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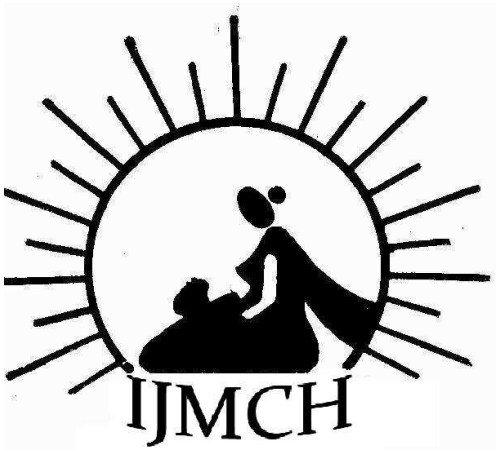

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ABSTRACT

Objective: The aim of our study was to determine the percentage of female infertile patients seeking treatment for infertility having Hyperprolactinaemia and to find out an association between the two i.e. Hyperprolactinaemia and infertility.

Study design: A hospital based cross-sectional study was performed in infertile patients attending the Out patient department of Obstetrics and Gynaecology of M.M. Institute of medical sciences and research, Mullana [Ambala], in which all other causes of infertility like tubal block, uterine fibroid and male factor infertility were ruled out. 75 patients were selected in this study and serum prolactin was assayed using ELISA competitive enzyme immunoassay method.

Participants: Infertile patients attending the Gynae OPD of MM Institute of Medical Sciences and Research, Mullana [Ambala], from January 2009 to January 2010, in which all other causes of infertility were ruled out. Total number of patients attending the Gynae OPD during this period were 136,000, out of these 16,840 were seeking treatment for infertility. 75 patients out of these infertile patients had normal semen analysis, no pelvic pathology like uterine fibroid, tubal block, and so were selected for the study.

Methodology: 75 infertile patients were selected and serum prolactin level was assayed using ELISA competitive enzyme immunoassay method.

Result: Eleven patients [15%] were suffering from Hyperprolactinaemia. Two cases of primary infertility were treated with Bromocriptine and their normal menstrual pattern was restored. One of these two patients conceived within 6 months.

Keywords: ***Hyperprolactinaemia, Infertility*.**

INTRODUCTION:

In reproductive medicine, the term 'infertility' is used for women [or couple] who have had unprotected regular intercourse for > 1 year but failed to achieve pregnancy.[1]

Prolactin is a hormone secreted by Anterior Pituitary. It is found in both men and women and is released at various times throughout the day and night. Prolactin stimulates and sustains lactation in postpartum mammals. [2]

Secretion of Prolactin from anterior pituitary is under hypothalamic control. Primary control of Prolactin secretion is inhibitory rather than stimulatory and Dopamine is the principal prolactin inhibitory factor and TRH is a potent Prolactin releasing factor. Release of prolactin is episodic and varies predictably during the day with lowest concentration during midday and highest concentration shortly after onset of deep sleep.

Hyperprolactinaemia is the most common hypothalamic pituitary disorder encountered in clinical endocrinology. [3] It may be seen in women who have only subtle alterations of fertility such as: (a) anovulation with or without menstrual irregularity (b) amenorrhea and galactorrhoea or (c) galactorrhoea alone. It is diagnosed when serum prolactin level is more than 19 ng/ ml.

Hyperprolactinaemia affects fertilization and interferes with human reproductive physiology and adversely affects pregnancy outcome. Thus it plays an important role in reproductive dysfunction. Data regarding the relationship between Hyperprolactinaemia and infertility in females is scarce and relationship between particular causes has not been analyzed.

MATERIALS AND METHOD:

Total no. of patients visiting the Gynae OPD of MM Institute of Medical Science and Research, Mullana [Ambala], during the period January 2009 to January 2010 were 136,000, out of these 16,840 were seeking treatment for infertility. 75 out of these infertile patients, who had normal semen analysis, no pelvic pathology like uterine fibroid and tubal block, were selected for this study.

Samples were collected 4 hrs after patient was awakened [because prolactin concentration rises during sleep and peaks in early morning hours], and serum prolactin level was estimated using ELISA competitive enzyme immunoassay method as described by Sterling L. [4]

OBSERVATION/ RESULTS:

Out of the 75 subjects between age group 17-35 yrs, 11 patients (15% approx) had Hyperprolactinaemia associated with infertility.

Table I: Spectrum of clinical presentation in these 75 patients was:

Diagnosis	Number (%)	Hyperprolactinaemia (%)
Primary infertility	23 (30.6)	6 (26%)
Secondary infertility	18 (24)	5 (27%)
Menstrual disorders	32 (42.6)	
Lactational Hyperprolactinaemia	2 (2.7)	

Primary infertility- 23, out of which 6 (26 %) were having Hyperprolactinaemia.

Secondary infertility- 18, out of which 5 (27%) were having Hyperprolactinaemia.

Menstrual Disorders- 32 (40%)

Lactational Hyperprolactinaemia - 2

Two cases of Primary Infertility were treated with Bromocriptine. In both these cases normal menstrual pattern was restored and one conceived within 6 months.

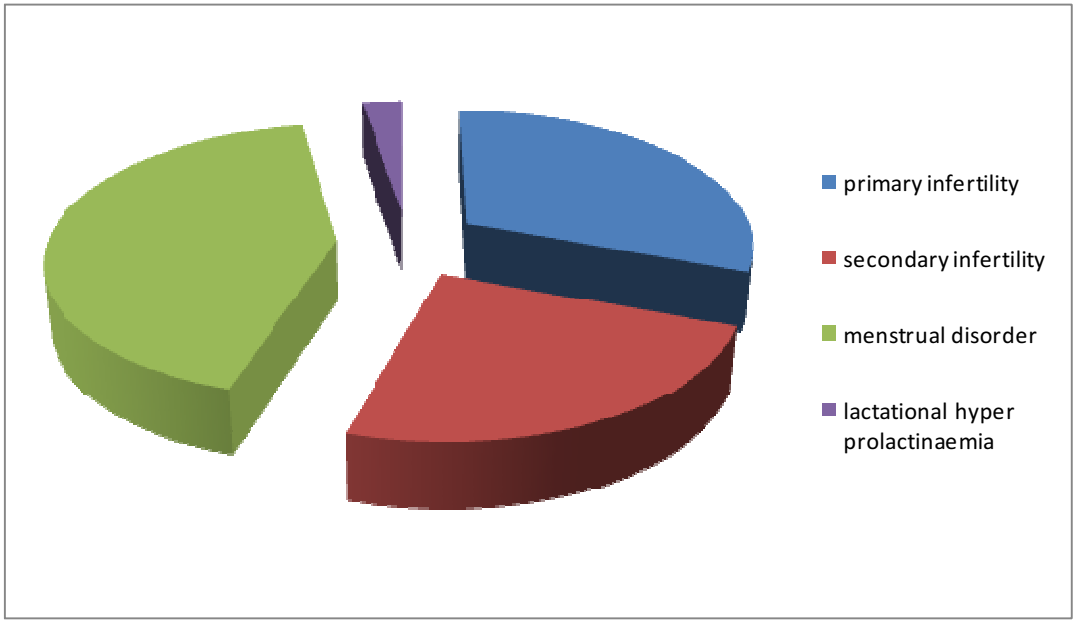

Fig. I: SPECTRUM OF CLINICAL PRESENTATION

DISCUSSION

In young women Hyperprolactinaemia is one of the most common endocrine disorders of Hypothalamic-Pituitary axis. The prevalence of Hyperprolactinaemia varies in different patient population from 0.4% in an unselected normal population to up to 17% of women with reproductive disorders.[5] The consequence is that an elevated serum Prolactin from any cause results in anovulation with amenorrhea in women but the degree of hypogonadism is frequently proportionate to the size of increase in prolactin levels. In case of marked hyperprolactinaemia, amenorrhea and galactorrhoea are frequently observed, while mild hyperprolactinaemia may be associated with a short luteal phase and anovulatory Infertility. [6]

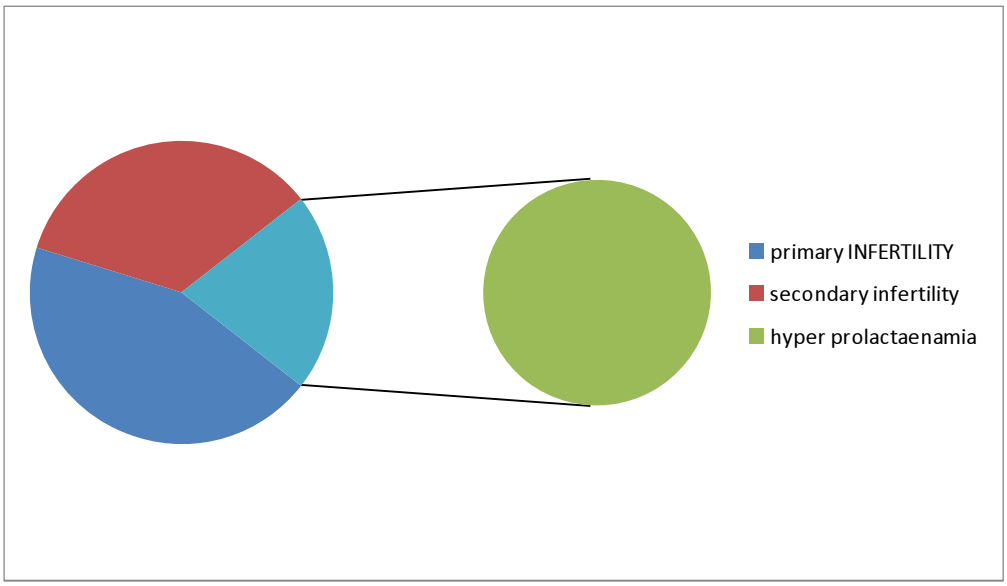

Figure II: HYPERPROLACTINAEMIA & INFERTILITY

Chronic anovulation is probably the major cause of human infertility and is associated with four distinct endocrine conditions - Hyperprolactinaemic anovulation, hypogonadotropic anovulation, normogonadotropic anovulation, and microprolactinoma. [7] Prolactin overfunction causes infertility by altering the Hypothalamic - pituitary - ovarian axis. Increased TRH levels due to Hypothyroidism are often associated with increased prolactin levels and a delayed LH response to LHRH. [8] Treatment of Hyperprolactinaemia with Bromocriptine restores a normal serum prolactin level and normal menstrual pattern. [9]

CONCLUSION: We conclude that chronic anovulation is one of the major causes of human infertility. Further, high incidence of hyperprolactinaemia is seen in infertile women, which may be due to ovarian dysfunction mainly anovulation. [10] Thus anovulatory cycles and luteal phase dysfunction contribute to Infertility and may accompany Hyperprolactinaemia .

Therefore all infertile women should be screened for serum prolactin level besides screening for TSH, FSH and LH, and treated accordingly.

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