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Case Report

Risperidone: Suicide Attempt and Dystonic Reaction in Childhood Period

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Abstract

Risperidone (Risperdal 0.5 mg) is an atypical Antipsychotic drug used to treat various psychiatric illnesses - predominantly psychoses- in both adults and children. We describe a case of a 10-year-old boy who ingested 3 mg (six tables) of risperidone with suicidal intent. This patient showed only a transient dystonic reaction without any other side effects. He was treated with fluids and biperiden 0.05 mg/kg IM. He was discharged from hospital a few days later with no neurological sequelae. Second-generation antipsychotic drugs like Risperidone are known to have minimal side effects at low doses. Nonetheless, when our case is considered, risperidone may cause acute dystonic reactions in children even at moderate doses.

Keywords: Dystonic Reactions; Risperidon; Suicide Attempt

Introduction

Risperidone is a second-generation antipsychotic drug and has antagonistic effect on both Type 2 Dopamine (D2) and Type 2A serotonin (5HT2A) receptors. In 2006, risperidone received FDA approval for the treatment of irritability and aggression in children with autism aged between 5-16 years [1]. Risperidone can cause metabolic side effects, such as impaired glucose tolerance, dyslipidaemia and weight gain. As doses of risperidone exceeding 2-3 mg/day extrapyramidal side effects characteristic of first- generation Antipsychotic drugs become more likely. One example of the extra pyramidal symptoms is acute dystonia which is characterized by involuntary, slow, and sustained contractions of muscle groups which may result in twisting, repetitive movements, and abnormal posturing [2].

Case Report

A 10-year-old boy weighing 43 kg was referred to a pediatric psychiatrist because of behavioral problems. He was medicated with 0.5 mg risperidone (Risperdal 0.5 mg tabs) per day by the pediatric psychiatrist. After three days he attempted suicide by taking six tablets, 3 mg total, of risperidone. Three and a half hours later he was brought to emergency department by his family with the chief complaint of spasm of the extra orbital muscles, with upward and outward deviation of the eyes (blepharospasm, oculogyric crisis) and head turned spastically to the right (torticollis). Body temperature, heart rate, respiratory rate, and blood pressure were within normal limits for his age. Except for the involuntary movements, the physical and neurological examinations were normal. Risperidone induced acute dystonia was suspected and a nasogastric catheter was placed and gastric lavage performed followed by nasogastric tube administration of 50 g activated charcoal in 70 % sorbitol solution. Laboratory findings included blood count, electrolytes, liver and renal function tests, and urinalysis were normal. He was subsequently transferred to pediatric neurological unit and he was treated with intramuscular injections of biperiden 0.05 mg/kg single dose and the acute dystonic signs remitted progressively over 2 hours. He was discharged from the hospital a few days later with no neurological sequelae. During psychiatric examination at

the first day of hospitalization, he was alert and cooperative. Although he had eye contact, he had not enough collaboration with the examiner and had difficulty staying focused and paying attention. It was observed that he had hyperactivity. There wasn't any psychiatric signs. From his family, it was learned that he had disturbances in peer relationships especially with his friends and low school performance. In last 10 days, he had outbursts of anger and feelings of worthlessness. According to these findings, he was diagnosed as Attention Deficit Hyperactivity Disorder (ADHD) with depression.

Discussion

Although, provocation of suicidal thought or action is being discussed as a potential side effects of antipsychotic drugs, we did not encounter such a side effect in pediatric age group in the literture. Suicide attempt in a 10 year old child is an unexpected situation. This attempt could be due to an underlying mental illness or conceivably a side effect of risperidone. This side effect of risperidone is also an issue in adults but there are still on-going discussions about this [3]. Dystonic reactions are well known adverse reactions of many drugs. The causative drugs are commonly antidopaminergics, such as antipsychotics, antiemetics and less frequently, anticonvulsants and antidepressants [4]. Dystonia can occur immediately after ingestion of a single dose or over the course of several days of administration of therapeutic doses, after dose increase or as a manifestation of overdosage. Signs and symptoms in pediatric age group tend to be dramatic and occur within the first 72 hours of medication [5]. In recent years, psychopathological diagnoses in children and adolescents are more often made and due to the increasing frequency of diagnosis the consumption of antipsychotic drugs is also increasing. Opler et al. have detected that almost 21% of the children aged between 9-17 years have some degree of impairment due to mental disorders [6].

This why prescription of second-generation antipsychotic drugs (SGAs) in children and adolesants has increased throughout the world in the last 15 years. Linton et al. demonstrated that risperidone is used often in the treatment of anxiety and behavioral disorders and drug of choice in the management of psychotic symptoms compared to other antipsychotics [7]. Risperidone is a second-generation antipsychotic drug that, at low doses mainly block serotonin 5-HT2A receptors and at higher doses also block dopamine D2 receptors [8]. Such second generation anti-psychotic drugs are thought to be less likely to produce extrapyramidal side-effects compared to classical antipsychotics that have less 5-HT2A binding and greater D2 binding. Placebo-controlled study of risperidone in children with autism and other pervasive developmental disorders has been conducted in Canada. A total of 79 children (mean age 7.5 years) were randomized to either risperidone (mean dose, 1.2 mg/d) or placebo group for 8 weeks. As a result there were no differences in extrapyramidal symptoms between the placebo and risperidone groups. No cases of acute dystonia were seen in this study [9]. Common adverse effects that had been detected were increased appetite, somnolence, and rhinorrhea whereas there was no extrapyramidal side effect [10]. In light of the above mentioned literature, risperidone seems to be a safer drug of choice in pediatric age group compared to first generation antipsychotic agents. Nevertheless our case report establishes acute dystonia as a risk with risperidone at higher doses. The use of antipsychotic drugs has increased in the last decades, and uses expanded to include use in non-psychotic conditions. While it has the potential to provide considerable benefits for pediatric patient populations, it is also associated with potential for serious adverse effects. In conclusion, the benefit to risk ratio must be evaluated for each child and his/her family prior to initiating treatment. Parents must be educated to prevent children from having free access to drugs, avoiding self-medication or overdose.

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