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# Risperidone Induced Hyperprolactinemia: A Case Report



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**Parveen. S<sup>1</sup>, Varalakshmi. M<sup>2\*</sup>, Gayathri. R<sup>2</sup>,  
Bhuvana Chandra. V<sup>2</sup>, Deepti .M<sup>2</sup>, Yojitha. C<sup>2</sup>**

*<sup>1</sup>Assistant Professor, Department of Pharmacy Practice,  
P. Rami Reddy Memorial College of Pharmacy, JNTUA,  
Kadapa, Andhra Pradesh, India.*

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## ABSTRACT

Bipolar affective disorder is a psychological illness that involves severe mood swings. These mood swings take the form of depression or mania. Antipsychotic drug therapy (A typical antipsychotic) such as risperidone, can be associated with endocrine abnormalities, including an increase in serum prolactin level (sPrl). A few case reports have noted a resolution of hyperprolactinemia after cessation of risperidone treatment. We observed a case in tertiary care teaching hospital, woman with Bipolar affective disorder was treated with risperidone, lithium, Trihexyphenidyl, Haloperidol and Phenergan, Diazepam. After initiation of drug therapy, the patient was observed with increased serum prolactin levels i.e 165 ng/ml(Normal level 2.8-29.2 ng/ml). Upon discontinuation of risperidone the prolactin level were decreased to 15.5ng/ml within one week and the patient was treated with quetiapine, prolactin levels continued to be normal. This case report and others from literature suggest that risperidone is associated with hyperprolactinemia.

## INTRODUCTION

Prolactin is a hormone produced by the lactotrophs of the anterior pituitary and is composed of a single-chain protein. <sup>[1]</sup> Prolactin plays an important role in the process of reproduction in men and women. It also affects water and electrolyte balance, immunoregulation, and behavior. Prolactin level is very high in newborn infants and declines during the first few months of life. Among adults, prolactin level is higher in women, especially during pregnancy, and reaches peak level during the night. Opioids and serotonin [5-hydroxytryptamine (5-HT)] can increase prolactin levels while dopamine can decrease prolactin levels.

Hyperprolactinemia is clinically defined as a plasma prolactin level of >20ng/mL for men and >25ng/mL for women. Elevated prolactin in men may cause erectile dysfunction, ejaculatory dysfunction. In female subjects, abnormally high prolactin levels may cause menstrual disturbances, galactorrhea, gynecomastia, and sexual dysfunction. Chronic hyperprolactinemia increases risk for osteoporosis and breast cancer.<sup>[2]</sup>

Antipsychotic medications are used to treat a variety of psychiatric disorders. Conventional neuroleptics, such as haloperidol, chlorpromazine, and have been shown to cause hyperprolactinemia. Neuroleptic-induced hyperprolactinemia is more common in women than men, and prolactin increase by conventional neuroleptics is also higher in women. <sup>[3]</sup> Atypical antipsychotic agents, such as olanzapine, quetiapine, and clozapine, have shown to increase prolactin level, this effect is minimal and short lived. Risperidone, however, is a widely used atypical agent that has shown more pronounced and continuous elevations in prolactin levels due to a stronger, more prolonged dopamine receptor blockade. <sup>[4-6]</sup> This case report demonstrates risperidone was associated with a high prolactin level with result and adverse effects in a young adult woman, and that changing treatment to quetiapine normalized this prolactin level and reversed the observed side effects.

## CASE REPORT

A 28-year-old woman had BPAD (Bipolar affective disease) since one year and began to have maniac symptoms that worsened over time, So the patient visited outpatient department with complaints of excessive talking, laughing, increased appetite decreased sleep and referred to inpatient psychiatric department. The patient was treated with Tab. Risperidone, Tab. THP, Tab. Lithium, Inj. Haloperidol and Phenergan for 2 days.

On day 3 patient complaints of milk ejaculation (hyperprolactinemia) and patient was advised for prolactin level which were found to be 165ng/ml, patient was switched from risperidone therapy to quetiapine therapy after one week prolactin levels were found to be normal.

## DISCUSSION

This case report explains that temporal relationship between risperidone administration and hyperprolactinemia developed as significant adverse effects. The patient's serum prolactin levels were elevated after treatment with risperidone, and the prolactin levels decreased after one week due to Tab. Risperidone switched to Tab. Quetiapine. ADR assessment showing that probable on Naranjo scale. The patient's prolactin level remained normal while receiving the maximum dosage of quetiapine (800mg/day). This case report is demonstrates that quetiapine can cause hyperprolactinemia as side effect is less when compared to risperidone.<sup>[7-8]</sup>

## CONCLUSION

Risperidone is an atypical antipsychotic 2<sup>nd</sup> generation drug that can cause hyperprolactinemia. Treatment with antipsychotic medication may be correlated with a rise in prolactin level due to hypothalamic dopamine blockade. Physicians should be aware of new antipsychotic drugs regularly after enter into the market, related to potential side effects like hyperprolactinemia. Physicians need to enquire about any abnormal sexual effects appear after administration of risperidone and check serum prolactin levels who are at risk for short and long term side effect of hyperprolactinemia.

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