Tardive Dsykinesia In A 70year Old Man On 6 Months Haloperidol Therapy, A Case Report

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Abstract:

Mental health conditions have been the major problems of mankind for centuries with anti psychotic medications employed in the management have been associated with myriad of uncertainties. Haloperidol being among the first generation antipsychotic medication has been shown to be associated with tardive dyskinesia[1]. However, tardive dyskinesia is a clinical condition characterized by abnormal involuntary movements of the body and can range from occasional debilitating involuntary movements to terrible dystonia and are associated with increased mortality rates in patients with schizophrenia[2]. Moreover, typical antipsychotics exert their effects through D2 receptors. If too many D2 receptors are blocked in the nigrostrital pathway, movement disorders occur. If D2 blockade in the nigrostriatal pathway is sustained, tardive dyskinesia may occur as a result of hypersensitivity in D2 receptors.[3]

Keywords: Tardive Dyskinesia, Haloperidol, First Generation Anti-Psychotic, Schizophrenia

Introduction;

Haloperidol, a potent first generation antipsychotics used in the management of schizophrenia; which is a chronic psychosis characterized by delusions, hallucinations (often in the form of voices), and thinking or speech disturbances[1]. It is a competitive inhibitors at a variety of receptors, but their antipsychotic effects reflect competitive blocking of dopamine D2 receptors. First-generation antipsychotics are more likely to be associated with movement disorders known as extrapyramidal symptoms (EPS), particularly drugs that bind tightly to dopaminergic neuroreceptors. Adverse effects involve extrapyramidal effects, tardive dyskinesia, acute dystonia, neuroleptic malignant syndromes, insomnia, confusion, drowsiness, constipation, urinary retention, dry mouth, infertility, galactorrhea, orthostatic hypotension and precipitation of seizure in patients with high seizure threshold and suicidal ideation among those with mood disorders.[1]

However, tardive dyskinesia, motor disorders, which are abnormal involuntary movements including bilateral and facial jaw movements and fly-catching movements of the tongue, precipitated by the use of antipsychotic medications especially haloperidol.[1] A prolonged holiday from antipsychotics may cause the symptoms to diminish or disappear within a few months. Furthermore, in many individuals, tardive dyskinesia can be irreversible and persists after discontinuation of therapy.[1]

The annual incidence of tardive dyskinesia involves 5.5% for first generation antipsychotics and 3.9% for second generation.[4] Its prevalence in the long term use of anti-psychotic ranges from 15% to 30% respectively.[2] However, tardive dyskinesia syndromes are most often induced by neuroleptics and are associated with accelerated morbidity

and mortality rates in persons with schizophrenia.[5,6] Also, it can develop within first few years of exposure to neuroleptics in contrast with long term exposure.[7]

Suhas 2022 et al postulated that in 75% of the individual, the oro-buccal-lingual or facial musculature is involved. The limb muscles are involved in 50% of the affected individuals while the trunk is involved in 25% of the affected individuals.[2] Also, one in ten patients with tardive dyskinesia have been shown to have involvement of all the three areas.[8]

The following risk factors are congruent in developing tardive dyskinesia as opined by Cornett et al 2017 and Rajan et al 2018 which are older age, later age at onset, female gender, mood disorder, comorbid substance use, a greater number of episodes of illness, poorer cognitive functioning, mental illness example bipolar type 1, greater exposure to antipsychotics, use of lithium and anti-parkinsonism medications, diabetes mellitus, and presence of early anti-psychotic extra-pyramidal side effects during anti-psychotic therapy.[4, 9]

In this case report, the treatment of a 70year old male patient who has been on 6 months haloperidol therapy for the management of schizophrenia developed tardive dyskinesia will be presented.

Case report;

A 70-year-old man who had been on 6 months haloperidol therapy presented to the emergency room on account of body pain, facial grimace and tongue rolling with a positive family history of schizophrenia. At initial diagnosis of schizophrenia 6months ago; due to intermittent episodes of auditory hallucinations and delusions, he was placed on 2.5mg/day haloperidol.

A physical examination, routine laboratory tests, and urgent computerized tomography of the brain revealed no positive signs for organic mental disorders.

He was diagnosed as tardive dyskinesia associated with haloperidol therapy. Haloperidol was immediately discontinued and patient placed was on tetrabenazine 25mg/day and sent to psychiatrist clinic for further review. Tetrabeanzine was unavailable and it was replaced with 5mg/day clozapine with close monitoring. At the time of writing this report, the tardive dyskinesia is gradually resolving when compared with the initial episode.

Discussion;

Tardive dyskinesia can include an onset after 3 months or less of starting neuroleptics[10] or more but may manifest even with a shorter duration of exposure.[2]

The pathophysiological mechanisms remain unclear.[11] It has been opined that post synaptic dopamine receptor supersensitivity (possibly D1 and D2 receptor blockages) as a result of prolonged exposure to anti-psychotics could be a triggering factor but the use of animal models remain obscured.[12]

Sachdev PS et al 2000, opined the concept of oxidative damage to GABAergic striatal neurons leading to disinhibition of lateral pallidal neurons and subsequent alteration of the dopaminergic tone seen.[8] While GABA hypothesis involves neuroleptic-induced damage to the striatal GABAergic medium sized spiny neurons has also been postulated.[13]

In a meta analysis conducted by Carbon et al in 2017 showed that the mean pooled rate of tardive dyskinesia with the use of first generation antipsychotics was around 30% and second generation anti-psychotics was approximately 20%.[14] Consequently, the risk of developing tardive dyskinesia is about 5% of patients per year of antipsychotic exposure. About one-tenth of patients with bipolar affective disorder type 1 have tardive dyskinesia.[15]

Although DSM-5 recommends the diagnosis of tardive dyskinesia to be made after ruling out withdrawal emergent dyskinesia up to 8weeks of neuroleptic discontinuation or dose reduction and highlights that in elderly presentation, it could even manifest with a shorter duration of exposure.[16]

Furthermore, it has been observed that tardive dyskinesia could initially be seen as subtle vermicular tongue movement at rest when observed with tongue in the oral cavity.[8] With worsening condition, fly-catching sign (such as intermittent thrushing of the tongue out of the mouth) and bou-bou sign (tongue pressing against cheek) can also been seen.[8] Discontinuation of the haloperidol can result in disappearance of this condition. The disappearance of tardive dyskinesia may have resulted from an anti-dyskinetic effect of olanzapine [17, 18] or its masking effect.[19] Though evidence suggests that the use of clozapine may be the molecule of choice [20, 21], but this clozapine may also be associated with tardive syndromes.[22,23]

There is limited evidence on the use of deutetrabenazine, tetrabenazine and valbenazine[3], to show a promising disappearance of tardive dyskinesia but caution should be employed in patients with renal, hepatic impairment and in those with chronic insomnia syndrome.[2] This present report indicates that tardive dyskinesia may result from exposure to haloperidol as in the case of the index patient.

Conclusion:

Tardive dyskinesia runs a chronic debilitating adverse course and every clinicians should be aware of the risk factors, clinical course and progression and the treatment modalities. Though the earliest management involves discontinuation of the precipitating agents, short course of diazepam and vitamin E therapy,[2] and the use of benazine derivatives such as deutetrabenazine, tetrabenazine or valbenazine, the promising prospects do more good than harm.

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Conflict of interest; None

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