

**Olanzapine induced hyperprolactinemia****Veena Nayak<sup>1\*</sup>, Virupaksha Devaramane<sup>2</sup>, Deepak Mallya<sup>2</sup>, Panambur V. Bhandary<sup>2</sup>**<sup>1</sup>Department of Pharmacology,  
Kasturba Medical College, Manipal  
University, Manipal, Karnataka, India<sup>2</sup>Psychiatrist, Dr. A.V. Baliga  
Memorial Hospital, Udipi, Karnataka,  
India**Received:** 8 September 2013**Accepted:** 23 September 2013**\*Correspondence to:**Dr. Veena Nayak,  
Email: drveenayak@gmail.com,  
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commercial use, distribution, and  
reproduction in any medium, provided  
the original work is properly cited.**ABSTRACT**

Olanzapine, a second generation antipsychotic is widely used for the treatment of schizophrenia and bipolar disorders. Though olanzapine is an efficacious antipsychotic it has been associated with many adverse effects like weight gain, hyperlipidemia, diabetes mellitus, etc necessitating its discontinuation. Here, we present two cases of hyperprolactinemia induced by olanzapine.

**Keywords:** Olanzapine, Atypical antipsychotic, Hyperprolactinemia**INTRODUCTION**

Second generation antipsychotics are the most widely prescribed drugs for the treatment of schizophrenia and other illnesses associated with psychotic symptoms.<sup>1</sup> These illnesses most often require lifelong therapy with antipsychotics and hence the drug of choice would depend mainly on the safety profile of the drug. Olanzapine, a second generation antipsychotic is an effective agent for the treatment of bipolar disorders, schizophrenia and other psychotic disorders.<sup>1</sup> Studies have shown improved efficacy of olanzapine, compared to most other antipsychotics (though not a significant difference). On the contrary, olanzapine was associated with weight gain, hyperlipidemia, and increased risk of diabetes, being the most common cause of discontinuation of the drug.<sup>2</sup>

Here we present two cases of olanzapine induced hyperprolactinemia.

**CASE REPORT**

**Case 1:** A 44 year old female had complaints of decreased sleep, talking to self, persecutory delusions since 2 months.

She was diagnosed to have acute psychosis. The patient was hospitalized and was started on tablet olanzapine 2.5mg BD and lorazepam 1mg BD. On discharge the dose of olanzapine was increased to 7.5mg per day and lorazepam 0.5mg OD. The patient came for follow ups regularly and had improvement of symptoms for about a year. On her recent follow up she complained of decreased appetite, decreased sleep, restlessness, loss of weight and suicidal tendencies. On a detailed interview, she revealed galactorrhoea since fifteen days and was very embarrassed about it. Serum TSH was within normal limits. CT brain was also normal. Serum prolactin was 47.74ng/mL (normal prolactin levels for menstruating females is 2.8-29.2ng/mL). As the patient had amenorrhoea, pregnancy test was done which was negative. The client had two children who were 15 and 10 years of age. She had undergone tubectomy 10 years back. Since most of the causes for hyperprolactinemia had been ruled out, olanzapine was stopped and patient was started on tab quetiapine 50mg OD. Serum prolactin returned to normal (9.82ng/mL) after a week.

**Case 2:** A young unmarried female aged 21 complained of fearfulness, persecutory delusions, guilt feelings, decreased

appetite and sleep since two weeks. After thorough evaluation she was diagnosed to have reactive psychosis for which she was prescribed tab olanzapine. The dose was started at 5 mg and was gradually escalated to 10mg per day. She showed improvement on follow up visits. She had also resumed back to her work. On the follow up visit after 3 months she complained of amenorrhea since one month. Her physical examination findings were within normal limits. Pregnancy test was negative, TSH was normal, but serum prolactin was 33.67ng/mL. CT scan was not done due to financial constraints. Tab olanzapine was tapered and stopped and was started on tab quetiapine. Serum prolactin returned to normal levels after 8 days.

## DISCUSSION

In both the cases discussed above, hyperprolactinemia can be attributed to olanzapine therapy as prolactin levels returned to normal levels when olanzapine was stopped. As per causality assessment, olanzapine as a cause for hyperprolactinemia can be considered probable (Naranjo's algorithm score= 7).<sup>3</sup> A previous case report of olanzapine induced hyperprolactinemia was seen at 15mg after 3 weeks.<sup>4</sup> But in the cases discussed above, hyperprolactinemia occurred at 7.5mg and at 10mg. One case report had also suggested that olanzapine reversed the hyperprolactinemia induced by perphenazine to normal.<sup>5</sup> In view of these controversies, we found it appropriate to report these cases.

Hyperprolactinemia is of main concern with the use of first generation antipsychotics and risperidone. Olanzapine has not been associated with significant increase in prolactin levels. Various studies have shown that elevation of prolactin with olanzapine was not significantly greater than those on placebo and significantly less compared to haloperidol.

Excess prolactin decreases the pulsatile gonadotropin secretion resulting in menstrual disturbances, galactorrhoea, gynaecomastia, osteoporosis in females and

impaired steroidogenesis and infertility in males.<sup>5</sup> These side effects can worsen patient compliance to treatment.

The exact mechanism of olanzapine induced hyperprolactinemia is not clear. It has been suggested that females are more sensitive to dopamine blockade in tuberoinfundibulum.<sup>6</sup>

However, hyperprolactinemia is not an infrequent side effect with olanzapine. Further elaborate studies are required to compare the effects of olanzapine with other atypical antipsychotics on serum prolactin levels.

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