



HYPERPROLACTINEMIA AND ITS CORRELATION WITH HYPOTHYROIDISM IN INFERTILE WOMEN

Gynaecology

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ABSTRACT

OBJECTIVE(S):

To find out the incidence of hyperprolactinemia in female infertility after excluding tubal factor and male factor, and to find its correlation with hypothyroidism..

MATERIAL(S) : One hundred women attending the out patient department of Obstetrics and Gynecology , NMCH ,Patna with complain of infertility were included in the study. The exclusion criteria were tubal factor infertility, congenital anomaly of the urogenital tract and any obvious organic lesion, male factor infertility.

RESULT: In my study 80% of patients had primary infertility and 20% were of secondary infertility. Among primary infertility most of the patient 90% belonged to 20-30 years of age. Among secondary infertility 75% of patients belonged to 25-35 years of age. 22% patients reported hyperprolactinemia, 18 patients were of primary infertility and 4 of secondary infertility. Hypothyroidism was reported in 29% patients, hyperthyroidism in 2% patients and euthyroidism in 69% patients. Among 22 patients of hyperprolactinemia 10 had hypothyroidism and 12 patients had normal thyroid hormone level.

CONCLUSION: Hyperprolactinemia alters the hypothalamopituitary ovarian axis and causes reproductive dysfunction. The relatively high occurrence of hypothyroidism among infertile females and positive correlation between hypothyroidism and hyperprolactinemia emphasizes the importance of estimating both serum prolactin and TSH in infertility.

KEYWORDS

Hyperprolactinemia, Infertility, Hypothyroidism

INTRODUCTION

Infertility is defined as inability to conceive after one year of regular intercourse without contraception. Infertility may be primary or secondary. Infertility affects approximately 15 to 20 % of couples globally. Among the female factors contributing to infertility, aberrant function of Hypothalamic- Pituitaryvarian (HPO) axis is relatively common. Male factor contributes 30%, female factor 35% combination of both 20% and finally unexplained or idiopathic infertility accounts for 15% of infertility. Hyperprolactinemia adversely affects the fertility by disturbing pulsatile secretion of GnRH and hence interfering with ovulation. It may result in menstrual and ovulatory dysfunctions like anovulation, amenorrhea and galactorrhea. Hypothyroidism or hyperthyroidism and even subclinical Thyroid dysfunction have been found to be associated with anovulatory cycles, decreased fecundity, and increased morbidity during pregnancy. Pituitary hormones such as TSH, Prolactin or Growth hormone may act synergistically with Follicle stimulating hormone [FSH] and Lutenizing hormone [LH] to enhance the entry of extra follicles into growth phase. Women with galactorrhea and hyperprolactinemia might have primary hypothyroidism. Hypothyroidism stimulates increased secretion of TRH which stimulates thyrotrophs and lactotrophs, causing increase in the levels of both TSH & prolactin.

This study was conducted to find out the incidence of hyperprolactinemia in female infertility after excluding tubal factor and male factor and to find its association with hypothyroidism.

AIMS AND OBJECTIVES OF THE STUDY

To assess the status of Thyroid hormones and Serum Prolactin levels in infertile women attending the outpatient department of OBGY of NMCH, Patna from October 2017 -October 2018.

A prospective case control study was done in the department of OBGY, NMCH, Patna for a period of 1 year. Patient attending the outpatient department of Obs and Gynae department were recruited into the study (Study group).

Inclusion criteria

1. Diagnosed cases of infertility (both primary and secondary).
2. Age of patients between 20 -40 yrs.

Exclusion criteria.

1. Infertile female with H/O Tuberculosis or any organic lesion (fibroids etc.).
3. Those with pre-existing thyroid problems and

hyperprolactinemia on treatment. Informed consent was obtained from all the participants at the start of the study.

Detailed clinical history regarding age, menarche, menstrual cycles, acne, hirsutism, marital history, drug history, galactorrhea and any visual disturbances taken. Detailed clinical examination regarding weight, height, BMI, breast, abdomen and pelvic examination was done.

Investigations USG abdomen and pelvis, hysterosalpingography, husband's semen analysis, serum TSH and free T3 T4 levels by radio immuno assay (RIA) and serum prolactin levels was send.

With regard to raised prolactin (PRL) levels, as per WHO guidelines, PRL level >25µg/l was considered as hyperprolactinemia.

TABLE -1

TYPES OF INFERTILITY

	Number	Percentage
Primary infertility	80	80%
Secondary infertility	20	20%

In my study 80% of patients were with primary infertility and 20% with secondary infertility

TABLE -2-AGE DISTRIBUTION

INFERTILITY	20-25	25-30	30-35	35-40
PRIMARY INFERTILITY	40	35	4	1
SECONDARY	3	7	8	2
TOTAL	43%	42%	12%	3%

In my study among primary infertility most of the patient 90% belonged to 20-30 years of age. Among secondary infertility 75% of patients belonged to 25-35 years of age.

TABLE-3 -THYROID AND PROLCTIN LEVEL STATUS

	Hypothyroidism	Hyperthyroidism	Euthyroid	Hyperprolactinemia
Primary	24	2	54	18
Secondary	5	0	15	4
Total	29	2	69	22

Among 100 patients 22 patients reported hyperprolactinemia, 18 patients were of primary infertility and 4 of secondary infertility. Among 100 patients in study hypothyroidism was reported in 29% patients (24 of primary infertility and 5 secondary infertility), hyperthyroidism in 2% patients (primary infertility) and euthyroidism

in 69% patients.(54 of primary infertility and 15 of secondary infertility)

Table-4

	Raised prolactin -22		Normal prolactin -78	
	Primary infertility(18)	Secondary infertility-4	Primary infertility	Secondary infertility
Hypothyroidism -29	9	1	15	4
Hyperthyroidism-2	0	0	2	0
Euthyroidism-69	9	3	45	12

In my study 22 patients had elevated serum prolactin level. Among 22 patients 18 were of primary infertility and 4 were of secondary infertility. Among 22 hyperprolactinemic patients 10 were suffering from hypothyroidism(9 of primary infertility and 1 of secondary infertility) ,12 patients had normal thyroid hormone level.(9 of primary infertility and 3 of secondary infertility)

Discussion- Fertility declines with age. Female fertility is at its peak between the ages 18 and 24 years, while, it begins to decline after age 25 and somewhat at greater rate after age 35. Hypothyroidism is associated at times with hyperprolactinemia which adversely affects fertility potential by impairing GnRH pulsatility and thereby ovarian function. Therefore, every infertile female should be investigated for Thyroid and Prolactin irregularities. Present study is attempted to find a correlation between Thyroid status and that of Prolactin in infertile women .

In my study 80% of patients had primary infertility and 20% were of secondary infertility.

In my study raised prolactin was reported in 22% of patients. Nalluswamy et al (1)In their study reported 24.67% prevalence of hyperprolactinemia which is very close to my study. In my study 22.5% of patients of primary infertility had hyperprolactinemia and 20% of secondary infertility had raised prolactin level. In study by Umakant Valvekar et al (2) 40% of primary infertile women and about 49% of secondary infertile women had higher serum prolactin levels .Nalluswamy et al reported Elevated serum prolactin level in 25.5% (61/239) of primary infertility and 21.31% (13/61) of secondary infertility females(3)

81.8% of hyperprolactinemic patients belonged to primary infertility and 18.2% belonged to secondary infertility .Avasthi kumkum et al(4) hyperprolactinemia in 49% patients of primary infertility and 40% in secondary infertility. Kalki et al (5) reported 79.4% hyperprolactinemia were in primary infertility and 20.6% were in secondary infertility group. This value is very close to my study.

Nalluswamy et al(6) reported Presence of hypothyroidism in hyperprolactinemia 25.5% . in my study prevalence of hypothyroidism in hyperprolactinemia was 45.45%. (10/22). Association between hypothyroidism and hyperprolactinemia In Chowdhury and Goswami et al (7) study 16.6%, Singh et al (8) study 57%, Binita Goswami et al (9) study 46.1% (total 160 patients).

CONCLUSION -

Hyperprolactinemia is one of the most common endocrinological disorders of female infertility and it is often associated with hypothyroidism. Mild hyperprolactinemia can cause infertility even with regular menstruation So all infertile women should be offered serum prolactin and Thyroid Stimulating Hormone (TSH) estimation at an early stage of infertility. In hypothyroid infertile women if associated with hyperprolactinemia, the first treatment should be to correct the hypothyroidism and maintain TSH at lower limit.

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