

## Case Report

# Paliperidone-Induced Acute Dystonia

Kaustav Chakraborty<sup>1</sup> and Amitava Dan<sup>2</sup>

<sup>1</sup>Department of Psychiatry, Institute of Neurosciences, Kolkata, India

<sup>2</sup>Department of Psychiatry, Burdwan Medical College and Hospital, Burdwan, India

Corresponding author: Kaustav Chakraborty, Department of Psychiatry, Institute of Neurosciences, Kolkata 185/1, A.J.C. Bose Road, Kolkata-700017, E-mail: drkaustav2003@yahoo.co.in

## Abstract

**Background and Objective:** Paliperidone is an active metabolite of risperidone which received FDA approval very recently. Because of its unique pharmacologic delivery system and low avidity for D2 receptor lower doses of paliperidone (3 mg & 6 mg) are claimed to be much safer from EPS point of view. We aim to present a case of cervico-oro-mandibular dystonia in a young adult with schizophrenia temporally related to paliperidone.

**Case description:** Based upon a clinical history of paranoid schizophrenia and no prior history of antipsychotic use paliperidone was introduced at a dose of 6 mg/d in the index case. After receiving the second dose of paliperidone the patient developed cervico-oro-mandibular dystonia which was quite painful and distressing for the patient. It was relieved by intravenous administration of an antihistaminic agent.

**Conclusion:** The index case suggests lower doses of paliperidone may induce acute EPS in susceptible patients (German J Psychiatry 2011; 14: 46-47).

**Keywords:** paliperidone, schizophrenia, extra-pyramidal symptoms

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## Introduction

Paliperidone, the 9-hydroxy metabolite of risperidone, is a second-generation antipsychotic that was approved on December 20, 2006 by the US Food and Drug Administration (FDA) for the treatment of schizophrenia (Kantrowitz & Citrome, 2008). Three multi-centre, randomised, double-blind, placebo-controlled trials examined the efficacy and safety of paliperidone in subjects who met DSM-IV criteria for schizophrenia and found significant improvement in PANSS score compared to placebo (Kane et al., 2007; Davidson et al., 2007; Marder et al., 2007). Paliperidone has a distinct treatment profile with an innovative pharmacologic delivery system, being effective when given once daily, able to be initiated at a potentially therapeutic dose, and being less likely to interfere with other medications that are metabolized by the liver (Kantrowitz & Citrome, 2008). Like most second-generation antipsychotics, paliperidone is an antagonist at the dopamine D2 and sero-

tonin 5-HT2A receptors. There is evidence that paliperidone binds to D2 receptors less tightly, suggesting that paliperidone might cause fewer extrapyramidal symptoms (EPS) (Seeman, 2005). Contrary to the theoretical proposition, higher doses of paliperidone (9 mg and 12 mg) appears to cause a somewhat higher rate of parkinsonism and EPS than risperidone, but, the rates reported for paliperidone 6 mg (10.2%) appear to be slightly lower than for usually therapeutic dosages of risperidone, in which EPS rates of 11% and 17% were reported for 4 mg and 6 mg, respectively (Anon 2010a; Anon 2010b). Catatonia caused by low dose (3 mg) of paliperidone has recently been reported (McKeown et al., 2010).

We describe a case of 32 year old antipsychotic naïve patient having schizophrenia who developed acute dystonia after initiation of 6 mg paliperidone. To the best of our knowledge this will be the first case reporting acute dystonia temporally related to paliperidone.

## Case Report

A 32-year old male patient presented with a history of delusion of persecution, delusion of reference, auditory hallucination giving running commentary on patient's activities, episodes of violence and aggression, poor self care and disturbed biofunction for the past 3 months. His past and family history was noncontributory. He was diagnosed as a case of paranoid schizophrenia and was started on paliperidone 6 mg in the morning along with clonazepam 3 mg/day in two divided doses. His fasting blood sugar, lipid profile, thyroid function test, liver and renal function tests, electrocardiogram and noncontrast head computed tomography (CT) were within normal limit. Patient started complaining of mild pain in his neck region after an hour of his first dose of paliperidone which he was told to ignore by his family members. The next day after 8 hours of receiving the second dose he developed painful dystonic posturing of neck to the right side, locking of jaws, difficulty in swallowing and drooling of saliva from mouth. He was immediately brought to the hospital. His vitals were stable; pupils were equal, round and reactive to light. He was crying for help as he was in severe distress because of the painful muscle spasm. Injection promethazine (50 mg) was given intravenously with which he had relief of symptoms over next 15 minutes. He was sent back to home after being observed for an hour. A week later, on next follow up he was started on olanzapine and the dose was gradually built up to 15 mg/day without any reemergence of the previous side effect.

## Discussion

Risperidone and its active metabolite paliperidone are known to cause EPS which is a dose related phenomenon (Peralta & Cuesta, 2010; Anon 2010a). Because of the unique pharmacologic delivery system and propensity to bind D2 receptors less avidly lower doses of paliperidone (3 mg and 6 mg) are claimed to be much safer from EPS point of view with only one patient developing dystonia with 6 mg paliperidone during the drug developmental phase which was comparable to placebo (Seeman, 2005; Anon 2010a). In index case the development of cervico-oro-mandibular dystonia was temporally related to the institution of paliperidone therapy albeit at a low dose (6 mg). Considering the patient was antipsychotic naïve and he was not receiving any other medication we can link the dystonia to the use of paliperidone. The index case was treated with an intravenous antihistaminic agent promethazine, which also has established anticholinergic

property and commonly used in Indian subcontinent for emergency management of such cases because of non-availability of intravenous or intramuscular anticholinergic-antiparkinsonian medications (Campbell, 2001; Sharma et al., 2009). Clinicians should be aware of such side-effect and should consider co-prescribing anticholinergic medications at the initial phase of the treatment with paliperidone.

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