Original Article

Pattern and Outcome of Infertility in Enugu: The need to Improve Diagnostic Facilities and Approaches to Management

UGWU, EO MBBS, FWACS, FMCOG ONWUKA CI MBBS, Okezie OA MBBS, FWACS
Department of Obstetrics and Gynaecology, University of Nigeria Teaching Hospital, Enugu, Nigeria

ABSTRACT
BACKGROUND: In Nigeria, infertility is a social stigma for the childless couple due to the high premium placed on propagating oneself.
OBJECTIVE: To determine the pattern of infertility among women attending the gynaecological clinic of university of Nigeria Teaching Hospital, Enugu and to examine the outcome of management.
METHODS: A descriptive retrospective design study based on findings from the folders of infertile couples presenting at the gynaecological clinic of University of Nigeria Teaching Hospital over a five year period (2004 - 2008). The data were collected from all documented and laboratory findings. The data extracted from the case records were the socio-demographic characteristics of the patients, the type of infertility whether primary or secondary, the causes, and the treatment in the years under review. The outcome of management was also evaluated. These were analyzed using SPSS 12.0.1 for window version.
RESULTS: The mean age of the women was 34.1 ± 4.9 (range 21 - 46) years. The prevalence of infertility was 5.5% of all outpatient gynaecological consultations. The cause of infertility could not be determined in 39.4% of cases, female factors were identified as the sole causes in 28.7% of cases, male factors as sole causes in 11.5% of cases, and combined male/female factors in 20.4% of cases. Secondary infertility accounted for 76.8% of infertility and primary infertility 23.2%. The age of the women and the educational level did not significantly influence the type of infertility the women presented with ($P > 0.05$). Tubal factor was identified in majority of cases and pregnancy was recorded in only 17.0% of the women.
CONCLUSION: Secondary infertility is more prevalent in Enugu with tubal factor accounting for majority of the cases with identifiable causes. The outcome of treatment of infertility is poor. There is need to improve infertility diagnostic and treatment facilities and approaches in Enugu, Nigeria.

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INTRODUCTION

Infertility is among the commonest reasons women have for seeking or consulting a doctor throughout the world.[1] In Nigeria, over 60% of gynaecological clinic consultations are infertility related.[2] This is essentially due to its enormous impact on the socio-psychological wellbeing of the affected couples. The exaggerated emphasis on childbearing in our environment, and the crave for high fertility and large family size even in modern times make infertility to be seen as a curse rather than a real physiological dysfunction.[3] This perception often pushes the affected couples to resort to unorthodox means of treatment including witchcraft and sorcery which may breed more hostility and animosity. The resultant effect of all these is that infertility becomes a monster and a social sigma to the affected couples. Thus, the infertile man commonly has a deflated self esteem and is often looked down upon by his peers. Likewise, the infertile woman is despised by most cultures and often treated as an outcast upon her husband's demise with no claim to the inheritance. Infertility in Nigeria has thus been described as the most humiliating tragedy for the couple especially for the women.[3]

It has been estimated that infertility affects 10-15% of couples generally.[4] In Nigeria, prevalence rates as high as 20-30% have been reported.[1] Similar high prevalence rates have also been reported from some other sub-saharan African countries such as parts of sudan and Cameroon republic.[5]

Infertility can be primary which applies to those who have never conceived or secondary which applies to those who have conceived at sometime in the past.[2]

Although the society regards infertility as mainly a woman's problem, it must be acknowledged that the male is equally a contributor; he is solely responsible for 35% of cases, the female is responsible for another 35% while in the remaining 30%, the abnormalities would be identifiable in both the male and female partner.[2]

The major causes of female infertility in Nigeria is tubal factor.[6,7] Other female causes include intrauterine adhesions, fibroids, polycystic ovarian syndrome, thyroid dysfunction, hyperprolactinaemia, and endometriosis amongst others.[2] Infection appears to be a strong predisposing factor for infertility in both males and females especially in sub-sahara Africa.[3] In addition, male fertility is reduced by occupations that expose men to radiant heat and also those that require men to sit for long period such as driving a taxi among others.[8] Unexplained infertility which presupposes that the cause of infertility is unidentifiable by the available diagnostic/investigative tools is generally agreed to be around 10%.[4]

Correspondence: UGWU EOV, Department of Obstetrics and Gynaecology University of Nigeria Teaching Hospital, Enugu, Nigeria
E-MAIL: ugwueov@yahoo.co.uk, PHONE: 234-8037790402

The management options commonly employed for infertility ranges from mere expectant management involving counseling and reassurance of the couple, to the use of ovulation induction agents, tubal surgeries, artificial reproduction techniques and adoption among others.[4] Adoption is often not accepted by most infertile Nigerian couples even where highly indicated.[9]

The aim of this study is to establish the pattern of infertility among Nigerian women attending Gynaecology clinic of University of Nigeria Teaching Hospital. The specific objectives are to determine the prevalence of infertility among gynaecological clinic attendees in Enugu; to determine the causes of infertility amongst infertile couples and the management options instituted; and to make recommendations based on these results as well as updating available information on infertility management in Nigeria.

PATIENTS AND METHOD

This is a retrospective review of the case records of all infertile couples presenting at the Gynaecology clinic of University of Nigeria Teaching Hospital, Enugu over a five year period (1st January 2004 31st December 2008). The case records were collected from the medical records department of the hospital. The data extracted from the case records included age of the patients, occupation, tribe, religion, highest educational level, the type of infertility whether primary or secondary, causes and treatment received. The outcome of management was also evaluated in terms of pregnancies after commencement of management. The data were analyzed using SPSS 12.0.1 for window version using descriptive statistics. Women who have had previous pregnancies irrespective of outcome of such pregnancies were considered to have secondary infertility while those who had never been pregnant previously were considered to have primary infertility.

RESULTS

A total of 11,024 patients attended the gynaecology clinic during the study period. Six hundred and six (606) patients were managed for infertility giving a prevalence of 5.5% of all the outpatient gynaecological consultations. The case records of only 383 (63 %) were found and analyzed.

Table I shows the age distributions and the highest educational levels of the women. The mean age of the women was 34.1 ± 4.9 (range 21 - 46) years. The peak age incidence of infertility was 31 - 40years; followed by 21 - 30years. One hundred and thirty six (35.5%) were civil servants. One hundred and five (27.4%) were traders, 59 (15.4%) were unemployed, 39 (10.2%) were artisans/farmers, 31 (8.1%) were students and 13 (3.4%) were public servants. Majority of the women were Ibos (94.5%). Others were Yoruba (0.3%), Hausa (0.8%) and others (4.4%). Most of the women were Christians (99.2% while Moslems constituted 0.5% and other religions (0.3%).

Secondary infertility was seen in 294 women (76.8%) and primary infertility in 89 (23.2%). The age of the women and the educational level did not significantly influence the type of infertility presented (P > 0.05). Table II.

Female factors alone were identified as responsible for infertility in 110 cases (28.7%), male factors alone in 44 cases (11.5%), both factors in 78 cases (20.4%) and undetermined factors in 151 cases (39.4%).

Tubal factors were the most prominent aetiological factor (13.6%). Other causes are as represented in Table III.

The management options offered for female infertility were ovulation induction with Clomiphene citrate (33.1%), bromocriptine (18.8%), antibiotics (12.3%), surgeries (9.1%) such as adhesiolysis, myomectomy and salpingostomy, etc (Table IV). The various treatment modalities offered for male infertility were illustrated in Table V.

Only 65 women (17%) achieved recorded pregnancy, and 194 (50.7%) women defaulted to follow up.

Table I: Age distribution and Educational level of the women

	No	%
Age		
21 30	125	32.6
31 40	215	56.2
41 50	43	11.2
Total	**383**	**100**
Educational level		
No formal education	5	1.3
Primary education	60	15.7
Secondary education	170	44.4
Tertiary education	148	38.6
Total	**383**	**100**

Table II: Influence of age and educational level on the type of infertility

	1° infertility (%)	2° infertility (%)	Total	P-value
Age				
< 35 years	57 (21.5)	208 (78.5)	265	
e 35 years	32 (27.1)	86 (72.9)	118	
Total	89	294	383	0.29
Educational level				
< Tertiary edu.(1°&2°)	47 (20.0)	188 (80.0)	235	
Tertiary edu. (3°)	42 (28.4)	106 (71.6)	148	
Total	89	294	383	0.08

Table III: Identified causes of infertility

	No	%
Tubal factor/ chronic PID	52	13.6
Hyperprolactinaemia	24	6.3
Ashermans syndrome	13	3.4
Polycystic Ovary syndrome	11	2.9
Thyroid dysfunction	5	1.3
Fibroid	4	1.0
Endometriosis	1	0.3
Male factors alone	44	11.5
Combined Male/female factors	78	20.4
Undetermined	151	39.4
Total	383	100

Table IV: Treatments instituted for female infertility

	No	%
Ovulation induction (CC)*	51	33.1
Bromocriptine	29	18.8
Antibiotics	19	12.3
Surgery**	14	9.1
Clomiphene citrate + Bromocriptine	7	4.5
Clomiphene citrate + Surgery**	8	5.2
Referred for ART	18	11.7
Counseled on Adoption	8	5.2
Total	154	100

*Clomiphene Citrate, ** Myomectomy, Adhesiolysis, Salpingostomy, etc

Table V: Treatments instituted for male infertility

	No	%
Vitamins	5	6.4
CC + Antibiotics	3	3.8
CC + Antibiotics + Vitamins	6	7.7
Bromocriptine + Vitamins	3	3.8
Antibiotics + Vitamins	3	3.8
Referred for ART	37	47.4
Counselled on adoption	21	26.9
Total	78	100

*Clomiphene Citrate, **Antioxidant Vitamins e.g. Vit. D, Vit. E

DISCUSSION

The peak age incidence of infertility in this study was 31- 40years. This implies that the majority of women seeking consultations for infertility in our clinic are in their fourth decade of life. This finding is similar to the report from southwestern Nigeria in 2008.[10] It is however in contrast with the 20-24years age group reported from calabar in 2007.[3] Increased risk of infertility in older couple has been shown to be primarily attributable to decline in fertility rate with age.[11] Majority of the women in this study were civil servants which may mean that these women who work might probably have postponed marriage and childbirth following earlier academic pursuit. The 5.5% prevalence of infertility obtained in this study is higher than the 3.4% reported from Calabar in 2007.[3]

Secondary infertility was responsible for 76.8% of infertility, similar to report from Southwestern Nigeria in 2008.[10] This implies that most cases of infertility seen in our environment followed acquired causes as also demonstrated by a previous study.[12]

Female factors were identified as sole causes of infertility in 28.7% of the cases with tubal factor being the most implicated factor. This finding is in keeping with the reports from most infertility clinics in Nigeria.[6,10] It is very regrettable that this highly preventable condition is the leading cause of female factor infertility in our environment. This underscores the need for more health education in the prevention and early treatment of sexually transmitted infections in our communities.

It is also very worrisome that the cause of infertility could not be identified in as much as 39.4% of the cases presented. This figure is far above the general 10% figure of 'undetermined' infertility reported in the literature.[2,4] This implies that the diagnostic techniques currently employed in the hospital may either be inadequate or obsolete. For instance, male factors accounted solely for 11.5% and this is much less than the 30-50% reported generally in the world literature.[2,4] Again, that only one case of endometriosis could be diagnosed as cause of infertility may be attributed to the lack of functional laparoscope in the hospital which then makes diagnosis of endometriosis difficult. The management options offered were ovulation induction with Clomiphene citrate in majority of cases, bromocriptine, antibiotics, and surgeries such as adhesiolysis, myomectomy and salpingostomy. Women that were referred for assisted reproduction may not have been able to afford it because of the high cost and inaccessibility of the technique in low resource settings. The establishment and provision of assisted reproductive technique in the hospital would have obviated the need for referral of these women. Again, the use of approaches that were not evidence based such as antioxidant vitamins among others in the management of male factor infertility would have been avoided as these approaches have not been shown to significantly improve fertility. All these no doubt culminated in high loss to follow up and poor management outcome recorded in this study.

Pregnancy was recorded in only 17.0% of cases; below 24% recorded in Calabar in 2007.[3] Besides the poor diagnostic and management approaches employed, the high loss to follow up obtained in this study might have contributed to the very low pregnancy rate recorded; some women might have achieved pregnancy in the course of management and decided to go elsewhere for antenatal care and delivery. This underscores the need for a further properly designed prospective study which will help unravel the true picture of our infertility management outcome.

In conclusion, secondary infertility is more prevalent than primary infertility in Enugu, and tubal factors are the most implicated. Many cases of infertility were undetermined, and the outcome of infertility management is poor. There is need to improve on infertility diagnostic and treatment facilities and approaches in Enugu, Nigeria.

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