Pharmacovigilance of Psychoactive Medications in a Mexican Psychiatric Hospital

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Abstract

Pharmacovigilance is the permanent collection and assessment of the safety data of drugs in the interest of precise knowledge of the safety profile. We monitored notifications of suspected adverse reactions (AR) produced by psychoactive medications (ARPM) in a Psychiatry Hospital, during a 4-month period. Yellow cards for adverse reaction reporting were distributed to the medical personal at the Hospital Psiquiátrico Villa Ocaranza, Pachuca Hidalgo, Mexico. For each notification, the ARPM was analyzed in order to verify causality. One hundred twelve hospitalized patients entered the study (44 male and 68 female). The mean $\pm$ SD age of the patients was 46 ± 4.5 years. The major diagnoses found were: schizophrenia (35.7%), severe mental retardation (17 %), moderate mental retardation (MMR)/epilepsy (12.5%), MMR (8.03%), and others (26.7%). During the study there were 721 therapeutic regimens prescribed to patients on psychiatric service. Patients were receiving an average of 5.3 ± 1.1 (range 4 to 8) psychiatric medications. The psychiatrists reported only 5 ARPMs in five patients (prevalence: 4.46%). Among the drugs involved were neuroleptics (47.8%), antiepileptic (39.1%), and others (13.04%). The organs and systems affected by the ARs were the central nervous system, skin, endocrinological and gastrointestinal. A causal association between the medication and the AR were classified as probable in three cases, as possible in one case, as doubtful in one case and as definite in no case.

Introduction

Psychoactive medications are among the most used drugs worldwide [1]. Among psychoactive medications, those most frequently prescribed are benzodiazepines, antidepressants, neuroleptics, antiepileptics and central nervous system (CNS) stimulants [1]. These psychoactive substances are not devoid of toxicity; there are many reports of adverse reactions (AR) induced by them [1-6]. Drug monitoring (*i.e.*; pharmacovigilance) plays a critical role in detecting AR and consequently protecting patients from them.

Pharmacovigilance is defined as the science and activities concerned with the detection, assessment, understanding and prevention of adverse reactions to medicines (i.e. adverse drug reactions or ADRs). The ultimate goal of this activity is to improve the safe and rational use of medicines, thereby improving patient care and public health [7]. An "adverse event" is defined as any untoward medical occurrence that may present during treatment with a drug but which does not necessarily have a causal relationship with its use [7]. An "adverse drug reaction" is any noxious, unintended and undesired effect of a drug, which occurs at a dose used in humans for prophylaxis, diagnosis, therapy or modification of physiological functions [7]. Reporting systems have shown to be a useful tool in collecting experiences and identifying issues related to the daily use of medicines [7-9]. Therefore, the present study aimed to monitor notifications of suspected AR produced by psychoactive medicaments (ARPM) in a Psychiatry Hospital, during a 4-months period.

Material and Methods

The present study was approved by the ethics and investigation committees and carried out according to the guidelines delineated by the Helsinki Declaration.

Yellow cards for AR reporting were distributed to: 5 general practitioners, 8 psychiatrists, 10 psychologists, 130 nurses, and 4 pharmacy managers at the Hospital Psiquiátrico Villa Ocaranza, Pachuca Hidalgo, Mexico. The study was conducted from July to October 2009. For each notification, the ARPM was analyzed in order to verify causality. In this study an expert panel applied the Naranjo algorithm [9]. This algorithm classifies the reactions into four types: Definite, probable, possible, and doubtful.

Results and Discussion

It has been described that schizophrenia, bipolar I disorder, psychosis, substance abuse disorder and schizo-affective disorder are the most common diagnoses in psychiatric hospitals [10]. In the present study, one hundred twelve hospitalized patients entered the study (44 male and 68 female). The mean $\pm$ SD age of the patients was 46 ± 4.5 years. According to DSM-IV-TR the major diagnoses found in our survey were: schizophrenia (35.7%), severe mental retardation (17 %), moderate mental

retardation (MMR)/epilepsy (12.5%), MMR (8.03%), others (26.7%).

Polypharmacy is very common in the psychiatric setting despite the lack of evidence to justify its use [1-10]. Polypharmacy is also associated with higher daily dosing, more frequent use of adjunctive medications, higher rate of adverse reactions and under-utilization of atypical medications, and possibly greater costs [1-10]. During our study, polypharmacy was evident in the hospital. Seven hundred twenty one therapeutic regimens were issued on the psychiatric service. Patients received an average of 5.3 ± 1.1 (range 4 to 8) medications for their psychiatric condition.

Table I. Individual drugs prescriptions administered to patients that presented ARPMs		
Drugs	**Activity**	**n (%)**
Perphenazine	Typical antipsychotic	**3 (13.04)**
Biperiden	Antiparkinsonian	**3 (13.04)**
Sodium valproate	Anticonvulsant	**3 (13.04)**
Clonazepam	Anticonvulsant	**2 (8.69)**
Phenytoin sodium	Anticonvulsant	**2 (8.69)**
Haloperidol	Typical antipsychotic	**2 (8.69)**
Pipotiazine	Typical antipsychotic	**2 (8.69)**
Fluoxetine	Antidepressant	**2 (8.69)**
Trihexyphenidyl	Antiparkinsonian	**1 (4.34)**
Levetiracetam	Anticonvulsant	**1 (4.34)**
Risperidone	Atypical antipsychotic	**1 (4.34)**
Carbamazepine	Anticonvulsant	**1 (4.34)**

Psychotropic medications have been implicated in a variety of adverse reactions, including falls, hip fractures, delirium, and over-sedation, among others [1-10]. In the present study, psychiatrists reported only 5 ARPMs in five patients (prevalence: 4.46%). Among the drugs involved were neuroleptics (47.8%), antiepileptic (39.1%), and others (13.04%) (Table I).

The organs and systems affected by the ARs were the central nervous system, skin, endocrinological and gastrointestinal. Considering causality, i.e., the association between the medication and the AR, 3 were classified as probable, 1 as possible, 1 as doubtful and none as definite.

In the present study, the low prevalence of ARPMs could result from underreporting and raises concerns as to the wisdom of expecting the physician in hospitals to participate in pharmacovigilance.

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