Case Report

Deliberate Ingestion of Powder Containing Formoterol Fumarate and Mometasone Furoate – A Case Report

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ABSTRACT

Deliberate self-harm is one of the important healthcare problems seen all over the world. Harming oneself by ingestion of poisons or excessive doses of medicines is one of the main methods employed.

A case of deliberate ingestion of dry powder for inhalation [Respicaps] containing a mixture of formoterol fumarate and mometasone furoate is reported here. This combination of drugs for inhalation is sometimes prescribed to patients suffering from asthma.

This report highlights the paucity of medical literature on the effects of overdose of such a medicinal product.

Key Words: Formoterol fumarate; Mometasone furoate; Respicaps

INTRODUCTION

Deliberate self-harm is one of the important healthcare problems seen all over the world. Self-poisoning by ingestion of poisons or excessive doses of medicines is usually the main method employed. A case is being reported here involving deliberate ingestion of dry powder for inhalation [Respicaps] containing formoterol fumarate and mometasone furoate, meant for treatment of asthma.

The Case: A 22-year-old female patient was brought to the emergency department of the hospital with history of consumption of 20 capsules (respicaps) of dry powder for inhalational treatment of asthma, containing formoterol fumarate and mometasone furoate. She had deliberately ingested these "Respicaps" about an hour ago, following a quarrel with her mother. The patient was an asthmatic and had been advised to inhale these "Respicaps" using specific dry powder inhaler (DPI) device.

On admission, she was conscious and complained of palpitations with tremors of the hands. Her heart rate was 110/min; blood pressure was 110/70mm/Hg. There was no cyanosis, but sweating was evident. Examination of the chest and abdomen did not reveal any abnormality except tachycardia.

Routine laboratory investigations revealed normal haematological parameters. Her liver function tests, renal parameters and electrolytes were normal. Urine examination was also normal. Chest X-ray did not reveal anything abnormal, while the ECG was also essentially normal except for tachycardia. There were no arrhythmias.

The patient was managed with IV fluids, parenteral ranitidine and antacids. A stomach wash administered. She was monitored for cardiac arrhythmias and was discharged after two days. She was followed up after a week and displayed no symptoms.

DISCUSSION

The "Respicaps" which were ingested by the patient in this case are gelatin capsules containing formoterol fumarate and mometasone furoate for DPI. These "Respicaps" meant to treat her asthma, were to be inhaled through the mouth using specific DPI device. Each capsule contained formoterol fumarate dihydrate equivalent to 6 mcg of formoterol fumarate and 200 mcg of

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mometasone furoate. Formoterol fumarate is a long-acting, selective, beta-2 adrenergic receptor agonist (beta-2 agonist). Inhaled formoterol fumarate acts locally in the lung as a bronchodilator. On the other hand, mometasone furoate is a corticosteroid with potent anti-inflammatory activity. mometasone furoate/formoterol (MF/F) is a novel combination therapy for the treatment of persistent asthma.[1,2]

There is plenty of literature available on the adverse effects of formoterol fumarate and mometasone furoate when used as inhalation. Formoterol fumarate, like other beta-2 agonists, can produce a clinically significant cardiovascular effect in some patients in the form of tachycardia, arrhythmias, hypertension/hypotension, nervousness, headache, seizures, tremor, dry mouth, muscle cramps, dizziness, fatigue, malaise, nausea, insomnia, etc. Overdose can lead to exaggeration of these clinical effects. Metabolic acidosis, hypokalaemia, cardiac arrest and even death may occur.[3,4] The most commonly reported adverse events with mometasone furoate include headache, allergic rhinitis, pharyngitis, upper respiratory infection, sinusitis, oral candidiasis, musculo-skeletal pain and dyspepsia.[5] Paradoxical bronchospasm may be seen with both these agents.[6]

But there are hardly any data available on the adverse effects, absorption, metabolism and excretion of these agents when taken orally. The patient in the case being reported had ingested a total of 120 mcg of formoterol fumarate and 4000 mcg of mometasone furoate. She did show some clinical features suggestive of sympathomimetic stimulation due to formoterol fumarate in the form of tremor, palpitations and sweating, but the ECG did not show any evidence of cardiac arrhythmias except for sinus tachycardia. There was no evidence of hepatic or renal impairment.

There is a steady increase in the incidence of deliberate self-harm by intentional poisoning among the youth in India. Nuclear family, socio-economic factors, stress at the workplace, mounting pressures for enhanced academic performance, disharmony among family members, broken love affairs, lack of attention from working parents, ongoing physical and psychological changes after attaining puberty, etc are some of the reasons responsible for this. Such distressed individuals tend to use anything and everything for deliberate self-harm in the heat of the moment, and much of the time they tend to ingest chemicals or drugs that are immediately available. It is a great challenge for the treating clinician to predict the adverse effects or toxicity of relatively uncommon agents as seen in this patient. Due to the paucity of information, the treating clinician is likely to be unsure of correctly handling such cases. It is the duty of every clinician to report such unique experiences by way of publications to enrich medical literature, and thereby help in better management of cases in future.

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