

## STUDY OF CLINICAL PRESENTATIONS OF PATIENTS WITH HYPERPROLACTINAEMIA VISITING A TERTIARY CARE HOSPITAL

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### ABSTRACT

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#### BACKGROUND

Hyperprolactinaemia is one of the common endocrine disorders seen in clinical practice. It may result due to various causes and elucidating the exact cause is necessary to formulate the right therapy.

#### OBJECTIVE

To study the various aetiologies and clinical presentation of patients presenting with hyperprolactinaemia to a tertiary care hospital.

#### DESIGN

Cross-sectional study.

#### MATERIAL AND METHODS

We collected and analysed the clinical data including hormonal status of 74 consecutive patients who presented to our department from June 2015 to May 2016 for evaluation of hyperprolactinaemia.

#### RESULTS

Majority of the subjects studied belonged to 20-29 years group (47.29%) followed by 30-39 years age group (24.32%). The most common cause in our population was due to drug-induced causes (35.13%). The next common causes included idiopathic group (20.4%) followed by pituitary adenomas (16.21%). There was significant female predominance (83.78%) among total cases. Among women who presented with hyperprolactinaemia, menstrual irregularity (69.35%) followed by galactorrhoea (35.48%) were the most common presentations.

#### CONCLUSIONS

Hyperprolactinaemia is frequently seen among women who presented with either menstrual irregularity or galactorrhoea or both. Drug-induced hyperprolactinaemia is the most common cause seen in our study population.

#### KEYWORDS

Drug-induced Hyperprolactinaemia, Hyperprolactinaemia Prolactinoma, Idiopathic Hyperprolactinaemia.

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**HOW TO CITE THIS ARTICLE:** Mohanty BK, Choudhury AK, Baliarsingha AK. Study of clinical presentations of patients with hyperprolactinaemia visiting a tertiary care hospital. J. Evid. Based Med. Healthc. 2016; 3(53), 2745-2747.

DOI:10.18410/jebmh/2016/601

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**INTRODUCTION:** Hyperprolactinaemia is one of the common pituitary hormone disorders seen in routine clinical practice. There are a variety of causes which can lead to hyperprolactinaemia. These include physiological causes like pregnancy, lactation, exercise or sleep. The pathological causes are broadly divided into three causes. Conditions affecting pituitary gland like tumours, conditions damaging hypothalamic-pituitary stalk and systemic disorders can all lead to hyperprolactinaemia.<sup>1</sup> Drug-induced cause is one of the most common aetiology of hyperprolactinaemia that we come across in day-to-day practice.

Identifying the correct aetiology helps the clinician to give the best therapy minimising unnecessary procedures and medication prescription. We planned to carry out a systematic study to assess the aetiologies of hyperprolactinaemia.

**MATERIAL AND METHODS:** All consecutive patients presenting with hyperprolactinaemia to Endocrinology OPD of S.C.B. Medical College, Cuttack from June 2015 to May 2016 were enrolled in the study. A detailed clinical evaluation including detailed history taking was carried out for all patients. The evaluation of hyperprolactinaemia was undertaken as per standard protocol. A detailed drug exposure history was also undertaken. Biochemical and hormonal evaluation and pituitary imaging (if required) were done. When no definite cause could be attributed the case was labelled as idiopathic. Written and informed consent

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*Financial or Other, Competing Interest: None.*

*Submission 25-06-2016, Peer Review 27-06-2016,*

*Acceptance 30-06-2016, Published 04-07-2016.*

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*DOI: 10.18410/jebmh/2016/601*

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was taken from each subject. Institutional Ethical Committee clearance was taken.

The data was analysed using standard statistical methods. The graphs and tables were generated using Microsoft Excel 2007 software.

**RESULTS:** A total of 74 patients presented with hyperprolactinaemia during our study period. Majority of cases were females (n=62) who consisted of 83.78% of entire study population and rest were males (Figure 1). It was most commonly seen in 20-29 years age group which accounted for 47.29% of cases followed by 30-39 years age group which formed 24.32% of cases (Figure 2). The major manifestations among women included menstrual irregularity (69.34%), galactorrhoea (35.48%), infertility (27.41%) and headache (41.93%) (Figure 3). Visual disturbance was seen very rarely (4.83%) and it was only seen among cases with pituitary macroadenomas. The most common aetiology of hyperprolactinaemia was drug induced (n=26) accounting for 35.13% of cases (Figure 4). The next bulk of cases belonged to idiopathic group (n=15) which formed 20.4% of entire study population. Pituitary adenomas accounted for 12 cases with 7 being microadenomas while the rest were macroadenomas.

Prolactin secreting tumours were seen in 8 cases among which 6 were microadenomas and 2 were macroadenomas. Polycystic ovarian syndrome (PCOS) and hypothyroidism accounted for 14.86% and 12.16% of cases, respectively (Figure 4). Among drugs causing hyperprolactinaemia, proton pump inhibitors (PPI)/H2 receptor blockers with or without prokinetics accounted for 50% of cases (Figure 5). The next major group which caused hyperprolactinaemia was antipsychotics/antidepressants which caused 39.5% of cases.

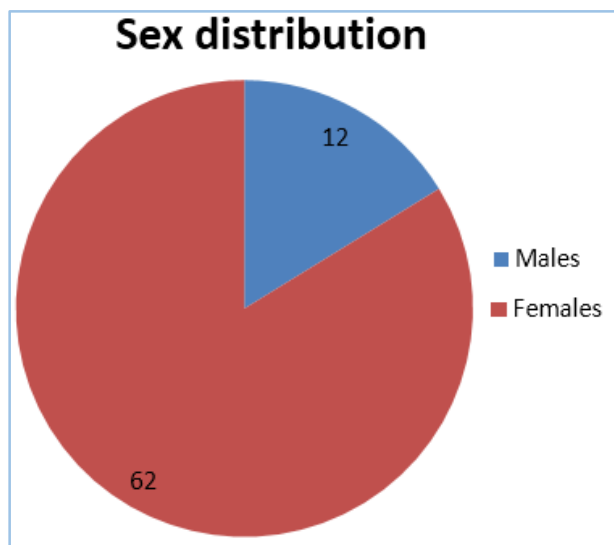


Fig. 1: Pie Chart Showing Sex Distribution of Cases

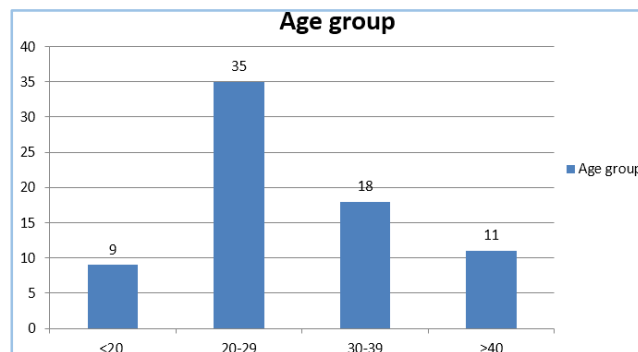


Fig. 2: Graph Showing Age Group Distribution among Cases

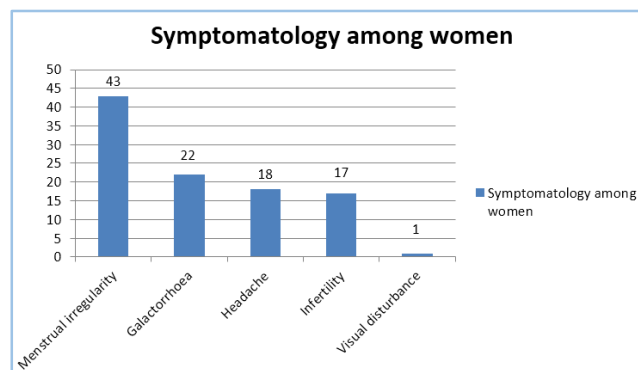


Fig. 3: Graph Showing Main Symptoms among Women

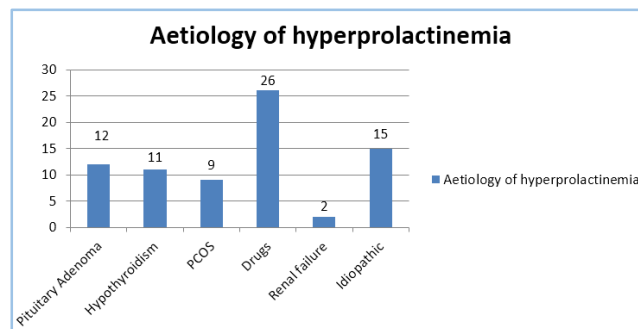


Fig. 4: Graph Showing Distribution of Aetiologies of Hyperprolactinaemia

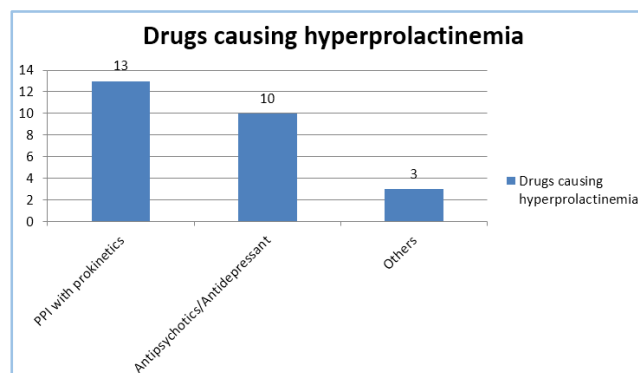


Fig. 5: Graph Showing Major Drug Class Causing Hyperprolactinemia

**DISCUSSION:** Hyperprolactinaemia is one of the most common endocrine disorder encountered in clinical practice. As discussed earlier, the cause could be as varied as pituitary tumours to drug-induced causes.

The majority of cases were women in our study. This is perhaps due to the fact that menstrual irregularity or other symptoms in women lead them to seek clinical help earlier. The majority of population consisted of patients belonged to third decade which is similar to prevalence reported by study of Zargar et al.<sup>2</sup> This could be due to the fact that majority of patients especially women get married in this age group and are therefore more bothered about their reproductive function and seek clinical help.<sup>2</sup> Menstrual irregularity, galactorrhoea and infertility were the predominant symptoms among women. The incidence of galactorrhoea in women was 35.4% in comparison to prevalence of 45% by Zargar et al<sup>2</sup> and 33% by Ou et al.<sup>3</sup> Similarly, we found menstrual irregularity to be present in 65.3% of women whereas Ou et al<sup>3</sup> had reported the same problem in 42% of patients. The incidence of galactorrhoea in women with hyperprolactinaemia varies among different reports and occurs in 30-80% of subjects.<sup>4,5</sup>

Headache occurred in 29 % of our patients as compared to 45% of subjects in study of Zargar et al.<sup>2</sup> The headache is not limited to those having pituitary adenomas, but also other causes and hence mechanical cause as sole explanation is not possible. Prolactin is involved in regulation of trigeminovascular system and may influence headache pattern. Idiopathic hyperprolactinaemia (IH) accounted for 20.4% of cases. However, it is the most common cause of hyperprolactinaemia in many other studies. IH is diagnosed when there is sustained clinically significant elevation of serum prolactin concentrations with neither demonstrable pituitary/hypothalamic lesions nor any other recognised causes of prolactin oversecretion.<sup>6</sup> In view of the benign and self-limited course of IH, it appears justified to treat these patients only when troublesome galactorrhoea or anovulatory infertility occurs and to prevent osteoporosis in connection with hypogonadism.<sup>7</sup> Martin et al<sup>8</sup> studied the natural history of idiopathic hyperprolactinaemia over a period of 11 yrs. and challenged the use of ablation pituitary therapy and or benefit of chronic medical therapy for this condition as majority had decrease or no progression of the condition.

Drug-induced hyperprolactinaemia was the most common cause of hyperprolactinaemia in our study where as it was second most common cause reported by Ou et al<sup>3</sup> and Suliman et al<sup>9</sup> The most common drugs included PPI and prokinetics in our study which is in agreement to study by Ou et al.<sup>3</sup> Hypothyroidism accounted for 14.86% of cases. The cause of hyperprolactinaemia in hypothyroidism is due to stimulation of lactotrophs by thyrotropin releasing

hormone. Treatment of primary hypothyroidism corrects hyperprolactinaemic state.<sup>10</sup>

**CONCLUSION:** The main cause of hyperprolactinaemia was due to drug-induced causes in our study group. The cause of hyperprolactinaemia should always be thoroughly evaluated as treatment can prevent considerable morbidity associated with this state. Early diagnosis and effective treatment are quite rewarding.

#### ABBREVIATION:

PCOS: Polycystic ovarian syndrome.

PPI: Proton Pump Inhibitors.

IH: Idiopathic hyperprolactinaemia.

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