

**Research Article****Hyperprolactinemia in infertile women****<sup>1</sup>Muhammad Fawad Afzal, <sup>1</sup>Sammar Saeed****and <sup>2</sup>Muhammad Usman Youns**<sup>1</sup>DHQ Hospital, Faisalabad<sup>2</sup>Sharif Medical City Hospita,

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**ABSTRACT****OBJECTIVE:** The objective of the study is to:

- determine the frequency of hyperprolactinemia in infertile women coming to a tertiary care hospital

**SETTING:** The study was conducted in Outpatients Department of Obstetrics & Gynaecology, DHQ Hospital, Faisalabad.**STUDY DESIGN:** Descriptive Cross Sectional**METHODOLOGY:** A total of 75 cases fulfilling the inclusion/exclusion criteria were enrolled from Obstetrical OPD DHQ Hospital, Rawalpindi. We obtained an informed consent of the patients before including their data in the study. A detailed history of the participants was taken. Blood sample was obtained without excessive venipuncture stress and sent to the hospital laboratory for evaluation of prolactin levels. After obtaining these hospital reports, the frequency of hyperprolactinemia in women with infertility was recorded.**RESULTS:** In our study, out of 75 cases, 68% (n=51) were between 20-30 years of age whereas 32% (n=24) were between 31-40 years of age, mean $\pm$ sd was 28.16 $\pm$ 4.37 years, mean prolactin level was calculated as 23.16 $\pm$ 3.65 (ng/ml). Frequency of hyperprolactinemia was recorded in 28% (n=21).**CONCLUSION:**

- We concluded that the frequency of hyperprolactinemia is higher in infertile women coming to a tertiary care hospital, however, it is necessary to evaluate hyperprolactinemia in these cases it will be helpful for obstetricians in the management of infertile women.

**KEYWORDS:** Infertility, hyperpolactinemia, frequency**INTRODUCTION**

Infertility is a disease or a condition of reproductive system that interferes with the ability to conceive. Female infertility accounts for 37% of all infertile couples & among them most are due to ovulatory disorder, and is often associated with dysregulation of hormonal network.<sup>1</sup> In Pakistan, the majority of females are responsible for unproductiveness up to 41.1%.<sup>2</sup>

There are number of problems associated with hormonal disorders of female reproductive system. All these disturbances result from aberrant dysfunction of hypothalamic-pituitary-ovarian axis. These relatively common disorders

often lead to infertility constituting a major psychological burden.<sup>3</sup>

Hyperprolactinemia is the most prevalent endocrine disorder in hypothalamic- pituitary axis especially among reproductive age women affecting about one-third of infertile women.<sup>4</sup> The pronounced prolactin elevation after the orgasm has been considered beneficial for decidualization and implantation.<sup>5</sup> A transient elevation in serum prolactin can be produced by the venepuncture stress while mildly elevated hyperprolactinemia is frequently seen in PCOS patients due to the raised circulating estrogen level.<sup>6</sup>

A recent study conducted at Serbia recorded that hyperprolactinaemia as the only reason for anovulation and infertility was diagnosed in 55.12%,<sup>7</sup> they included 104 cases. Another study conducted at North India recorded these findings in 13.7% of the cases.<sup>8</sup>

#### HYPERPROLACTINEMIA:

- Serum prolactin level more than 25 “ng/ml” in infertile women was considered as hyperprolactinemia. It was determined through hospital laboratory reports.

#### METHODOLOGY:

We enrolled all diagnosed cases of infertility (It was those who having unprotected intercourse for 12-18 months but no conception, whether primary or secondary) between 20-40 years of age whereas male factor infertility, female factors-tubal factor, urogenital tract anomalies and obvious organic lesion in pelvis, history of thyroid disease/thyroid surgery/thyroid medication, and women under treatment of hyperprolactinemia were excluded from the study. A detailed history of the participants was taken. Blood sample was obtained without excessive venipuncture stress and sent to the hospital laboratory for evaluation of prolactin levels. After obtaining these hospital reports, the frequency of hyperprolactinemia in women with infertility was recorded, all this information was recorded by the researcher on a pre-designed. The data was analyzed in SPSS version for 19.0. Mean and standard deviation was calculated for quantitative variables i.e. age, BMI, prolactin levels and duration of infertility. Frequencies and percentages were calculated for qualitative variable for hyperprolactinemia, type of infertility (Primary/Secondary).

#### RESULTS

A total of 75 cases fulfilling the inclusion/exclusion criteria were enrolled to determine the frequency of hyperprolactinemia in infertile women coming to a tertiary care hospital.

Age distribution of the patients shows that 68%(n=51) were between 20-30 years of age whereas 32%(n=24) were between 31-40 years

of age, mean±sd was 28.16±4.37 years. (Table No. 1)

Mean weight(kgs) was calculated as 66.94±8.63 kgs, height was 57.58±6.51(inches) and BMI was 27.88±2.44. (Table No. 2)

Mean duration of infertility was 3.85±1.26 years. (Table No. 3)

Primary infertility was recorded in 50.67%(n=38) whereas 49.33%(n=37) had secondary infertility. (Table No. 4)

Mean prolactin level was calculated as 23.16±3.65(ng/ml). (Table No.5)

Frequency of hyperprolactinemia was recorded in 28%(n=21) whereas 72%(n=54) had no findings of the morbidity. (Table No. 6)

**Table No. 1: Age Distribution (n=75)**

Age(in years)	No. of patients	%
20-30	51	68
31-40	24	32
<b>Total</b>	<b>75</b>	<b>100</b>
<b>Mean±SD</b>	<b>28.16±4.37</b>	

**TABLE No. 2: Mean Weight, Height And BMI (n=75)**

BMI	Mean	SD
Weight(kgs)	66.94	8.63
Height(inches)	57.58	6.51
BMI	27.88	2.44

**TABLE No. 3: Mean Duration Of Infertility (n=75)**

Duration(years)	Mean	SD
	3.85	1.26

**TABLE No. 4: Type Of Infertility (n=75)**

Type of infertility	No. of patients	%
Primary	38	50.67
Secondary	37	49.33
<b>Total</b>	<b>75</b>	<b>100</b>

**TABLE No. 5: Mean Prolactin Level (n=75)**

Prolactin(ng/ml)	Mean	SD
	23.16	3.65

**TABLE No. 6: Frequency of Hyperprolactinemia (n=75)**

Hyperprolactinemia	No. of patients	%
Yes	21	28
No	54	72
<b>Total</b>	<b>75</b>	<b>100</b>

#### DISCUSSION

This study was planned with the view that the two recent studies are significantly different and

reporting variant results which create ambiguity for the obstetricians while managing infertile women. However, planned this study in our population, as the previous two studies conducted in different population showing different results and we assume that our population may have different magnitude, however, it is necessary to conduct another study in our local population which may be helpful for obstetricians in the management of infertile women.

In our study, out of 75 cases, 68%(n=51) were between 20-30 years of age whereas 32%(n=24) were between 31-40 years of age, mean $\pm$ sd was 28.16 $\pm$ 4.37 years, mean prolactin level was calculated as 23.16 $\pm$ 3.65(ng/ml). Frequency of hyperprolactinemia was recorded in 28%(n=21). We compared our results with a recent study conducted at Serbia recorded that hyperprolactinaemia as the only reason for anovulation and infertility was diagnosed in 55.12%,<sup>7</sup> which is higher than our study. Another study conducted at North India recorded these findings in 13.7% of the cases,<sup>8</sup> these findings are lower than our study.

Another study<sup>9</sup> by Saranya Nallusamy and others prevalence of hyperprolactinemia that is serum prolactin > 25 $\mu$ g/L was 24.67%. The mean serum prolactin level in hyperprolactinemic females was 84.83 $\mu$ g/L. Incidence of hypothyroidism in hyperprolactinemia was 25.68%. Obesity (BMI >25) was present in 26% Galactorrhea was present in 20.27% females. Obesity and galactorrhea had strong positive correlation with hyperprolactinemia. Among the 300 females, 239 (79.6 %) had primary infertility and 61(20.4%) had secondary infertility.

Greer et al<sup>10</sup> reported a lower prevalence of 15% among anovulatory women. This may be because high level of relatively inactive PRL in the absence of a tumor can be due to the circulation of macromolecules of PRL by anti-PRL.<sup>11-12</sup>

From the overall prevalence of 28% of hyperprolactinemia among infertile women with symptoms of menstrual abnormalities and/or galactorrhea, it implies that hyperprolactinemia may be a major etiological contributor to

infertility in these groups of patient and therefore merits routine serum PRL assay. However, since galactorrhea was found to be a better clinical indicator of hyperprolactinemia, it may serve as a guide to commence empirical treatment with dopamine agonists with proven efficacy, especially where assay of serum PRL is a challenge in low resource setting.

## CONCLUSION

- We concluded that the frequency of hyperprolactinemia is higher in infertile women coming to a tertiary care hospital, however, it is necessary to evaluate hyperprolactinemia in these cases it will be helpful for obstetricians in the management of infertile women.

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