

Haloperidol Induced Dystonia : A Case Report

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ABSTRACT

Haloperidol is a typical anti psychotic drug which is widely used for schizophrenia and it is a dopamine inverse agonist that can cause extra pyramidal side effects like involuntary, stereo typed contractions of muscles. Dystonia is majorly caused by anti psychotic drugs. We report a case of 28 years male patient who was admitted to the general medicine department of SVRRGGH, Tirupati with the complaints of neck stiffness and painful sensation in neck since 1 day. Patient's past medical history revealed that he had hospitalized four days back for organophosphorous compound poisoning and was treated with antidote i.e., Atropine (15cc q4hrly intravenously) & Pralidoxime (2g in 100ml NS IV BD). Patient developed psychosis on 1st day after administration of Atropine. Psychosis was treated with Serenase (Haloperidol 2amp IM SOS) for 1 day and later he presented with complaints of neck stiffness and painful sensation in neck. He was treated with Tab. Trihexyphenidyl 2mg orally once daily and Tab. Chlorpheniramine Maleate 1mg orally once daily. After that, dystonia was resolved and patient was discharged from the hospital. While prescribing antipsychotics, the half life should be kept in mind especially for haloperidol that can cause acute adverse effects and hence consider prescribing orally to avoid dystonia in population.

Keywords: Haloperidol, dopamine antagonist, extra pyramidal symptoms, dystonia

INTRODUCTION

Haloperidol is a psychotropic drug of the butyro-phenone family and used for long-term therapy such as schizophrenia, senile psychosis or the manic phase of bipolar disorders.

Haloperidol is a dopamine inverse agonist prescribed frequently for the treatment of schizophrenia because of its effective action against the typical symptoms like hallucinations and delusions in schizophrenia. It is a typical antipsychotic agent that causes extra pyramidal syndrome (EPS), which includes a group of movement disorders like dystonia, akathisia, tardive dyskinesia and

Parkinsonism. EPS symptoms are neurological disturbances caused by antipsychotics in the area of the brain that controls motor coordination.^[1]

Dystonia is a sustained abnormal posture or muscle spasm that develops within seven days of starting therapy or rapidly increasing the dose of the antipsychotic medication. Dystonia generally occurs within seven days of administration of antipsychotic.

Insidious development of dystonia include idiopathic and Huntington's disease, Wilson's disease, levodopa-responsive dystonia and conversion reaction. These conditions cause a twisted neck, such as orthopedic or

congenital problems of the neck, ophthalmologic conditions resulting in head tilt to compensate for vision problems, stiff neck, arthritis, or wry neck, that need to be ruled out. Others like emotional stress, fatigue, viral infections, hypocalcaemia, hypoparathyroidism and dehydration also increase risk of dystonia.^[2]

Dystonia induced by antipsychotics like Haloperidol, Fluphenazine, and Pimozide are more frequent than do low potency drugs such as Chlorpromazine and Thioridazine, Antiemetic and antidepressant drugs. Fleeting movements occur and disturb the abdominal postures and muscle stiffness causes postural distortion. These are painful and uncomfortable and the patient gets agitated and frightened.^[3]

Dystonic reactions are generally mistaken for tetany and convulsions, hence proper assessment is needed while diagnosing dystonia. In dystonia the muscles of the head and neck are most commonly affected. Involvement of the laryngeal and pharyngeal muscles may lead to respiratory distress, asphyxia, choking. These symptoms provoke the anxiety. Acute dystonia involving the trunk may result in the characteristic posture of opisthotonus these may cause toxicity, Strychnine poisoning, drug seeking behaviour and it increase the risk of somnolence, motor akathisia. Dystonia major complications include neuroleptic malignant syndrome and torsades de points. Tardive dystonia, defined as an involuntary movement predominated by dystonia and associated with the use of a dopamine receptor blocking agent.^[4]

When a patient is treated with high potency antipsychotic drugs, a low starting dose is recommended because this reduces the risk of acute dystonia compared with a standard dose.^[5]

Antiparkinsonian agents are also responsible for dystonia. Intramuscular agents like Benzotropine or Diphenhydramine produce complete resolution within 20 to 30 minutes. The dose can be repeated after 30 minutes if complete recovery does not occur.⁶ In addition, oral Anticholinergics like Trihexyphenidyl 60 to 80mg/day are used to treat dystonia.

Previous studies showed promising results using different kinds of therapeutic agents like dopamine depleting agents such as Tetrabenazine or Reserpine, Clonazepam, Baclofen and Benzodiazepines. But the large doses of Clonazepam, Baclofen, or benzodiazepines have given mixed results. Tardive dystonia usually responds to deep brain stimulation. Recent studies showed that Globus pallidus interna has emerged as the most promising target for dystonia.^[7]

CASE HISTORY

A 28 years male patient was admitted to the general

medicine department of SVRRGGH, Tirupati with complaints of neck stiffness and painful sensation in neck since 1 day. His past medical history revealed that he had been hospitalized four days back for organophosphorous compound poisoning with complaints of two episodes of vomiting, altered sensorium since 2 hours, froth from mouth, two episodes of diarrhea.

For this, he was treated with antidote s.i.e., Atropine (15cc q 4hrly intravenously) and Pralidoxime (2g in 100ml NS IV BD) and with prophylaxis of antibiotics including Inj. Ceftriaxone 1g BD, Inj. Metronidazole 100ml TID. Patient developed psychosis on 1st day after administration of Atropine. Psychosis was diagnosed based on patient's irrelevant talk, not obeying commands and fasciculation. Psychosis was treated with Serenase (Haloperidol 2amp IM SOS) for 1day later which he complained of neck stiffness and painful sensation in neck.

On respiratory system examination patient was found to have bilateral diffuse crepts. On the 6th day patient was prescribed with Inj. Pantoprazole 40mg IV OD, Inj. Serenase 2CC whenever atropine induced psychosis occurs and added Inj. Piperacillin 4.45g TID and continued the same therapy.

Based on the complaints, physical examination and past medical history of the patient, he was diagnosed as having "Anti-Psychotic Induced Dystonia". Later he was treated with Tab. Trihexyphenidyl 2mg orally once daily and Tab. Chlorpheniramine Maleate 1mg orally once daily. After that the patient was resolved with the symptoms of dystonia and got discharged from the hospital.

DISCUSSION

In this case report, we aim to discuss organophosphate intoxication due to suicide attempt. This patient is treated with atropine sulphate and Pralidoxime for two days. Although anti cholinergic agents such as atropine and scopolamine are known to cause delirium and psychosis, this condition is frequently under recognized in patients being treated at intensive care units.

In this patient agitation, disorientation and memory impairment due to psychosis induced by central Anticholinergic effects of atropine were observed. Rapid improvement in our case after cessation of atropine and the introduction of antipsychotics (haloperidol) supports the diagnosis of psychosis due to atropine.^[8]

Haloperidol is widely used to treat psychosis because of the lack of cardiovascular side effects and it controls agitation with virtually no adverse respiratory, cardiac, renal or hematopoietic effects. Haloperidol side effects also include unusual, slowed, or uncontrolled

movements of any part of the body, stiff or weak muscles, nervousness, agitation, blank facial expression, slowed breathing, sleepiness and loss of consciousness, Chipped teeth, temporomandibular joint (TMJ) dislocation, tongue lacerations. However dystonia of the laryngopharyngeal muscles can cause throat tightness and dysphagia prompting inappropriate and hazardous medical interventions.^[9]

As the elimination half-life of haloperidol is 17 to 18 hours, it can provide long term effect. Alternatively, patients can also experience a nearly immediate adverse drug effect, when given in intravenous route. Oral haloperidol may be associated with an EPS that is less severe.^[10]

CONCLUSION

In conclusion the Inj. Haloperidol for treatment of atropine induced psychosis carries the risk of dystonic reactions in a large group of population. It is a significant burden to patients and may result in medication non adherence or abandonment of therapy. Clinicians and pharmacists should understand that drug induced dystonia can occur acutely (i.e., hours to days after drug exposure), subacutely (i.e., within weeks after exposure), or months to years after drug exposure.

On resolution of dystonic symptoms, patients require a course of oral prophylaxis of anti-cholinergic drugs, e.g. procyclidine 5mg TDS, for up to a week and also recommend diazepam (a GABA agonist) can be used in refractory cases where the patient has not responded to anticholinergics. Therefore, prevention is essential. Knowledge of antipsychotics and their side effects allow the health care professional to better identify patient's risk for them and implement prevention plan and therapy. Patients are at increased risk of developing extra pyramidal side effects when they are treated with typical Anti-Psychotics drugs.

It is good to go on with second generation/ atypical antipsychotics like Olanzapine, Quetiapine etc. But selection of these drugs should be based on the patient's

clinical condition and improvement. While prescribing antipsychotics, their half life should be kept in mind, especially for haloperidol and try to prescribe orally to avoid dystonia in population.

CONFLICT OF INTEREST :

The authors declared no conflict of interest

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