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A Study of 25 Cases of Hyperprolactinaemia with Pituitary Disorders

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ABSTRACT:**Introduction:**Hyperprolactinaemia and pituitary disorders can present with amenorrhoea, oligomenorrhoea, headache, infertility, visual disturbances, galactorrhoea, osteoporosis and neuropsychiatric manifestations. Prolactinoma is the most common cause of hyperprolactinaemia in women. Hyperprolactinaemia and prolactinomas can be managed medically by administering dopamine agonists like bromocriptine or cabergoline or by surgical treatment such trans sphenoidal resection of pituitary adenoma or stereotactic radiosurgery.
Materials and Methods: This is an observational study of the clinical course of 25 patients of hyperprolactinaemia with pituitary disorder.
Results: In our study, all 25 (100 %) patients recovered in terms of normalisation of prolactin levels and resolution of galactorrhoea. Most of the patients responded well to medical line of treatment but 2 patients had to undergo surgical management.
Conclusion: Most cases of hyperprolactinaemia and pituitary disorder respond well to medical line of therapy.
KEYWORDS: Hyperprolactinaemia, Pituitary disorder, Prolactinoma, Bromocriptine, Cabergolin, Galactorrhoea.

I. INTRODUCTION

Prolactin is a peptide hormone secreted by the lactotroph cells of the adenohypophysis (anterior lobe) of the pituitary gland. Hyperprolactinaemia occurs in around 0.4 % of the unselected adult population and as high as 9 % to 17 % in women with reproductive diseases [1]. Hyperprolactinaemia can be caused by several conditions such as pituitary diseases, consumption of certain medications like tranquilisers, antidepressants and proton pump inhibitors, liver diseases, kidney diseases, pregnancy, lactation and hypothyroidism. Prolactinomas are the commonest cause of hyperprolactinaemia and account for 25 % to 30 % of all pituitary tumours [2], [6]. Prolactinomas are generally benign and may be classified into microadenomas (size < 10 mm) or macroadenomas (size > 10 mm). the treatment of prolactinomas is indicated because of the clinical consequences of infertility gonadal dysfunction, osteoporosis, visual disturbances and neuropsychiatric problems [6]. The first line of therapy of hyperprolactinaemia is medical management in the form of dopamine agonists (bromocriptine or cabergoline) [3] and the remaining patients may require trans sphenoidal surgery or stereotactic radiosurgery [5], [6]. Rarely, pituitary apoplexy can present in the form of an endocrine emergency with severe headache, vomiting, loss of vision or diplopia, altered sensorium, hypoglycaemia, hypotension or neurological deficit due to bleeding in the pituitary gland. Though pituitary apoplexy is a life threatening condition, most cases can be managed conservatively using steroids and dopamine agonists but in some refractory or severe cases, surgical intervention may be required [1].

In patients with hyperprolactinaemia or prolactinomas, fertility is often restored after medication with dopamine agonists but the medication has to be stopped immediately after confirmation of pregnancy in order to minimise the foetal in – utero exposure to dopamine agonists. The outcome of pregnancy in such cases may often include congenital malformations of the foetus, spontaneous abortions or preterm labour, especially in cases of prolonged in – utero exposure of the foetus to dopamine agonists [5].

There is a paucity of data on the clinical outcome of hyperprolactinaemia and pituitary disorders in the Indian population. The present study is an observational study of the clinical course of 25 cases of hyperprolactinaemia with pituitary disorders who presented in our reproductive endocrinology OPD during the year 2016 to 2020.

II. AIMS AND OBJECTIVES

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To evaluate the clinical course of hyperprolactinaemia and pituitary disorders in terms of symptomatology, serum prolactin levels, type of pituitary disorder. Treatment modalities and outcome of treatment including outcome of pregnancy.

III. MATERIAL AND METHODS

This is an observational study of 25 patients of hyperprolactinaemia with pituitary disorder. Detailed history taking, clinical examination, investigation and counselling of the patients was done taking into consideration the inclusion and exclusion criteria of this study. The patients were evaluated in accordance with their clinical presentation, treatment and post treatment outcome including outcome of pregnancy.

Inclusion criteria:

1. Patients with serum prolactin (pooled sample) levels > 50 ng / ml
2. Patients who showed pathology of the pituitary gland on MRI

Exclusion criteria:

1. Pregnant women
2. Lactating mothers
3. Patients on medication which increase serum prolactin levels
4. Patients with liver disease
5. Patients with kidney disease
6. Patients with history of convulsions or head injury
7. Patients with injury of the anterior chest wall
8. Patients with hypothyroidism

IV. RESULTS

1. AGE DISTRIBUTION OF PATIENTS:

The following chart shows the age distribution of patients with hyperprolactinaemia and pituitary disease. 2 patients in this study were postmenopausal.

AGE	NO. OF PATIENTS
< 18 YEARS	2 (8 %)
19 TO 25 YEARS	3 (12 %)
26 TO 35 YEARS	13 (52 %)
36 TO 45 YEARS	2 (8 %)
46 TO 50 YEARS	3 (12 %)
> 51 YEARS	2 (8 %)
TOTAL = 25 PATIENTS	

2. LEVELS OF PROLACTIN (in ng / ml):

PROLACTIN LEVEL (in ng / ml)	NO. OF PATIENTS
< 50 ng / ml	5 (20 %)
51 to 100 ng / ml	10 (40 %)
101 to 150 ng / ml	2 (8 %)
151 to 200 ng / ml	4 (16 %)
> 200 ng / ml	4 (16 %) [Highest prolactin level was 350 ng / ml]
TOTAL = 25 PATIENTS	

3. PITUITARY DISEASE SEEN ON MRI:

PRIMARY PITUITARY PATHOLOGY	NO. OF PATIENTS
Primary Pituitary Hyperplasia	3 (12 %)
Pituitary Microadenoma	18 (72 %)
Pituitary Macroadenoma	1 (4 %)
Tuberculoma	1 (4 %)
Pituitary Apoplexy	2 (8 %)
TOTAL = 25 PATIENTS	

4. CHIEF COMPLAINTS:

COMPLAINT	NO. OF PATIENTS
Amenorrhoea	8 (32 %)
Oligomenorrhea	16 (64 %)

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Headache	21 (84 %)
Depression and mood disorders	23 (92 %)
Visual disturbances	2 (8 %)
Galactorrhoea	25 (100 %)
Spontaneous breast abscess	1 (4 %)
Infertility	12 (48 %)
Loss of libido	18 (72 %)
Osteoporosis	5 (20 %)

5. TREATMENT GIVEN:

Following is the chart of the treatment given to the patients in the present study:

TREATMENT GIVEN	NO. OF PATIENTS
Bromocriptine	15 (60 %)
Cabergoline	10 (40 %)
Antitubercular Treatment	1 (4 %)
Steroid	3 (12 %)
Trans Sphenoid Endoscopic Resection of Pituitary Adenoma	2 (8 %)

Dopamine agonists, i.e. bromocriptine or cabergoline, were given to all the patients in view of their high prolactin levels. The patient with tuberculoma in addition was given antitubercular treatment with steroid. 2 patients who presented in an emergency situation with pituitary apoplexy had to be given steroids. 23 patients responded to conservative medical management. However, 1 patient of pituitary apoplexy did not respond well to medical management and 1 patient with a macroadenoma causing bitemporal hemianopia due to compression of the optic chiasma were required trans phenoidal resection of pituitary adenoma.

6. OUTCOME OF TREATMENT:

OUTCOME OF TREATMENT	NO. OF PATIENTS
Normalisation of serum prolactin levels	25 (100 %)
Regularisation of menstrual cycles	24 (96 %)
Disappearance of headache	20 (80 %)
Disappearance of mood swings	18 (72 %)
Disappearance of visual disturbances	2 (8 %)
Disappearance of galactorrhoea	20 (80 %)
Return of libido	14 (56 %)
Conception	9 (36 %)

7. OUTCOME OF PREGNANCY:

PREGNANCY OUTCOME	NO. OF PATIENTS
Total pregnancies achieved after treatment	9 out of 25 (36 %)
Spontaneous abortion	2 (22 %)
Congenital malformations:	3 (33 %)
➢ Neural tube defects	2 (22 %)
➢ Undescended testes	1 (11 %)
Normal healthy child at full term	4 (44 %)

9 patients out of the total of 25 patients in our study achieved pregnancy of which, the chart above shows the outcome of pregnancy in our study.

V. DISCUSSION

In our study, all 25 (100 %) patients achieved normalisation of their prolactin levels as compared to 86 % of the patients in a study by

Johan Verhelstet all [1] and 92 % of the patients in the study of M. E. Molitch[5].

In our study, 24 (96 %) patients achieved regularisation of menstrual cycles with good flow as compared to 89 % of the patients in the study of Johan Verhelstet all [1] and 90 % of the patients in the study of M. E. Molitch[5].

In our study, galactorrhoea resolved in 20 (80 %) patients as compared to 76 % of patients in the study of FarshadNassiiriet all [4].

In our study, 18 (72 %) patients achieved normalisation of their libido as compared to 81 % in the of FarshadNassiiriet all [4].

In our study, out of a total of 25 patients, 2 were postmenopausal and hence pregnancy as an outcome would apply only to the 23 patients who were premenopausal. 9 patients out of these 23 premenopausal patients, i.e. 39 % of these patients, achieved pregnancy. In the study of Ursula B. Kaiser [2], 90 % of the patients began to ovulate and 42 % of the patients achieved pregnancy.

In our study, out of the 9 patients who conceived, 2 patients had spontaneous abortions (22 %) whereas 25 % of the patients had spontaneous abortions in the study of M. E. Molitch[5] and 9.1 % of the patients had spontaneous abortions in the study of Ursula B. Kaiser [2].

Of the 9 pregnancies in our study, we encountered 2 (22 %) cases of neural tube defects and 1 (11 %) case of undescended testes whereas Ursula B. Kaiser [2] has reported a malformation rate of 1.8 %. In the study of M. E. Molitch[5], 64 pregnancies were achieved out of which 1 (1.6 %) baby had undescended testes and 1 (1.6 %) baby had talipesequinovarus.

VI. CONCLUSION

On the basis of the study, it can be concluded that hyperprolactinaemia and pituitary disease respond fairly to medical management with dopamine agonists and surgical management is seldom required.

In our study, we have also concluded that although pregnancies were achieved, there was a relative risk of congenital malformations and spontaneous abortions in such pregnancies.

Further studies are needed to draw proper guidelines for the management of patients with hyperprolactinaemia with pituitary disease and post treatment pregnancies achieved in such patients..

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