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Hormonal Factors and Infertility

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Abstract

Introduction: Hyperprolactinaemia and hypothyroidism is successfully managed with simple measures e.g. medicines, therefore this study was planned to find out about patients with higher level of prolactin and TSH in the infertility group.

Methods: This was a prospective observational study conducted in the department of Obstetrics and Gynecology, Sir Sunder Lal Hospital, Banaras Hindu University, Varanasi. The study period was from March 2012-February 2016. Total 98 female patients of infertility were included.

Results: The range of serum prolactin in controls was 4.3-22 ng/ml while in cases it was 8.0-198 ng/ml (table 2). Serum TSH in controls was 1.0-4.75 mIU/ml while in cases was 3.7-39 mIU/ml. Galactorrhoea was found in (57.14%) cases and hypothyroidism with hyperprolactinaemia was found in (48.97%) cases.

Conclusion: Based on this small study showing prevalence of hyperprolactinaemia and hypothyroidism, it could be inferred that these test form the essential component of infertility investigation.

Keywords: Infertility; Hyperprolactinaemia; Hypothyroidism

Introduction

Every Gynecologist is faced with a situation of management of infertile patient or infertile couple. Infertility stresses out couples; it is also a health problem that is affected by social conditions.

There are various causes of infertility, male factor, tubal, ovarian and unexplained. Hormonal disturbance significantly contributes to infertility, apart from female hormones like estrogen, progesterone, LH, and FSH, prolactin and TSH has a greater role to play. Both TSH (elevated in Hypothyroidism) and Prolactin (elevated in Hyperprolactinaemia) action Hypothalamus and Pituitary level and influence level of GNRH.

Hyperprolactinaemia and hypothyroidism is successfully managed with simple measures e.g. medicines, therefore this study was planned to find out about patients with higher level of prolactin and TSH in the infertility group.

Materials and Methods

This was a prospective observational study conducted in the department of Obstetrics and Gynecology, Sir Sunder Lal Hospital, Banaras Hindu University, Varanasi. The study period was from March 2012-February 2016. Total 98 female patients of infertility were included. These women were investigated for infertility as per hospital protocol and data of serum prolactin and TSH was collected in a Performa. Other socio-demographic details were also noted.

38 fertile females were included as control. The inclusion criteria were young infertile patients of 18-35 years. Those patients who were infertile due to other causes were excluded.

Serum TSH and serum prolactin was measured in both groups. The normal range of Prolactin is 2-22 ng/ml for our laboratory and TSH 0.5-5 mIU/ml.

Results

In the age group of 18-25 years there were (60.34%) cases of primary infertility and (39.65%) cases of secondary infertility, while in the age group of 26-35 years there were 30% cases of primary infertility and (70%) cases of secondary infertility (Table 1).

Age Groups	Primary Infertility	Secondary Infertility
18-25 years (N=58)	35 (35/58=60.34%)	23 (23/58=39.65%)
26-35 years (N=40)	12 (12/40=30%)	28 (28/40=70%)

Table 1: Age and infertility.

The range of serum prolactin in controls was 4.3-22 ng/ml while in cases it was 8.0-198 ng/ml (Table 2). Serum TSH in controls was 1.0-4.75 mIU/ml while in cases was 3.7-39mIU/ml (Table 3).

	Range of Prolactin ng/ml
Cases (N=98)	8.0-198
Controls (N=38)	4.3-22

Table 2: Serum Prolactin.

	Range of TSH mIU/ml
Cases (N=98)	3.7-39
Controls (N=38)	1.0-4.75

Table 3: Serum TSH.

Galactorrhoea was found in (57.14%) cases and hypothyroidism with hyperprolactinaemia was found in (48.97%) cases (Table 4).

Galactorrhoea	56(56/98)= 57.14%
Hypothyroidism+ Hyperprolactinaemia	48 (48/98)= 48.97%

Table 4: Hyperprolactinaemia (n=98).

Discussion and conclusion

Infertile women presents with menstrual complaints, ovulatory dysfunction, and Galactorrhoea. Hypothyroidism and hyperprolactinaemia is commonly found in these patients [1]. Galactorrhoea was found in (57.14%) cases which is much higher than (20%) in a study by Mishra et al. [2]. Hypothyroidism with hyperprolactinaemia was found in (48.97%) cases, similar findings were observed in a study by Indu et al [3].

Based on this small study showing prevalence of hyperprolactinaemia and hypothyroidism, it could be inferred that these test form the essential component of infertility investigation. Treating these conditions doesn't require complicated medical or surgical procedures except in cases of hyperprolactinaemia due to macro adenoma, which requires surgery. Most of the times they require medicines, which are readily available.

Dopamine agonist like Cabergolin and bromocriptine form the mainstay of treatment for hyperprolactinaemia and Thyroxin for hypothyroidism. Patients should be informed that if medicines are taken regularly then these conditions respond very well.

References

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