

Incidence of Hyperprolactinemia in Infertile Women

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Abstract : A prospective study was undertaken to determine the incidence of hyperprolactinemia in a group of infertile women, and to determine the association with abnormal menstrual function and presence or absence of galactorrhea. Among 100 infertile patients, 10(10%) had elevated levels of serum prolactin. 2 (2.0%) patients with hyperprolactinemia had menstrual irregularities and galactorrhea. With this study we found that hyperprolactinemia is a common finding in the infertile population, when they present with menstrual irregularities and galactorrhea.

Keywords: galactorrhea, infertility,, irregular menstruation, prolactin

I. Introduction

A. Hyperprolactinemia is defined as the elevation of prolactin levels above 25ng/ml in women of child bearing age group and above 20ng/ml in men and postmenopausal women [1]

Hyperprolactinemia is mainly due to enlargement of the pituitary gland or due to a pituitary tumour or can occur without any obvious reason(2)

Hyperprolactinemia is also frequently associated with secondary hypogonadotropic hypogonadism. This gonadotropic deficiency has been proposed to result from direct suppression of prolactin (PRL) on gonadotrophin-releasing hormone (GnRH) release, but evidence supporting this mechanism has never been provided. PRL is synthesized and secreted by the lactotrope cells of the pituitary, and high levels of circulating PRL are mainly caused by lactotroph adenomas, which account for approximately 40% of all pituitary tumors. Pulsatile GnRH replacement can reverse hypogonadotropic hypogonadism and infertility induced by hyperprolactinemia in women as well as men (3,4), suggesting that PRL excess in humans affects hypothalamic release of GnRH rather than directly affecting pituitary or gonad function.

II. Effects Of Hyperprolactinemia

Increased serum prolactin levels decreases the secretion of gonadotropin-releasing hormone (GnRH) in the hypothalamus, thus causing decreased secretion of LH and follicle-stimulating hormone (FSH) in the pituitary gland leading to decreased production of oestrogen and progesterone by the ovaries. (6)

Decreased hormone production in the ovaries leads to disruption of the normal follicular development causing atresia of the dominant follicle. (7)

Etiology:

Physiological increase in prolactin occurs during pregnancy; postpartum breastfeeding and stress. Prolactinomas account for 25 to 30% of functioning pituitary tumours and are the most frequent causes of chronic hyperprolactinemia. Other causes are non hypothalamic pituitary disease, polycystic ovarian syndrome, primary hypothyroidism, liver disease and chronic renal disease. 40% of patients of hypothyroidism have mild elevation of prolactin level. Some drugs like metoclopramide, Phentothiazines, oestrogen and cimetidine can cause hyperprolactinemia. (8)

Clinical Features:

Often occur without symptoms.

Presenting features	Incidence
Infertility (9)	5%
Galactorrhoea (10)	20%
Menstrual irregularities (10)	30%
Abortion (11)	17%
Decreased libido, hirsutism, acne	
Pituitary adenomas- headache, visual field defects, external ophthalmoplegia (12)	12%
Progressive trabecular osteopenia- generalized body pain, low back ache. (13)	minimal

III. Method:

One hundred infertile women aged 18-35 years who suffered from infertility were selected from the infertility clinic for this study.

Prolactin level is measured in these women after obtaining history, short examination and informed consent.

The lab reference value for serum prolactin ranges from 2.8 to 29.2ng/ml.

IV. Results And Discussion:

Of 100 infertile women, 10(10%) had elevated levels of serum prolactin, 2 (2.0%) patients with hyperprolactinemia had menstrual irregularities and galactorrhea. With this study we found that hyperprolactinemia is a common finding in the infertile population more in the age group of 29-35 years when they present with menstrual irregularities and galactorrhea

Pt ID	AGE [In yrs]	DURATION OF INFERTILITY	TYPE OF INFERTILITY	PROLACTIN VALUE (2.8-29.2 ng/ml)	SYMPTOMS
1.	21	2 years	Primary	14.7	—
2.	21	2 years	Primary	13.3	—
3.	22	3 years	Secondary	37.8	—
4.	22	2 years	Secondary	10.3	—
5.	22	2 years	Primary	13.0	—
6.	22	4 years	Primary	6.9	—
7.	23	2 years	Primary	8.8	—
8.	23	3 years	Primary	31.4	—
9.	24	5 years	Primary	15.2	—
10.	24	4 years	Primary	19.1	—
11.	24	2 years	Primary	24.5	—
12.	25	3 years	Primary	19.1	—
13.	25	3 years	Primary	9.9	—
14.	25	3 years	Primary	24.7	—
15.	25	2 years	Primary	11.1	—
16.	25	5 years	Primary	10.6	—
17.	25	2 years	Primary	12.9	—
18.	25	5 years	Secondary	8.6	—
19.	25	2 years	Primary	9.6	—
20.	26	1 year	Primary	20.5	—
21.	26	6 years	Secondary	25.1	—
22.	26	3 years	Primary	17.2	—
23.	26	4 years	Primary	26.4	—
24.	26	2 years	Primary	16.7	—
25.	27	5 years	Secondary	18.2	—
26.	27	9 years	Primary	43.8	—
27.	27	4 years	Primary	11.5	—
28.	27	2 years	Primary	13.3	—

29.	27	2 years	Primary	16.8	—
30.	28	7 years	Primary	6.7	—
31.	28	10 years	Primary	10.7	—
32.	28	2 years	primary	8.1	—
33.	28	1 year	Primary	1.6	—
34.	28	5 years	Primary	13.3	—
35.	28	6 years	Secondary	4.2	—
36.	28	5 years	Primary	11.2	—
37.	29	2 years	Secondary	37.6	—
38.	29	2 years	Primary	38.4	—
39.	29	4 years	Primary	22.8	—
40.	29	6 years	Secondary	15.9	—
41.	29	7 years	Primary	28.3	—

42.	29	2 years	Secondary	11.7	--
43.	29	1 year	Secondary	11.2	--
44.	29	4 years	Primary	16.0	--
45.	29	8 years	Primary	20.5	--
46.	29	9 years	Primary	23.2	--
47.	29	3 years	Primary	22.9	--
48.	30	10 years	primary	17.6	--
49.	30	8 years	Primary	4.1	--
50.	30	8 years	Secondary	13.2	--
51.	30	6 years	Primary	13.1	--
52.	30	4 years	Primary	15.3	--
53.	30	2 years	Primary	6.6	--
54.	30	2 years	Secondary	11.6	--
55.	31	9 years	Secondary	15.5	--
56.	31	4 years	Primary	32.2	Galactorrhoea +
57.	31	9 years	Primary	9.8	--
58.	31	3 years	Primary	14.9	--
59.	31	8 years	Secondary	15.2	--
60.	31	6 years	Secondary	21.7	--
61.	32	8 years	Primary	10.0	--
62.	32	8 years	Secondary	14.7	--
63.	32	12 years	Primary	8.3	--
64.	32	5 years	Primary	16.8	--
65.	32	8 years	Primary	14.6	--
66.	32	4 years	Primary	41.8	--
67.	32	13 years	Primary	7.5	--
68.	32	3 years	primary	15.8	--
69.	32	8 years	Primary	16.1	--
70.	32	4 years	Primary	21.7	--
71.	32	6 years	Primary	15.7	--
72.	33	3 years	Primary	21.1	--
73.	33	4 years	Primary	29.4	Menstrual irregularity
74.	33	8 years	Secondary	7.4	--
75.	33	4 years	Primary	9.8	--
76.	33	8 years	Primary	21.3	--
77.	34	7 years	Primary	12.7	--
78.	34	5 years	Primary	11.4	--
79.	34	7 years	Secondary	8.3	--
80.	34	2 years	Primary	5.3	--
81.	34	7 years	Secondary	7.5	--
82.	34	10 years	Primary	13.7	--
83.	34	6 years	Primary	11.8	--
84.	35	4 years	Secondary	8.2	--
85.	35	2 years	Primary	10.1	--
86.	35	5 years	Primary	5.2	--
87.	35	7 years	Primary	18.2	--
88.	35	15 years	primary	10.0	--
89.	35	6 years	Secondary	8.5	--
90.	35	10 years	Secondary	9.5	--
91.	35	4 years	Primary	8.3	--
92.	35	10 years	Primary	35.3	--
93.	35	3 years	Primary	25.5	--
94.	35	11 years	Primary	29.8	--
95.	35	8 years	Secondary	18.9	--
96.	35	10 years	Secondary	24.9	--
97.	35	3 years	Primary	8.8	--
98.	35	4 years	Primary	22.8	--
99.	35	5 years	Primary	12.8	--
100.	35	3 years	Primary	10.2	--

V. Conclusion:

Hyperprolactinemia is a common endocrine disorder in women presenting with amenorrhea and infertility and hence should be ruled out in all cases of amenorrhea and infertility as restoration of ovulation is seen in 90% of cases if cause of hyperprolactinemia is identified and treated.(14).

Therefore whenever women presents with infertility, serum prolactin levels should be included in the routine protocol .

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