Research Article ISSN 2639-9326

Diabetes & its Complications

Clinical Profile of Patients with Hyperprolactinemia: A Study Based on Nepalese Population

Priyadarshini Yonzon*, Ansumali Joshi, Sudarshan Tandukar, Riza Thapa and Pushpa Dahal

Endocrinology Department, Kathmandu Diabetes and Thyroid Center Pvt Ltd, Nepal.

***Correspondence:**
Priyadarshini Yonzon, MD Endocrinology, Kathmandu Diabetes and Thyroid Center Pvt Ltd, Nepal, Tel: +977-5521969; E-mail: kathmandudiabetes@gmail.com.

Received: 26 January 2018; **Accepted:** 02 March 2018

Citation: Yonzon P, Joshi A, Tandukar S, et al. Clinical Profile of Patients with Hyperprolactinemia: A Study Based on Nepalese Population. Diabetes Complications. 2018; 2(1): 1-3.

ABSTRACT

Background: *Hyperprolactinemia is a common endocrine disorder. Yet, data on clinical profile of Nepalese patients with hyperprolactinemia is missing. The aim of this study was to assess the clinical profile of Nepalese patients with hyperprolactinemia.*

Methodology: *This was a retrospective study conducted at Kathmandu Diabetes and Thyroid Center Pvt Ltd, Kathmandu, Nepal. Data was collected from the patient record files of the subjects diagnosed with hyperprolactinemia within the last one and a half year (March 2013 to October 2014). The data was calculated as mean and percentage frequency.*

Results: *A total of 30 patients diagnosed with hyperprolactinemia were included in the study. Mean age of the patients was 27.3 ± 7.3 years. Menstrual irregularity was the most common presenting problem (48%), followed by galactorrhea (34%). Pituitary adenoma was demonstrated in 37% patients, idiopathic hyperprolactinemia in 33%. Cabergoline was used in 92% patients for treatment of hyperprolactinemia.*

Conclusion: *Hyperprolactinemia is an important clinical entity with menstrual irregularity and/or galactorrhea as the most common presenting problem. Pituitary adenoma is the major cause of hyperprolactinemia in Nepalese patients. Cabergoline is the drug of choice for treatment of hyperprolactinemia.*

Keywords

Amenorrhea, Hyperprolactinemia, Oligomenorrhea, Prolactinoma.

Introduction

Hyperprolactinemia (HP) is a condition characterized by elevated prolactin level. Non-puerperal hyperprolactinemia can result from a number of causes including drugs, hypothyroidism, and polycystic ovarian syndrome (PCOS) as well as pituitary disorders. HP may also develop due to lactotroph adenomas, which account for approximately 40% of all pituitary tumors [1]. Idiopathic HP is also possible, though the apparent cause may not be ascertained.

The occurrence of HP is more common in females. The prevalence of HP ranges from 9 to 17% in women with reproductive disorders. Clinically unapparent hyperprolactinemia can also be identified in up to 10% of the population [2].

Irrespective of the etiology, HP can lead to galactorrhea, hypogonadism, or it may even be asymptomatic.3 In the case of macroadenomas, patients may often present with symptoms of mass effect (headache and visual disturbances). In men, HP may be associated with impotence and infertility. Dopamine agonists such as cabergoline and bromcriptine are the drug of choice for treatment of HP. This study aimed to define the baseline characteristics and treatment modality of Nepalese patients with HP.

Methods

The medical records of a total of 30 patients diagnosed with HP

were taken into consideration. The study design was descriptive and retrospective, conducted between a period of March 2013 and October 2014, at the Kathmandu Diabetes and Thyroid Center Pvt Ltd, Kathmandu, Nepal.

HP was considered as a serum prolactin level greater than the reference value. Prolactinoma was defined as an elevated prolactin level in presence of a pituitary adenoma; prolactinoma less than 10mm in size is microprolactinoma and greater than 10mm is macroprolactinoma.

Parameters such as age distribution, etiology, menstrual irregularity, infertility, galactorrhea and drug use was noted. Laboratory values of serum TSH and prolactin level was also analyzed. The clinical and biochemical details were entered and analyzed using Statistical Package for Social Sciences (SPSS version 21). Mean value and percentage frequency were evaluated.

Results

There was a preponderance of female patients (Male: Female = 1: 9). The mean age of patients was 27.3 ± 7.3 years. Baseline characteristics of the patients are shown in Table 1.

Characteristics	Mean (± S.D.)	Frequency (%)
Age	27.3 ± 7.3	
Gender		
Female		27 (90%)
Male		3 (10%)
BMI (kg/m^2)	24.3 ± 5	
TSH (IU/mL)	3.21 ± 1.69	
Serum Prolactin (ng/mL)	145.3	

Table 1: Baseline characteristics of the study population.

Menstrual irregularity was observed in 48%, while 52% patients had normal menstrual period (Table 2).

Symptoms	Frequency (%)
Galactorrhea	10 (34%)
Menstrual Irregularity	13 (48%)
Primary Infertility	3 (11%)
Secondary Infertility	1 (3%)
Visual Disturbances	2 (7%)
Macroprolactinoma	2 (7%)

Table 2: Clinical features of patients with hyperprolactinemia.

Regarding the etiology of HP, prolactinoma was observed in 37% of the patients, while idiopathic HP was noted in 33%. Drug induced HP accounted for 10% of the total cases. Dopamine antagonists (domperidone) and atypical anti-psychotic (amisulpride) were the pharmacological causes of HP (Table 3).

Cabergoline was the drug of choice for the treatment of HP (Table 4).

Etiology	Frequency (%)
Microprolactinoma	9 (30%)
Idiopathic HP	10 (33%)
PCOS	3 (10%)
Drug Induced	3 (10%)
Hypothyroidism	3 (10%)
Macroprolactinoma	2 (7%)

Table 3: Etiology of hyperprolactinemia.

Drug	Frequency (%)
Cabergoline	22 (92%)
Bromocriptine	2 (8%)

Table 4: Drug Use for treatment of Hyperprolactinemia.

Discussion

HP is an important hormonal change of the hypothalamic pituitary axis. This study aimed to define the clinical and demographic characteristics, including treatment modality of Nepalese patients with HP. The most common age group was 28-32 years, which was comparable to those noted in a study by Al-Muhammadhi et al. [4]. Even though HP can occur at any age, anovulatory dysfunction and desires to conceive could have urged young patients for higher consultation, which might explain the preponderance of young patients in this study.

Majority of the female patients presented with the classical problems of menstrual irregularity and/or galactorrhea. The percentage of infertile patients was low in our study. Primary infertility exceeded the cases of secondary infertility (3:1). This result was in accordance with those of Avasthi et al. [5], who found that 60% of infertile hyperprolactinemic women had primary infertility while 40% had secondary infertility. This may possibly be due to the fact that secondary infertility can go unnoticed in the general population as pregnancy could already have been of a lesser concern.

Lactotroph adenoma was the major cause of HP in our study. The occurrence of microprolactinoma outnumbered the cases of macroprolactinoma. It was also noted that both the cases of macroprolactinoma were male. Lactotroph adenomas are usually reported late in clinical practices in males because of lack of symptoms and are commonly macroadenomas [6]. Idiopathic HP was another important cause of elevated prolactin levels. HP with no apparent cause and normal MRI of pituitary sella was demonstrated in 33% patients.

Hypothyroidism contributed to 10% of HP in our subjects. Thyrotropin Releasing Hormone influences PRL gene expression and thus, stimulates prolactin production and release.7 Long-term or inadequately treated primary hypothyroidism can also lead to pituitary hyperplasia that may mimic a pituitary adenoma [8]. PCOS accounted to 10% of the total cases. Zargar et al reported a similar result (12.8%) [9].

Drug Induced HP was observed in remaining 10% of the patients. A variety of medications can cause minimal or moderate PRL elevations and may induce galactorrhea, amenorrhea or reduced male sexual functions. Domperidone, a dopamine antagonist and amisulpride (anti-psychotic) were the drugs responsible for HP. Use of an alternative medication can prove beneficial under such circumstances.

Visual field disturbance was noted in both the patients with macroprolactinoma. Patients with microprolactinoma typically do not develop visual disturbances but macroprolactinomas can have compressive effects on visual structures [10]. Even loss of vision can be noted in patients with macroprolactinoma.

In the present study, cabergoline was more preferred over bromocriptine. Both of the drugs are effective in treatment of HP; yet, cabergoline is more effective in restoring menstrual cycles and provides an added advantage over bromocriptine [11].

Conclusion

A spectrum of physiological, pathological and pharmacological etiologies may underlie HP. Lactotroph adenoma is the common cause of HP in Nepalese patients. Galactorrhea and menstrual disturbances are the hallmark features of HP and appear to be the major presenting problems. The treatment of HP is however, relatively simple. Dopamine agonists are the preferred therapy for patients with HP. The goals of treatment are to normalize prolactin levels, restore gonadal function, and reduce the effects of chronic HP.

References

1. Gillam MP, Molitch ME, Lombardi G, et al. Advances in the treatment of prolactinomas. Endocr Rev. 2006; 27: 485-534.
2. Serri O, Chik CL, Ur E, et al. Diagnosis and management of hyperprolactinemia. Can Med Assoc J. 2003; 169: 575-581.
3. Melmed S, Casanueva FF, Hoffman AR, et al. Diagnosis and treatment of hyperprolactinemia an Endocrine Society clinical practice guideline. J Clin Endocr Metab. 2011; 96: 273-288.
4. Al-Muhammadi MO, Al-Rubaie BJ, Al-Emeedi NH. Physiological Study of Some Hormonal Parameters in Infertile Hyperprolactinemic Women in Pre and Post-Treatment with Cabergoline and Bromocriptine. Med J Babylon. 2012; 9.
5. Avasthi K, Kaur J, Gupta S, et al. Hyperprolactinema and its correlation with hypothyroidism in infertile women. J Obstet Gynaecol India. 2006; 56: 68-71.
6. Pinzone JJ, Katznelson L, Danila DC, et al. Primary Medical Therapy of Micro-and Macroprolactinomas in Men 1. J Clin Endocr Metab. 2000; 85: 3053-3057.
7. Lamberts S, Macleod R. Regulation of prolactin secretion at the level of the lactotroph. Physiol Rev. 1990; 70: 279-318.
8. Khawaja NM. Pituitary enlargement in patients with primary hypothyroidism. Endocr Pract. 2006; 12: 29-34.
9. Zargar A, Laway B, Masoodi S, et al. Clinical and etiological profile of hyperprolactinemia-data from a tertiary care centre. J Assoc Physicians India. 2005; 58: 288-290.
10. Melmed S, Polonsky KS, Larsen PR, et al. Williams textbook of endocrinology: Expert consult: Elsevier Health Sciences. 2011.
11. Webster J, Piscitelli G, Polli A, et al. A comparison of cabergoline and bromocriptine in the treatment of hyperprolactinemic amenorrhea. N Eng J Med. 1994; 331: 904-909.