

Prevalence and Pattern of Drug Induced Movement Disorders in University of Port Harcourt Teaching Hospital (UPTH): A 3 – Year Review

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Received: December 03, 2016; **Published:** December 16, 2016

Abstract

Background: Drug Induced Movement Disorders (DIMDs) are quite common particularly in the setting of antipsychotic use. DIMDs are common with the typical neuroleptics and have become important in the light of limited affordability of atypical antipsychotic drugs and through the later can cause extra pyramidal symptoms but it is rare. These disorders have become relevant in view of the fact that they determine to a large extent drug adherence, legal issues and indeed the prognosis of the primary disorder. In addition, the psychosocial burden these complications of treatment impact on both patients and relatives have made this study imperative. Finally, there is currently no adequate data indicating the exact prevalence and pattern of DIMDs in this environment.

Objective: To determine the prevalence and pattern of drug induced movement disorders in patients on neuroleptics in UPTH.

Methodology: In this prospective study, out of the 2057 patients seen between Jan 2008 – Dec 2010, both as in or out - patients, 103 patients were secondarily diagnosed to have Drug Induced Movement Disorders using the Involuntary Movement Disorder Schedule criteria. This self-administered questionnaire were administered to all patients. The results were analysed.

Results: Out of a total number of 2057 cases seen between 2008 – 2011, 1673 patients were managed with antipsychotic medication. A total of 103 out of this number, representing 6.2%, were diagnosed with either acute or late onset Drug Induced Movement Disorders (DIMD). Out of the total cases, 62 (60.2%) were males while 41 (39.8%) were females. All patients were aged between 18 – 78 years. The common cases that were found with their sex predilection include, acute dystonic reaction in 47 of the 103 patients (45.6%) with a male to female ratio of 2:1, drug induced parkinsonism 28 (27.2%), 2:1; akathisia 15(14.6%), 1:1; tardive dyskinesia 6 (5.8%), 1:2; neuroleptic malignant syndrome 7 (6.8%), 2:1.

Conclusion: The prevalence of DIMDs in UPTH is relatively low (5%) and has been due largely to a shift from the traditional typical neuroleptic to the newer atypical antipsychotics, gradual increase in the dose, careful drug selection (patient-drug match), careful drug initiation and adjustment while the pattern of DIMDs is consistent with several studies worldwide.

Keywords: Prevalence; Pattern; Drug Induced Movement Disorders; UPTH

Introduction

The use of dopamine receptor-blocking drugs (DRBD) may result in a variety of acute or chronic involuntary movements [1-5]. Acute-onset movement disorders arising from initial or escalation of the dose of drugs that block dopamine receptors (primarily D2 receptors) including dystonia, parkinsonism, akathisia, and neuroleptic malignant syndrome (NMS) [2-4].

Late-onset (tardive) movement disorders typically manifest three months or later (this varies) after exposure to a DRBD, with stable therapy, an increase in the dosage of the offending agent, or after discontinuation of treatment with the same. These late-onset disorders are referred to in general as tardive syndromes and may include classical dyskinesia (often referred to as a stereotypy), dystonia, chorea, akathisia and others. Historically, the field of psychiatry has used the terms tardive dyskinesia and extrapyramidal symptoms to describe oro-bucco-lingual dyskinesia (OBLD) or facial dyskinesia, that results from the use of typical or atypical antipsychotic drugs [5-9].

Drug Induced Movement Disorders (DIMDs) are quite common particularly in the setting of antipsychotic use and are most times under recognised by clinicians [10,11]. They constitute a worldwide problem in the treatment of psychotic conditions, and have been of major limitation in the use of typical antipsychotics since their discovery in the early 1950s. DIMDs are common with the typical neuroleptics and have become important in the light of limited affordability of atypical antipsychotic drugs and also because even the later can cause extrapyramidal symptoms (Baldessarini R.J, 2002). Neuroleptics work via 3 main pathways [12-17]. Of the 3 major pathways, the Nigrostriatal pathway remains the most relevant in the aetiology of DIMDs resulting from the use of antipsychotic such as the typical antipsychotic.

Studies have shown that between 29 - 74% of all those on neuroleptic will experience one form of movement disorder [13]. These disorders have become relevant in view of the fact that they determine to a large extent drug compliance, emergent legal issues and indeed the prognosis of the primary disorder. In addition, the psychosocial burden these complications of treatment impact on both patients and relatives have made this study imperative.

Finally, there is currently no adequate data indicating the exact prevalence and pattern of DIMDs in this environment.

Objective

To determine the prevalence and pattern of drug induced movement disorders in patients on neuroleptics in UPTH.

Methodology

In this prospective study, out of the 2057 patients seen between Jan 2008 – Dec 2010, both as in or out - patients, 103 patients were secondarily diagnosed to have Drug Induced Movement Disorders using the Involuntary Movement Disorder Schedule criteria. This self-administered questionnaire was administered to all the patients.

Results

Out of a total number of 2057 cases seen between 2008 – 2011, 1673 patients were managed with antipsychotic medication. A total of 103 out of this number, representing 6.2%, were diagnosed with either acute or late onset Drug Induced Movement Disorders (DIMD). Out of the total cases, 62 (60.2%) were males while 41 (39.8%) were females (Table 1). All patients were aged between 18 – 78 years (Table 2).

Sex	Frequency	Percentage (%)
Females	62	60.29
Males	41	39.8
Total	103	100

Table 1: Sex Distribution.

Age	Number with DIMD	Total Number Managed with Antipsychotics
0 -20	2 (0.12%)	124
21-40	45 (2.69%)	768
41-60	37 (2.21%)	553
61-90	19 (1.14%)	228
Total	103	1673

Table 2: Age Distribution.

Parkinsonism and tardive dyskinesia were common in the older age while acute dystonias was common in the younger age. Both akathisia and neuroleptic malignant syndrome were common in the middle age group. 68 (66.0%) were out – patients while 35 (34.0%) developed DIMDs while on admission. 30 (29.1%) out of the total number seen in the out-patient clinic were diagnosed at presentation. 69 (66.9%) patients were on high potency typical antipsychotic both depo injection and oral medication (eg fluphenazine and haloperidol). 27 (26.2%) were on low potency typical neuroleptics (eg chlorpromazine) while 7 (6.8%) were on the newer (atypical) drugs (Table 3).

	Initial Number	Number of Those WIT DIMD
High potency typical	452	69(15.3%)
Low potency typical	310	27(8.7%)
Atypical antipsychotics	871	7(0.8%)
Total	1673	103

Table 3: Type of Antipsychotic Medication.

The common cases that were found with their sex predilection include, acute dystonic reaction in 47 of the 103 patients (45.6%) with a male to female ratio of 2:1, drug induced parkinsonism 28 (27.2%), 2:1; akathisia 15(14.6%), 1:1; tardive dyskinesia 6 (5.8%), 1:2; neuroleptic malignant syndrome 7 (6.8%), 2:1 (Table 4). Most of the cases of acute dystonia, Parkinsonian-like syndrome, akathisia and neuroleptic malignant syndrome occurred within 3 – 7 days of commencement of medication and rarely within two weeks while tardive dyskinesia occurred within 3 – 9 months following exposure to antipsychotic medications.

DIMS	Frequency (%)	Sex Ratio	Average Time After Commencement of Neuroleptics
Acute dystonic reaction	47 (45.6%)	2:1	5 days
Drug induced Parkinsonism	28 (27.2%)	2:1	6 days
Akathisia	15 (14.6%)	1:1	7 days
Tardive dyskinesia	6 (5.8%)	1:2	6 months
Neuroleptic Malignant Syndrome	7 (6.8%)	2:1	5 days
Total	103		

Table 4: Pattern of Drug Induced Movement Disorder Among Study Group.

Discussion

In this study, we observed a marked decrease in the prevalence of DIMS (5%) compared to other studies done elsewhere (25 – 34%) [2]. However, recent studies have generally shown a reduced prevalence off the DIMS [8,18-21]. The reduce prevalence in this study could be attributed to a marked shift from the use of the traditional typical agents to the newer generation antipsychotics.

However, in spite of the high incidence of CNS side effects associated with the typical agents even with careful patient-drug selection, they are still fairly in use due to the high cost of the atypical agents. It is however important to note that before considering them, efforts are made to rule out risk factors for developing DIMS in the patient [5].

Drug-induced dystonia, a twisting movement or abnormal posture (or a combination thereof) may manifest as acute or tardive involuntary limb movements, facial grimacing, cervical dystonia, oculogyric crisis, rhythmic tongue protrusion, jaw opening or closing, spasmodic dystonia, and, rarely, stridor and dyspnea. The acute form typically occurs within 2 to 5 days after initiation of treatment with a DRBD [3].

The features of idiopathic Parkinson disease comprise the same primary characteristics of drug-induced parkinsonism: rest tremor, bradykinesia, rigidity, and postural instability. Lack of recognition is a primary impediment to treatment, as cessation of the causal agent will lead to resolution of symptoms in drug-induced parkinsonism. In some patients, however, symptoms may endure for 18 months or even longer.

The stereotypies of classic tardive dyskinesia (i.e. OBLD) are characterized by well-coordinated continual movement of the mouth, tongue, jaw, and cheeks and may include lip smacking, cheek puffing, and tongue thrusting. Jaw movements may be lateral or resemble chewing motions. The tongue movements may be writhing or twisting (choreoathetoid). In addition to having OBLD, patients treated with antipsychotic drugs may also have trunk movements, which are typically in the form of pelvic thrusting, trunk twisting, or choreoathetotic or flicking of the extremities. Some patients may have a mix of movement disorders that include OBLD, dystonia, myoclonus, akathisia, parkinsonism.

Akathisia (literally meaning, an inability to sit) manifests as an inner feeling of restlessness and stereotypic movements, such as marching in place and crossing and uncrossing the legs while sitting [1]. Akathisia is the only drug-induced movement disorder that does not have an idiopathic counterpart, although it may be a manifestation of Parkinson's disease [8].

Neuroleptic malignant syndrome is an abrupt, life-threatening, idiosyncratic response that occurs in approximately 0.2% of patients after they receive a therapeutic dose of a DRBD. The symptoms include hyperthermia (> 38°C), mental status change, muscle rigidity and other movement disorders, and autonomic dysregulation.

Conclusion

The prevalence of DIMDs in UPTH is relatively low (5%) and has been due largely to a shift from the traditional typical neuroleptic to the newer atypical antipsychotics, gradual increase in the dose, careful drug selection (patient-drug match), careful drug initiation and adjustment while the pattern of DIMDs is consistent with several studies worldwide.

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Volume 4 Issue 1 December 2016

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