74.

Okonofua, F.E. (2003). Infertility in sub-Saharan Africa in: Okonofua F. and Odunsi K. (Eds). Contemporary Obstetrics and Gynaecology for Developing countries. Women Health and Action Research Centre (WHARC) Benin City, 128–156.

Okonofua, F.E., Snow, R.C., Alemnji, G.A., Okoruwa, A., Ijaware, C.O. (1997). Serological and clinical correlates of gonorrhoea and syphilis in fertile and infertile Nigerian women. Genitourin. Med., 73, 194–197.

Oluyemi, A., Arowojolu, A.O., Shittu, O.B., Anetor, J.I. (2006). Cadmium toxicity: a possible cause of male infertility in Nigeria. Reprod. Biol., 6, 17-30.

Omu, A.E., Dashtu, H., Mohamed, A.T., Mattappallil, A.B. (1995). Significance of trace elements in seminal plasma of infertile men. Nutrition, 11, 502-505.

Orji, E.O. (2008). Comparative study of the impact of past pregnancy outcome on future fertility. Singapore Med. J., 48, 102–104.

Puscheck, E.E., Woodad, T.Z. (2009). Infertility: e-Medicine Specialties > Obstetrics and Gynaecology available at http://emedicine.medscape.com/article/274143 updated on 5/5/2009 and accessed 2/10/2009.

Safe, S.H. (2000). Endocrine disruptions and human health–is there a problem? An Update. Environmental Health Perspectives, 108, 487-493.

Templeton, A., Shetty, A., Bhattacharya, S., Gazvani, R., Hammilton, R., Macmillan, S. (2000). The management of infertility for MRCOG and beyond. RCOG Press. London, 28-29.

Ukpong, D., Orji, E. (2006). Mental Health of Infertile Women in Nigeria Turk. Psikiyatri. Derg, 17, 259–265.

Umeora, O.U.J., Ejikeme, B.N., Sunday-Adeoye, I., Umeora, M.C. (2008). Socio cultural impediments to male factor infertility evaluation in rural South-east Nigeria. J. Obstet Gynaecol., 28, 323–326.