

# The Impact of Galactorrhoea on Infertility In Port Harcourt.

Type of Article: Original

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## ABSTRACT

**Background:** Infertility is a major global problem and is regarded as a social stigma in the Nigerian society. At least one in every ten couples of reproductive age has infertility. Galactorrhoea is one of the complaints often associated with infertility. Its relationship with amenorrhoea and infertility is well established.

The objective of this study is to determine the incidence and contribution of galactorrhoea to female infertility and to determine any correlation between galactorrhoea and hyperprolactinaemia.

**Methods:** A descriptive prospective study involving 186 consecutive patients presenting with infertility at the University of Port Harcourt teaching Hospital between 1<sup>st</sup> January 2009 and 30<sup>th</sup> June 2009. All patients presenting with infertility at the gynaecological clinic of the University of Port Harcourt Teaching Hospital between 1<sup>st</sup> January 2009 and 30<sup>th</sup> June 2009 were included in this study. Data was collected based on a protocol developed for the study. Data collected was entered into a spread sheet using SPSS 14.0 for Windows<sup>®</sup> statistical software which was also used for analysis.

**Results:** Galactorrhoea was present in 101 (54%) of the infertile patients. Only 58% of the patients who had galactorrhoea were aware they had galactorrhoea. Galactorrhoea was associated with menstrual abnormalities in 37.8% of the patients, 17% had amenorrhoea while 20.8% had oligomenorrhoea. Hyperprolactinaemia was found in 55% of the study population, 76.9% of these had galactorrhoea while 80% of all patients with galactorrhoea had hyperprolactinaemia. Galactorrhoea (with hyperprolactinaemia) was the only abnormality found in 16.1% of the study population and in 29.7% of those with anovulation.

**Conclusion:** There is a high incidence of galactorrhoea (54%) and hyperprolactinaemia (55%) amongst infertile women as seen in this study. 16.1% of the study population had galactorrhoea (with hyperprolactinaemia) as the only abnormal finding. Most patients with galactorrhoea would also have Hyperprolactinaemia. There is a positive correlation between galactorrhoea & hyperprolactinaemia, not all women with hyperprolactinaemia had galactorrhoea and vice-versa.

**Keywords:** Galactorrhoea; infertility; Nigeria.

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## INTRODUCTION

Infertility is a major global problem and is regarded as a social stigma in the Nigerian society<sup>1</sup>. At least one in every ten couples of reproductive age has infertility<sup>2</sup>. The prevalence of infertility in sub-Saharan Africa is particularly high, ranging from 20 to 46% in some parts of West Africa<sup>3,4</sup>. About two of every five patients attending the gynaecology clinic in our environment complain of infertility<sup>5,6</sup>.

Reproductive failure has far reaching social implications in Nigeria where the main reason for marriage is to have children irrespective of whether the couple is in love or not<sup>7</sup>. The main causes of infertility among females in our environment are ovulatory failure (26%), tubal factor (65%), utero-cervical factors (21%) and no demonstrable cause (16%)<sup>8,9</sup>. In developed countries, the causes are ovulatory failure (21%), tubal factor (14%), male factor (21%), and unexplained (28%)<sup>10</sup>.

Fertility depends on complex psycho-physiological, anatomical, endocrine and immunologic factors. The male needs normal sperms produced and deposited in the reproductive tract of the female. The female needs a functionally intact hypothalamo-pituitary-ovarian axis to regulate and provide normal follicular development, ovulation and priming of the endometrium for implantation of the zygote, which has to pass through a normal fallopian tube following fertilisation. Failure of any of these complex processes lead to infertility.

Galactorrhoea is one of the complaints often associated with infertility. Its relationship with amenorrhoea and infertility is well established<sup>11</sup>. Galactorrhoea is the inappropriate secretion of breast milk<sup>12</sup>. It may be intermittent or continuous, free-flowing or expressible, and unilateral or bilateral. Galactorrhoea is a relatively common problem, it is estimated that 20-25% of women experience galactorrhoea at some time in their life<sup>13,14</sup>. Lactation requires the presence of estrogen, progesterone and, most importantly, prolactin. Galactorrhoea is a common manifestation of hyperprolactinaemia, but may not always be present in women with hyperprolactinaemia<sup>15</sup>. Galactorrhoea occurs in about 40% of hyperprolactinaemic patients<sup>16</sup>. In hypoestrogenic states, high levels of prolactin fail to stimulate milk production<sup>15</sup>. Hyperprolactinaemia results in the inhibition of the release of gonadotrophin releasing hormone (GnRH) from the hypothalamus and subsequent inhibition of luteinising hormone (LH) and follicle stimulating hormone (FSH), suppressed gonadal function thus hyperprolactinaemia is one of the most frequent causes of

anovulation<sup>17</sup>.

Galactorrhoea may be persistent or worrisome and places a great psychological burden on the patient more so when she links it to her monthly dream of expected pregnancy. It is caused by many conditions. Fluctuation of hormone levels during puberty and menopause can also cause lactation. Nipple stimulation with sexual activity or repeated self-breast examinations can cause increased prolactin secretion and lactation<sup>12</sup>. The most common nonphysiologic cause is ingestion of psychoactive drugs used in the management of schizophrenia; prolactinoma and primary hypothyroidism are also relatively common causes. Less commonly, chest wall lesions, renal failure, hypothalamic-pituitary disease, and tuberoinfundibular stalk disruption may be implicated<sup>12</sup>.

Demonstration of galactorrhoea has become a reliable sign in clinical gynaecology. However this practice and skill for routine breast examination is gradually being eroded in both general and specialist clinical settings. Therefore galactorrhoea is often missed at presentation thus leading to a delayed diagnosis, wrong treatment and unending gynaecological consultations.

Anecdotal reports show an increasing number of inappropriate lactation among our sub-fertile population. There has been no study in our centre on this simple clinical sign that windows a possible cascade of hormonal derangement. Owing to the magnitude of this problem in relation to infertility in our environment, it has become necessary to conduct this survey to determine the prevalence of galactorrhoea and its correlations to fertility profiles of these clients and their hormonal status.

## PATIENTS AND METHODS

This is a cross-sectional study carried out among patients presenting with infertility at the gynaecological clinic of the University of Port Harcourt Teaching Hospital between 1<sup>st</sup> January 2009 and 30<sup>th</sup> June 2009. One hundred and eighty six consecutive patients attending the infertility clinic were informed of the study and assured that all information collected would be treated with confidentiality. All 186 of them consented to participate. The study was approved by the Institutional Ethics Committee of the University of Port Harcourt Teaching Hospital.

A protocol was developed for data collection. Information collected included demographic data, history, examination findings and results of investigations. Investigations done include hysterosalpingography, hormone profile including assays for oestrogen, progesterone, leutinising hormone, follicle stimulating hormone and prolactin. Seminal fluid analysis and pelvic ultrasonography were also done. The data collected were coded and entered into a computer using SPSS 14.0 for Windows<sup>®</sup> statistical software. Results are presented as means with standard deviations, rates and proportions in tables and figures. Chi square tests were carried out where necessary. Cross tabulations and correlation analysis were performed to establish relationships among variables. These were reported when statistically significant at p values of = 0.05.

## RESULTS

Most of the women were in the age group of 26 - 35 years (table 1). Majority were nulliparae (66.13%). Of the 186 patients, 36 (19%) had primary infertility and 150 (81%) secondary infertility. The mean duration of infertility in the patients was  $4.42 \pm 3.18$  years with a range of 1 - 15 years. Galactorrhoea was present in 101 (54%) of the total infertile patients (figure 2), of which 16 (44.4%) had primary infertility and 85 (56.7%) with secondary infertility.

Galactorrhoea was elicited in the history, clinical examination or both. Only 58% of the patients who had galactorrhoea were aware they had galactorrhoea, while 42% of them were detected on clinical examination (figure 3). The mean duration of galactorrhoea in the patients aware of the condition was 2.46 years with a range of 1 - 13 years. 87.7% had milky nipple discharge while 12.3% had clear nipple discharge. There was associated breast tenderness in 11.3% of the patients. Galactorrhoea was associated with menstrual abnormalities in 37.8% of the patients, 17% had amenorrhoea while 20.8% had oligomenorrhoea. History of an antecedent pregnancy was elicited in 24% of all patients with galactorrhoea. None of the patients was on any medication that could induce galactorrhoea.

All the patients had hysterosalpingography, hormone profile, seminal fluid analysis and pelvic ultrasonography. Figure 4 shows the causes of infertility among these patients as determined from investigation results. In this group anovulation was the commonest cause of infertility accounting for 40.9% of cases. Hyperprolactinaemia was found in 55% of the study population, 76.9% of these had galactorrhoea while 80% of all patients with galactorrhoea were hyperprolactinaemic. Galactorrhoea was the only

Table 1: Demographic characteristics

Characteristic	Number	Percentage
d25	10	5.38
26 - 30	67	36.02
31 - 35	63	33.87
36 - 40	41	22.04
e 41	5	2.69
Parity		
0	123	66.13
1	52	27.96
2	8	4.30
3	3	1.61

Figure 1: Type of infertility

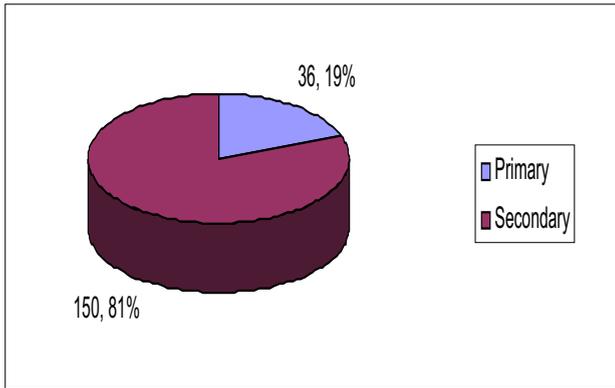


Figure 2: Proportion patients with Galactorrhoea

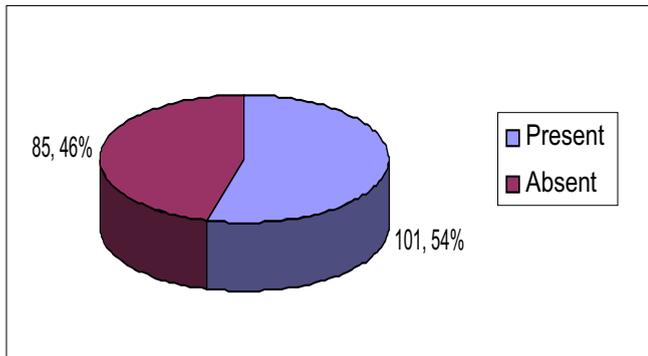


Figure 3: Awareness of galactorrhoea

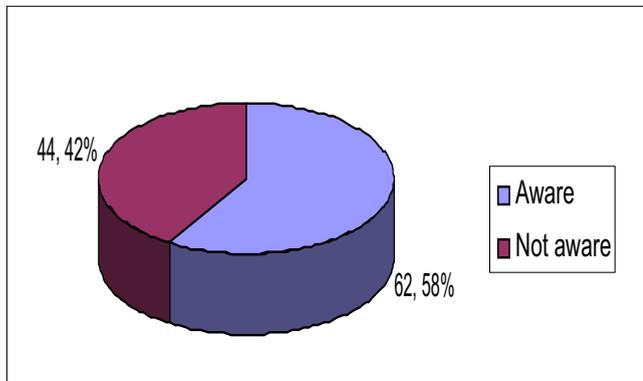
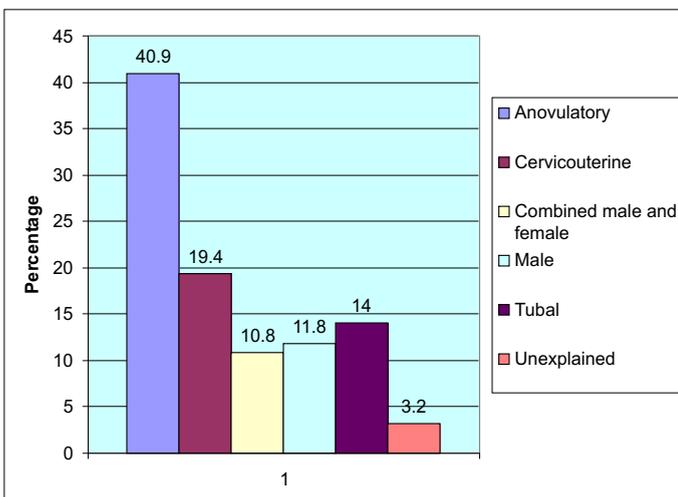


Figure 4: Aetiology of infertility in study population



abnormality found in 16.1% of the study population and in 29.7% of those with anovulation.

**DISCUSSION**

Galactorrhoea and hyperprolactinaemia are common problems encountered in reproductive disorders<sup>18</sup>. The understanding that prolactin hypersecretion not only causes galactorrhoea and amenorrhoea but also gonadal dysfunction and infertility led to the wider use of prolactin estimations. In this study, 19% of the women had primary infertility and the others secondary infertility. The menstrual pattern was abnormal in 37.8% of infertile women with galactorrhoea. Such findings have been reported by other authors also<sup>18,19</sup>.

Galactorrhoea was present in 54% of the total women (44.4% with primary infertility and 56.7% with secondary infertility). This relationship between galactorrhoea and infertility is well established<sup>11</sup>. The incidence of galactorrhoea in hyperprolactinemic women was 76.9%. This figure is higher than is reported in other studies<sup>4,19</sup>. The overall incidence of hyperprolactinaemia in this study is 55.9%. This is comparable to figures from other studies<sup>4,20</sup>. The incidence of hyperprolactinaemia in women with galactorrhoea was 80%. An incidence of 90% has been reported<sup>20</sup>.

Among the causes of infertility in these women, anovulation was the commonest accounting for 40.9% of all cases. This is at variance with figures from other studies in our environment<sup>5,8,9</sup>, but is in keeping with what obtains in Europe<sup>10</sup>. Hyperprolactinaemia was found in 65.7% of these women. Galactorrhoea was the only abnormality found in 29.7% of these women with anovulation and 16.1% of the study population. It may thus be inferred that galactorrhoea contributed 16.1% to the cases of infertility in this study and a co morbidity in another 29%.

Only 58% of the patients were aware they had galactorrhoea while 42% were detected on clinical examination. This underscores the need for routine breast examination during infertility evaluation as this important finding could be missed thus leading to delayed diagnosis and treatment and unending gynaecological consultations further heightening the patient's anxiety. Serum prolactin levels are mandatory in all infertile women especially those with oligomenorrhoea and amenorrhoea. Since the incidence of hyperprolactinaemia is very high in women with galactorrhoea and quite high in women with oligomenorrhoea and anovulation, a search for galactorrhoea and measurement of serum prolactin levels are important screening procedures in all women who are not ovulating normally

**CONCLUSION**

There is a high incidence of galactorrhoea and hyperprolactinaemia in infertile women. Galactorrhoea contributed substantially to the cause of infertility in the study population. Nearly half of the women with galactorrhoea are not aware of it. Thus breast examination should be an integral part of the evaluation of patients with infertility or menstrual abnormalities as galactorrhoea may be a clue to a serious problems. There is a positive correlation between galactorrhoea and hyperprolactinaemia, however, not all women with hyperprolactinaemia had galactorrhoea

and vice-versa.

## REFERENCES

1. Idrisa A, Ojiyi E, Hamidu AU. Hysterosalpingography versus laparoscopy in the evaluation of female infertility in Maiduguri, Nigeria. *Trop J Obstet Gynaecol* 2003;20(1): 20-23.
2. Hummel WP, Kettel LM. Assisted reproductive technology: the state of the ART. *Ann Med* 1997; 29: 207-214.
3. Cates W, Farley TMM, Rowe PJ. Worldwide patterns of infertility: is Africa different? *Lancet* 1985; 14: 596-598.
4. Idrisa A, Kawuwa MB, Habu AS, Adebayo AA. Prolactin levels among infertile women in Maidugiri, Nigeria. *Trop J Obstet Gynaecol* 2003;20(2): 97-100.
5. Idrisa A, Ojiyi E. Pattern of infertility in North-Eastern Nigeria. *Trop J Obstet Gynaecol* 2000;17: 27-29.
6. Adinma JJB. The tubal factor in infertility. *Nig Med J* 1993; 25: 58-61.
7. Megafu U, Okoye IJ, Ofodile A, Affam A. Therapeutic insemination of semen: Ultrasonic monitoring of ovarian follicular growth. *Orient J Med* 1995; 7: 32-37.
8. Okonofua FE. Infertility in Sub-Saharan Africa. In: Okonofua FE, Odunsi K. eds. *Contemporary obstetrics and Gynaecology for developing countries*. Benin City. Women's health and action research centre, 2003: 128-156.
9. Idrisa A. Infertility. In: Kwawukume EY, Emuveyan EE. eds. *Comprehensive Gynaecology in the tropics*. 1st edition. Asante & Hittscher Printing Press Limited, Dansoman. 2005: 333-345.
10. Lashen H. Investigations for infertility. *Current Obstetrics & Gynaecology* 2001;11: 239-244.
11. Kalsum A, Jalali S. Role of hyperprolactinemia in fertility. *Pakistan J Med Res* 2002;41(3):
12. Whitman-Elia GF, Windham NQ. Galactorrhoea may be clue to serious problems Patients deserve a thorough workup. *Postgraduate Medicine* 2000; 107:7.165-71.
13. Peña KS, Rosenfeld JA. Evaluation and Treatment of Galactorrhoea. *American Family Physician* 2001. 63: 9;1763-1770.
14. Kleinberg DL, Noel GL, Frantz AG. Galactorrhea: a study of 235 cases, including 48 with pituitary tumors. *NEnglJMed*. 1977;296(11):589-600.
15. Frantz AG, Wilson JD. Endocrine disorders of the breast. In: Wilson JD, Foster DW, editors. *Williams textbook of endocrinology*. 8th ed. Philadelphia: W.B. Saunders Company, 1992:953-75.
16. Ogedemgbe OK. Anovulation and induction of ovulation. In: Kwawukume EY, Emuveyan EE, eds. *Comprehensive Gynaecology in the tropics*. 1st edition. Asante & Hittscher Printing Press Limited, Dansoman. 2005: 318-324.
17. Crosignani PG. Current treatment issues in female hyperprolactinaemia. *European Journal of Obstetrics & Gynecology and Reproductive Biology* 2006; 125:152-164.
18. Choudhary SD, Goswami A. Hyperprolactinemia and reproductive disorders-a profile from north east. *J Assoc Physicians India* 1995; 43: 617-8.
19. Mishra R, Baveja R, Gupta V, et al. Prolactin level in infertility with menstrual irregularities. *J Obstet Gynecol India* 2002; 52:40-3.
20. Kumkum A, Jasmine K, Shweta G, Ajeshwar NP. Hyperprolactinemia and its correlation with hypothyroidism in infertile women. *J Obstet Gynecol India* 2006;56(1):68-71.