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PREVALENCE OF ANTIDEPRESSANT-ASSOCIATED TARDIVE DYSKINESIA IN THE ELDERLY POPULATION

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ABSTRACT

Background Objective: To determine the prevalence of antidepressant-associated tardive dyskinesia in the elderly population. Methodology: The cross-sectional study was conducted from March 2025 to August 2025 in Karachi to determine the prevalence of antidepressant-associated tardive dyskinesia in the elderly population. The sample size was 150, and the non-probability purposive sampling technique was used. Data was evaluated by a validated tool: the AIM (Abnormal Involuntary Movement Scale). The data was analyzed through SPSS version 23.0. Result: A total of 150 elderly patients were included in this study. The results of our study showed 46% of our research participants who took antidepressants presented with tardive dyskinesia, while 19.33% were not taking medications, but they had tardive dyskinesia. The prevalence of tardive dyskinesia was present in 65.33% and absent in 34.66% among the research participants. According to the AIMS scale, it has been observed that 26% of participants have abnormal movement of extremities. Conclusion: The Prevalence of dyskinesia was found in more than half of the research participants from our study who take antidepressants regularly.

Keywords: *Mobility, Antipsychotic drugs, Depression, Geriatric population, Frequency, and Abnormal movement, etc.*

INTRODUCTION

The term tardive dyskinesia is a neurological condition that involves uncontrolled, involuntary movements. [1] First time, it was introduced in February 1964 by Faurbye, the term tardive, which means slow, late, or delayed, and the other term is dyskinesia, which means involuntary movements of the muscle, which are most commonly seen in the face, around the mouth, and jaw. [2] These involuntary movements are more developed in the upper and lower limbs, and are also found in the pelvic area. This condition is most common in those individuals who are taking antidepressant drugs. [3] The main cause of these diseases is the prolonged use of antidepressant drugs, which inhibit the activity of the neurotransmitter of the brain (Dopamine). Individuals with this condition look different from day to day and present with involuntary movements of the eye, facial

twitching, rapid blinking of the eyes, sticking the tongue out or against the cheeks, repeated movements of the fingers that look like they played the piano, pelvic rocking, duck-like walking gait, tics, dystonia, and repetitive movements of the mouth. [4,5]

Tardive dyskinesia is not a common disease. But the disease incidence rate is increasing around 3 to 5 percent, and nowadays the disease prevalence rate is about 20 to 30 percent. [6] Around 15 to 40 percent of the tardive dyskinesia was found in those participants who were taking antidepressant drugs. This disease is more common in elderly individuals aged 55 years old and especially in postmenopausal women. [7] The risk factors of tardive dyskinesia can be modifiable and non-modifiable. The modifiable risk factors include the inhibition of dopamine, duration of illness, drug dosage, consumption of alcohol, and smoking. The non-modifiable factors include gender, neurological problems, and mood swing issues. [8]

The treatment of tardive dyskinesia includes pharmacological therapy, in which many drugs can be used by the consultant to treat this disease. Deep brain stimulation has proven effective in the treatment of tardive dyskinesia. [9] The life of a person with tardive dyskinesia can affect the person's mental level, professional life, and social life. This patient faces many issues, such as speech, pulmonary, and gait issues. The physical therapy also helps people to resolve their problems regarding walking patterns, extremities issues, and also helps in pulmonary problems by doing chest physical therapy. [10] The study aimed to evaluate the prevalence of antidepressant association with tardive dyskinesia in the elderly population.

METHODOLOGY

The cross-sectional study was done among the elderly patients of Karachi. The data was collected from seven districts (south, north, east, west, Malir, central, and Korangi) of Karachi from March 2025 to August 2025. The sample size of 150 was calculated from Raosoft.com software. To select the research participants for the study, the non-probability purposive sampling was used. The inclusion criteria of the study were both male and female genders, and the age group 55 to 76 years or older. The exclusion criteria consist of those patients who were suffering from illness, cognitive impairment, or who were not willing to participate in the study. The AIM (Abnormal Involuntary Movements Scale) was used to calculate the level of involuntary movement along with the demographic information of research participants was asked from the research participants. The analysis of data was done using SPSS version 23.0 software.

RESULT

A total of 150 participants were selected for the study. The participant's age group was selected from 55 to more than 76 years of age. Around 64% male, and about 36% were female. Mostly 55.33% participants were married, 19.33% were single participants, 14% were widowed, and 11.33% were divorced. According to the economic status, around 61.33% of participants belonged to the middle-class family. Around 71.33% participants were taking antidepressant drugs, the details are shown in Table 1:

Table No.1: Demographical Data

Variables	Frequency (%)
AGE	
55-65	31 (20.6%)
66-75	50 (33.33%)
>76 years	69 (46%)
GENDER	
Male	96 (64%)
Female	54 (36%)
MARITAL STATUS	
Single	29 (19.33%)

Married Widow Divorced	83 (55.33%) 21 (14%) 17 (11.33%)
FINANCIAL STATUS Upper Middle Lower	 21 (14%) 92 (61.33%) 37 (24.66%)
PARTICIPANTS TAKING ANTI-DEPRESSANT Yes No	 107 (71.33%) 43 (28.66%)

The frequencies of tardive dyskinesia in elderly people were calculated from the 150 participants who were selected for the study. Around 98 (65.33%) individuals had the problem of tardive dyskinesia, and about 52 (34.66%) participants did not have this condition, as shown in Figure No.1:

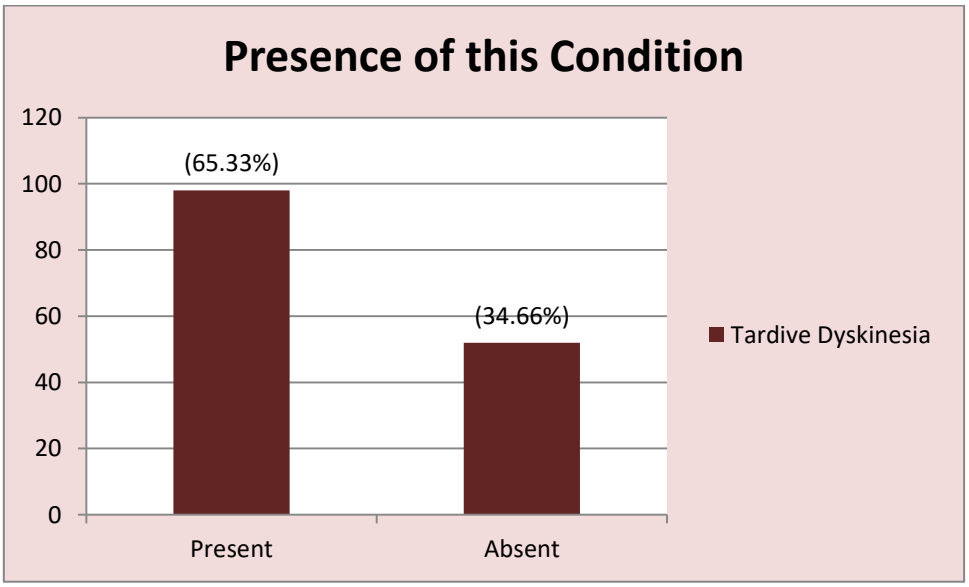

Figure No.1: Frequency of Tardive Dyskinesia

A total of 69 participants were taking the antidepressant drugs and also had the condition of tardive dyskinesia, and 38 research participants did not have the condition of tardive dyskinesia. The detailed associations between tardive dyskinesia and antidepressant drugs are shown in Table No.2:

Table No.2: Association of the condition with Anti-Depressant drugs

Patients taking antidepressant drugs	Tardive Dyskinesia	
	Present	Absent
Yes	69 (46%)	38 (25.33%)
No	29 (19.33%)	14 (9.33%)
Total	98 (65.33%)	52 (34.66%)

According to the AIMS (Abnormal Involuntary Movements Scale) scoring procedure, we asked the research participants about the facial, extremities, trunk, and global movements. In facial and oral movements, about 24% participants lie in mild ranking, the questions asked to the participants related to the upper and lower extremity about 26% participants lie in ranking of moderate.

The questions asked of the participants related to the movements of the trunk, about 18% of individuals lie in the severe category.

The question asked of the participants related to the global factor, which includes the severity of abnormal movements and awareness regarding these movements. About 20.6% of research participants were in the minimal category, which is shown in Figure No.2:

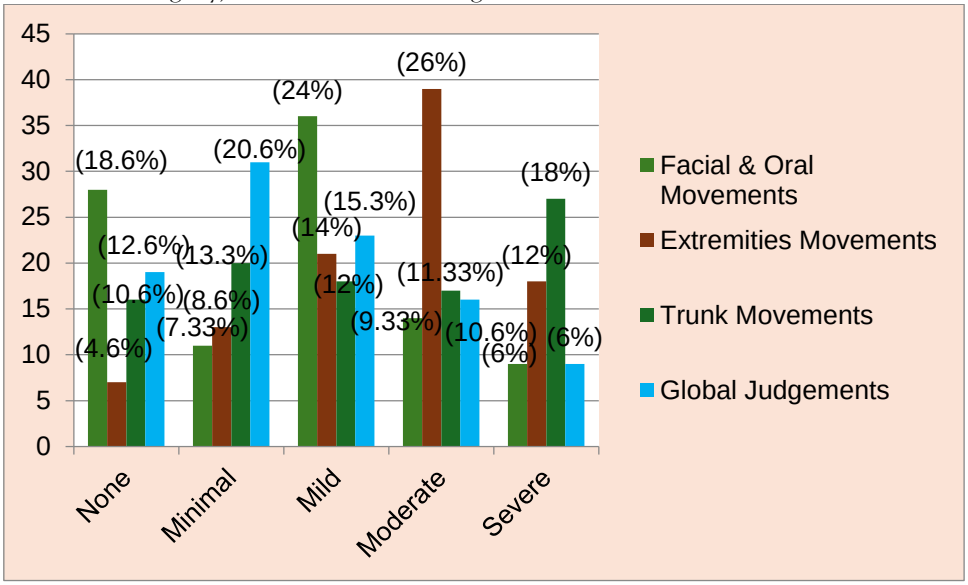

Figure No.2: AIMS (Abnormal Involuntary Movements Scale)

DISCUSSION

An uncontrolled, abnormal, involuntary movement of muscles that can affect one or more parts of the body is known as Tardive Dyskinesia. [11] It can be presented with mild, moderate, and severe symptoms along with muscular spasm and pain [12]. The main cause of these movements is the imbalance in the chemicals of the brain, mainly dopamine, which causes dyskinesia. [13] This condition is also a symptom of many neurological disorders and may be present due to the side effects of certain medications. [14] According to the study, tardive dyskinesia can be diagnosed by either the AIMS scale or the TIDS scale. [15] In the present study, we were determining the tardive dyskinesia associated with antidepressant use in elderly patients.

From the result of our study, it was found that the prevalence of tardive dyskinesia was present in 65.33% and absent in 34.66% among the research participants, while a study conducted in Ethiopia reported that the prevalence of tardive dyskinesia was found in 15.4% of their research participants.[16] Another study revealed that there may be the higher chances of occurrence of tardive dyskinesia in patients who takes anti-psychotic medications for more than one year, which is more than the patients who were taking the medications for more than three months. [17] The findings of our study showed that tardive dyskinesia was found in 64% of males, which shows that it is more common in males than in females. However, a study suggested that the diagnosis and management of tardive dyskinesia are very crucial because it affects not only the affected person's quality of life but also the family and caregivers of the patients. For the confirmation and difference of tardive dyskinesia from other neurological illnesses, they observed the use of DRBA, and then they noticed the duration of usage. [18]

The results of our study showed 46% of our research participants who took antidepressants were presented with tardive dyskinesia, while 19.33% of participants were those who did not take medications for depression, but they have presented with tardive dyskinesia. However, a case study reported the presence of tardive dyskinesia without the history of antidepressant medications, which shows this condition may occur due to any other reason. [19] Another study reported that not only is the use of anti-depressant drugs a cause of tardive dyskinesia, but also traumatic brain injury and other neurological disorders can be the cause of tardive dyskinesia. [20]

CONCLUSION

There is a strong association of tardive dyskinesia, depression, and the use of antidepressant drugs. Tardive dyskinesia is more common in older adults, particularly patients who are depressed and taking antidepressant medications. The involuntary movements of patients can affect the quality of life of patients as well as their families; they can also be affected due to their behavior, so it is required to recommend physical therapy and exercises to patients with tardive dyskinesia, which can reduce the pain, muscle spasm, and also the symptoms of this disease.

REFERENCES

Carbon M, Hsieh CH, Kane JM, Correll CU. Tardive dyskinesia prevalence in the period of second-generation antipsychotic use: a meta-analysis. The Journal of Clinical Psychiatry. 2017 Mar 29;78(3):20738.

Takeuchi H, Mori Y, Tsutsumi Y. Pathophysiology, prognosis, and treatment of tardive dyskinesia. Therapeutic advances in psychopharmacology. 2022 Oct;12:20451253221117313.

Solmi M, Fornaro M, Caiolo S, Lussignoli M, Caiazza C, De Prisco M, Solini N, de Bartolomeis A, Iasevoli F, Pigato G, Del Giovane C. Efficacy and acceptability of pharmacological interventions for tardive dyskinesia in people with schizophrenia or mood disorders: a systematic review and network meta-analysis. Molecular Psychiatry. 2025 Mar;30(3):1207-22.

Frei K, Scott A, Caroff SN, Jankovic J, Ondo W, Citrome L, Hauser R, Friedman JH, Bhidayasiri R, Sajatovic M, Alters D. Tardive dyskinesia versus tardive syndrome. What is in a name?. Parkinsonism & Related Disorders. 2025 Apr 1;133:107295.

North CS, McDonald K, Hunter J, Burruss J. Prevalence of tardive dyskinesia in an electronic medical record study at a large community mental health treatment center. The primary care companion for CNS disorders. 2022 Jun 28;24(4):41627.

Wong J, Pang T, Cheuk NK, Liao Y, Bastiampillai T, Chan SK. A systematic review on the use of clozapine in treatment of tardive dyskinesia and tardive dystonia in patients with psychiatric disorders. Psychopharmacology. 2022 Nov;239(11):3393-420.

Jain R, Ayyagari R, Goldschmidt D, Zhou M, Finkbeiner S, Leo S. Impact of tardive dyskinesia on physical, psychological, social, and professional domains of patient lives: a survey of patients in the United States. The Journal of Clinical Psychiatry. 2023 Apr 3;84(3):46498.

Uludag K, Wang DM, Goodman C, Chen DC, Wang L, Zhang X. Prevalence, clinical correlates and risk factors associated with Tardive Dyskinesia in Chinese patients with schizophrenia. Asian Journal of Psychiatry. 2021 Dec 1;66:102877.

Tanner CM, Caroff SN, Cutler AJ, Lenderking WR, Shalhoub H, Pagé V, Franey EG, Serbin M, Yonan C. Impact of possible tardive dyskinesia on physical wellness and social functioning: results from the real-world RE-KINECT study. Journal of Patient-Reported Outcomes. 2023 Mar 9;7(1):21.

Ismail O, Albdour K, Jaber Y, Jaber K, Alsaras A. Efficacy and safety of different pharmacological interventions in the treatment of tardive dyskinesia: a systematic review and network meta-analysis. European Journal of Clinical Pharmacology. 2024 Oct;80(10):1471-82.

Nedunjelian A, Ng CG, Lim PK, Sulaiman AH, Koh OH, Francis B. The Prevalence of Tardive Dyskinesia In Patients With Schizophrenia Treated With Antipsychotics In Malaysia. Neuropsychiatric Disease and Treatment. 2025 Dec 31:465-75.

Besag FM, Vasey MJ, Salim I, Hollis C. Tardive dyskinesia with antipsychotic medication in children and adolescents: A systematic literature review. Drug safety. 2024 Nov;47(11):1095-126.

Mori Y, Takeuchi H, Tsutsumi Y. Current perspectives on the epidemiology and burden of tardive dyskinesia: a focused review of the clinical situation in Japan. Therapeutic Advances in Psychopharmacology. 2022 Dec;12:20451253221139608.

Bhat TS. Prevalence And Clinical Correlates of Tardive Dyskinesia in Patients With Chronic Mental Illness in Psychiatry Rehabilitation Centres. Online Journal of Health and Allied Sciences. 2024 Apr 25;23(1).

Jackson R, Brams MN, Carlozzi NE, Citrome L, Fritz NE, Hoberg AR et al. Impact-tardive dyskinesia (impact-TD) scale: a clinical tool to assess the impact of tardive dyskinesia. The Journal of Clinical Psychiatry. 2022 Nov; 84(1): 44284. doi: 10.4088/JCP. 22cs14563.

Kumsa A, Girma S, Alemu B, Agenagnew L. Psychotropic medications-induced tardive dyskinesia and associated factors among patients wit h m e n t a l i l l n e s s i n Et h i o p i a . Cl i n i c a l Pharmacology: Advances and Applications. 2020 Dec: 179-87. doi: 10.2147/CPAA.S285585

Patterson-Lomba O, Ayyagari R, Carroll B. Risk assessment and prediction of TD incidence in psychi atri c patient s t a k ing concomit ant antipsychotics: a retrospective data analysis. BioMed Central Neurology. 2019 Dec; 19: 1-0. doi: 10.11 86/s12883-019-1385-4.

Hauser RA, Meyer JM, Factor SA, Comella CL, Tanner CM, Xavier RM et al. Differentiating tardive dyskinesia: a video-based review of antipsychoticinduced movement disorders in clinical practice. CNS Spectrums. 2022 Apr; 27(2): 208-17. doi: 10.1017/ S109285292000200X

Citrome L, Isaacson SH, Larson D, Kremens D. Tardive dyskinesia in older persons taking antipsychotics. Neuropsychiatric Disease and Treatment. 2021 Oct: 3127-34. doi: 10.2147/NDT.S328 301

Mustafa M, Kamal K, Azam L, Eman A. Prevalence of Tardive Dyskinesia and Its Association with Antipsychotic Drug and Depression in Geriatric Population in Lahore, Pakistan: Tardive Dyskinesia's Association with Antipsychotic Drug and Depression. Pakistan Journal of Health Sciences. 2025 Jan 31:02-6.