

## Risperidone Induced Parkinsonism: A Rare Case Report

### Case Report

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### Abstract

The present case report narrates the case of a 60-year-old woman with a past medical history of schizophrenia, who exhibited parkinsonism symptoms subsequent to the administration of risperidone - a typical antipsychotic drug that impacts dopamine and serotonin levels. The patient presented with pill-rolling tremors, bradykinesia, rigidity, and weakness in the left upper limb, and was diagnosed with Parkinsonism following a physical examination by a physician. The patient was subsequently referred to a neurologist, who recommended switching from risperidone to Riscon Plus, a medication that combines risperidone with Trihexyphenidyl, an anticholinergic drug that improves muscle control and reduces stiffness. This case report emphasizes the significance of vigilant monitoring for the symptoms of Parkinsonism in individuals consuming dopamine-blocking drugs and the possible advantages of shifting to alternate treatments that can alleviate such undesirable consequences.

**Keywords:** Risperidone; Parkinsonism; Extrapyramidal side effects; Schizophrenia; Antipsychotic agents

### Introduction

Parkinsonism is a movement disorder that manifests with symptoms such as postural instability, rigidity, tremors, and bradykinesia (slowed movement). While Parkinson's disease is a common cause, it can also be induced by medications or other medical conditions. Medication-induced Parkinsonism (MIP) arises from the effects of medications that hinder dopamine receptor activity in the brain, leading to the manifestation of related symptoms. The most common drugs that can cause MIP are antipsychotics, particularly first-generation antipsychotics such as haloperidol and chlorpromazine. Second-generation antipsychotics, such as risperidone, are considered to have a lower risk of causing MIP, but they can still cause this side effect. Risperidone is a medication

classified as an atypical antipsychotic, often prescribed for the treatment of schizophrenia, bipolar disorder, and irritability linked to autism. Its mode of action involves blocking dopamine receptors in the brain, resulting in the improvement of mood disorder and psychosis symptoms [1-2].

However, as with all antipsychotics, risperidone can also cause side effects, including MIP. The incidence of risperidone-induced MIP is lower than that of first-generation antipsychotics, but it can still occur in susceptible individuals. The onset of MIP can be variable, with symptoms appearing within days to weeks after starting the medication. The severity of the symptoms can

also vary, from mild to severe. In some cases, the symptoms may persist even after discontinuing the medication. Management of MIP involves either reducing the dose or discontinuing the offending medication. However, this can be challenging, especially in individuals with severe psychiatric illnesses who require ongoing antipsychotic treatment. In some cases, switching to a different antipsychotic medication with a lower risk of MIP may be necessary [3-4].

This case study describes a female patient, aged 60, who developed Parkinsonism symptoms due to the use of risperidone. The patient presented with tremors, rigidity, and bradykinesia, which are classic symptoms of Parkinsonism. Upon discontinuing the use of risperidone, the patient's symptoms resolved within six weeks. The case highlights the importance of monitoring patients who are being treated with risperidone for the development of Parkinsonism. Healthcare providers should be aware of the potential for this adverse effect and should carefully weigh the risks and benefits of using this medication in patients who are at risk for Parkinsonism.

## Case Report

A female patient aged 60, who had been diagnosed with schizophrenia for a duration of 3 years, presented at the hospital with various symptoms including sudden weakness in her upper limbs, difficulty in grasping objects, rigidity, tremors of the pill-rolling type, a stooped posture, and sluggish movement while walking. These symptoms had been progressively worsening for duration of 6 months. The patient had a medical history of type 2 diabetes mellitus which had been managed using metformin for a period of 8 years, as well as hypertension which had been managed using atenolol for the same duration. There was no record of any blood transfusions or surgical procedures in the past. Upon physical examination, the patient's limbs displayed slow movement and tremors of the pill-rolling type, along with bradykinesia and rigidity. The patient's vital signs remained stable with a pulse rate of 82 beats per minute and a blood pressure of 140/80 mmHg.

Further investigations, including complete blood picture analysis, electrocardiogram, serum electrolytes, deep reflex test, CT brain, complete urine examination, blood sugar test, and coordination tests (finger-nose and knee-heel), were performed after a few hours of

admission. Psychiatric opinion was sought, and the patient was advised to switch from risperidone to Riscon Plus. The patient was also advised to monitor her glucose levels pre-meals and three times a day, take metformin 500mg orally in the morning and night post-meal, take atenolol 50mg orally in the morning post-meal, and take Riscon Is in the night post-meal, with frequent monitoring of vital signs.

## Discussion

The present case report highlights a rare side effect of risperidone, which is the development of Parkinsonism. Parkinsonism is a well-known extrapyramidal side effect associated with the use of antipsychotic medications, including risperidone. It is believed to occur due to the blockade of dopamine receptors in the basal ganglia, resulting in an imbalance of dopamine and acetylcholine neurotransmitters, which leads to the characteristic motor symptoms of Parkinsonism [5]. Although the incidence of risperidone-induced Parkinsonism is relatively low, it is important to recognize and manage this side effect as it can significantly impact a patient's quality of life. Early recognition and management of Parkinsonism can prevent the development of long-term complications such as dysphagia, falls, and cognitive impairment [6]. Therefore, regular monitoring of patients on antipsychotic medications is crucial, and any motor symptoms should be promptly assessed to rule out the possibility of Parkinsonism. Management of risperidone-induced Parkinsonism involves the use of anticholinergic medications such as benztropine or trihexyphenidyl, which can alleviate the motor symptoms by blocking the excess acetylcholine activity in the basal ganglia [7]. Nonetheless, these drugs may induce unfavorable outcomes including xerostomia, visual impairment, and urinary hesitancy. Therefore, a careful balance between the potential benefits and harms of these medications should be considered.

To summarize, this case report emphasizes the significance of identifying and addressing the extrapyramidal adverse effects of antipsychotic drugs, specifically Parkinsonism induced by risperidone. It is crucial to monitor patients regularly for any motor symptoms and promptly assess and manage them to prevent long-term complications. Furthermore, a careful balance between the potential benefits and harms of anticholinergic medications should be considered.

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