

Evaluation of Prescription Patterns in Management of Agitation in Patients Referred to the Emergency Department

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Abstract

Objective: This research aims to evaluate patterns of prescription of medications used to manage acute agitation in adult Iranian patients at the emergency department (ED) of Roozbeh Psychiatric Hospital in Tehran.

Method: The study analyzed data from the medical records of 252 patients who received pharmacotherapy for agitation.

Results: The findings revealed that 181 patients (71.82%) were given typical antipsychotics, with haloperidol being the most commonly prescribed medication. Atypical antipsychotics were administered to 24 participants (9.52%), primarily olanzapine, and 52 patients (20.63%) received benzodiazepines, predominantly lorazepam. The treatment response was also assessed as appropriate in 224 patients (88.89%) and inappropriate in 28 patients (11.11%).

Conclusion: The study recommends providing new-generation medications to developing countries and underscores the importance of updating student educational programs.

Key words: *Antipsychotic; Benzodiazepine; Developing Countries; Pharmacotherapy; Psychomotor Agitation*

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Agitation management becomes complicated because of the necessity of making medical decisions based on preliminary evaluations. Pharmacotherapy may be considered as the primary treatment alone or in combination with methods like verbal de-escalation as adjuvant therapy. If possible, the physician should let the patient choose the administration route of the prescribed medicine so that the patient feels partial control of the situation. Prescribing oral medication is the least invasive drug intervention. The most commonly prescribed medicines in agitation management are benzodiazepines, second-generation antipsychotics alone or with a benzodiazepine, and haloperidol alone or with a benzodiazepine (1). The majority of principal guidelines about acute agitation control indicate that atypical antipsychotics are preferred as the first line, especially when the patient has a known psychiatric disorder (2). The second-generation antipsychotics have the low extrapyramidal complications particularly in acute administration (2). Based on our knowledge, the present study is the first report on patterns of prescription to control acute agitation in Iran. This information can help to improve professional training and the use of resources. It would also draw attention to shortage of new agents in this field. It seems that limited medication is used in such settings; however, there is no report on the pattern of use of medications in such situations in Iran.

This study aims to evaluate prescription patterns to manage agitation in Iranian patients referred to the Emergency Department (ED) of a psychiatric hospital in Tehran.

Materials and Methods

This study is an observational, cross-sectional, retrospective study exploring prescribed drug patterns. In a cross-sectional study, the researcher observes only a short period or a specific situation. The researcher takes a sample from a statistical society and investigates the distribution of variables in that sample.

Data specific to this report were gathered between August 2021 and November 2021. All patients in this study were recruited from the emergency department of Roozbeh psychiatric hospital in Iran and the research was conducted after obtaining approval from the ethics committee of Tehran University of medical sciences. The researcher designed a checklist to gather complete patient information and submitted all data. We obtained the provided information from the patients’ medical files.

Inclusion criteria were age range of 18 to 65, Iranian ethnicity, and the chief complaint of restlessness, aggression, and irritability.

If agitation did not decrease and the patient received additional medicines, second doses, or needed physical restraints for more than 30 minutes, we considered the treatment response improper.

We entered the extracted data into an excel document, and all statistical analyses were performed with Sigma Plot 14.0 software.

Ethical Consideration

This study obtained approval from the ethics committee of the Tehran University of medical sciences (Ethical code: IR.TUMS.TIPS.REC.1400.079).

Results

During this research, from 637 agitated patients referred to the ED, only 252 (about 40%) patients (with a mean age of 35.36 ± 11.2) received pharmacotherapy and the rest received non-pharmacological methods including verbal de-escalation, seclusion and physical restrain. Among them, 147 (58.33%) were male. 212 patients (84.13%) had under-high school education, and 82 (32.54%) were married. 187 (74.21%) were unemployed or retired. The patients’ demographic information is presented in Table 1.

Table 1. Demographic Information of Patients with Agitation Referred to Emergency Department

	Overall (n = 252)	Percentage
Sex		
Male	147	58.33
Female	105	41.67
Age		
18-30	85	33.73
30-42	96	38.09
42-54	51	20.24
54-65	20	7.94
Educational level		
≤ High school	212	84.13
≥ College	30	11.9
Unknown	10	3.97
Employment		
Employed	57	22.62
Unemployed or retired	187	74.21
Unknown	8	3.17
Marital status		
Married	88	34.92
Single	133	52.78
Divorced	25	9.92
Widowed	1	0.4
Unknown	5	1.98

109 patients had a history of an underlying medical illness, the most common of which were seizures in 27 patients (10.71%) and hypothyroidism in 25 patients (9.92%). The most frequently diagnosed psychiatric

condition in agitated patients was bipolar disorder (manic episode) in 117 patients (46.43%) and substance-induced mood disorder in 65 patients (25.79%). The most frequently used medicines by the patients were sodium valproate in 60 patients (23.81%) followed by quetiapine in 41 patients (16.27%). About half of the patients had a history of smoking (43.65%) and substance use (44.84%), and the most common substances were opioids in 55 (21.83%) and cannabis in 38 (15.08%) patients.

Table 2 shows the prescription pattern in detail. In terms of administration routes, 44 patients (17.46%) received only oral medicines, 13 patients (5.16%) received a combination of oral medication and intramuscular injection, and 195 patients (77.38%) received only intramuscular injection. The most prescribed medication was haloperidol in 194 cases, of which 186 (approximately 96%) received biperiden to prevent extrapyramidal side effects. The most used medications were haloperidol (71.3%), lorazepam (19.05%), olanzapine (4.75%) and risperidone (3.57%) respectively.

The response to treatment was assessed as appropriate in 224 (88.89%) and as improper in 28 (11.11%) patients.

Table 2. Prescription Patterns to Control Acute Agitation in Patients Referred to Emergency Department

Prescription Patterns	Overall (n = 252)	Percentage
Monotherapy	234	92.86
Typical antipsychotics	172	73.5
Atypical antipsychotics	17	7.27
Benzodiazepines	14	17.52
Combination therapy	18	7.14
Typical antipsychotic + benzodiazepine	4	22.22
Typical antipsychotic + captopril	3	16.67
Typical antipsychotic + benzodiazepine	5	27.78
Other	6	33.33

Discussion

Similar to previous studies, most of the patients who received pharmacotherapy due to agitation were male, had a low educational level, and were single and unemployed, which could show the impacts of social factors on agitation (3).

73.5% of patients received typical antipsychotics, where haloperidol was the most commonly used (71%), while

in similar studies, most patients were treated with atypical antipsychotics (3). This could be due to its easy accessibility and cost-effectiveness in developing countries like Iran (4). Also noteworthy is that the unavailability of some drugs, including olanzapine, which became available only a month after the beginning of the present study, can play a key role in medication selection.

In our study, 208 patients (82.5%) received an intramuscular injection, which is in contrast to the guidelines which promote using oral forms (5, 6). The unstable condition of the disorder, irritability, and non-cooperative patients increase the use of the intramuscular route. In addition, physicians working in the ED are in the first year of their residency program and might not have sufficient skills to manage the patients in another way.

In a study in China, 51% of the patients received combination therapy, whereas in this study, only 7.14% of the patients received combination therapy. This fact could be due to insufficient access to various medicines in developing countries or unawareness of junior psychiatric residents about the updated guidelines.

Previous studies show that initial anticholinergic prophylaxis for neuroleptic-induced extrapyramidal syndromes is more effective and recommended for younger, male patients receiving more potent antipsychotics with higher doses (5). In the present study, preventive anticholinergics were administered for almost all patients receiving haloperidol except 8. Therefore, it can be said that in the ED of Rouzbeh Hospital, the factor of potency is given enough attention, but other important factors, such as age, gender, and drug dose, are not taken into consideration.

Limitation

The most important limitation of this study was the indirect investigation of agitated patients through their medical files. Patient information was written manually by different people, including residents and nurses, and in many cases, it was not legible and understandable. In addition, sometimes the patient's full information was not recorded. In evaluating the response to the treatment, only the physician's order and the explanations in the nursing notes are cited, which, unfortunately, are not accurate in some cases. Therefore, the inappropriate response to the treatment was calculated at about 11%, probably much lower than the actual value. The second significant limitation of this study is the unavailability of some drugs in developing countries like Iran.

Conclusion

It is necessary to study a larger number of patients across various medical centers in Iran in order to draw clear conclusions about the factors influential in agitation and the types of prescription patterns for controlling this disorder. This research revealed that monotherapy plays

a crucial role in controlling acute agitation at Roozbeh Hospital, accounting for more than 90% of the prescriptions. Additionally, first-generation antipsychotics, particularly Haloperidol, continue to be commonly used in Iran, while atypical antipsychotics are not widely prescribed.

These findings underscore the importance of implementing comprehensive educational programs for psychiatric trainees and emphasize the government responsibility in providing access to new-generation medications.

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Conflict of Interest

None.

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