SMICA
SERIOUS MENTAL ILLNESS
CALIFORNIA ADVISER

Antipsychotic-induced Tardive Dyskinesia

Tardive dyskinesia (TD) is a medication-induced movement disorder characterized by involuntary, abnormal movements resulting from prolonged exposure to dopamine-blocking agents, most commonly antipsychotics. Diagnosis requires at least 3 months of exposure (or 1 month in adults ≥60 years) and the presence of symptoms for at least 4 weeks, emerging during treatment or shortly after medication discontinuation (up to 8 weeks for long-acting injectables). Onset is typically gradual and initially subtle. Movements may be choreiform (rapid, jerky, nonrepetitive), athetoid (slow, sinuous, continual), or semirhythmic, most commonly affecting the orofacial region, though limbs and axial muscles may also be involved. Risk increases with older age and cumulative antipsychotic exposure, and is further associated with early extrapyramidal symptoms, mood disorders, neurological illness, and alcohol use disorder.

The Abnormal Involuntary Movement Scale (AIMS): Consists of a 12-item clinician-rated scale used to detect and track Tardive Dyskinesia (TD). Routine monitoring is essential for early detection.

Scoring Protocol: The AIMS assesses movement severity (items 1-7), global impairment (items 8-9), patient awareness (item 10) and contextual items (items 11-12). Items 1–10 are rated on a 0–4 scale (0 = none, 1 = minimal, 2 = mild, 3 = moderate, 4 = severe). Items 11 and 12 are not scored but provide context for interpretation.

Use the below to assess your patient:

Number	Assessment Domain	Description/Body Region Assessed
1	Orofacial Movements	Muscles of facial expression
2	Orofacial Movements	Lips and perioral area
3	Orofacial Movements	Jaw movements
4	Tongue Movements	Tongue
5	Upper Extremity Movements	Arms, wrists, hands, fingers
6	Lower Extremity Movements	Legs, knees, ankles, toes
7	Trunk Movements	Neck, shoulders, hips
8	Global Severity	Overall severity of abnormal movements
9	Incapacitation	Impact on functioning
10	Patient Awareness	Patient's awareness of abnormal movements
11	Dental Status	Dentures, teeth condition (yes/no)
12	Clinical Judgment	Overall Clinical Assessment

Risk Profile by Antipsychotic Class:

- First-Generation Antipsychotics (FGAs) (e.g., haloperidol, chlorpromazine): Highest risk for drug-induced movement disorders, especially parkinsonism and dystonia.
- Second-generation Antipsychotics (SGAs): Generally, have a lower risk for movement disorders.
    - Higher Risk SGAs: risperidone, paliperidone, lurasidone, and ziprasidone
    - Lower Risk SGAs: olanzapine and clozapine
    - Akathisia: This is more commonly associated with aripiprazole and ziprasidone

- Clozapine: Consistently show minimal movement disorder risk and is preferred when minimizing drug-induced movement disorders is a priority.
- Use of quetiapine is not recommended given reduced efficacy in patients with Schizophrenia and higher relapse rates, when compared to other antipsychotics.
- Tardive dyskinesia (TD): While much less common with SGAs than with FGAs, TD remains a risk with long-term use of any antipsychotic medication.
- Although VMAT 2 inhibitors are considered first line treatment for TD, valbenazine and deutetrabenazine are non-formulary in public-funded settings. Amantadine and ginkgo biloba should be trialed first. VMAT 2 inhibitors are reserved for AIMS > 10

General Overview of Other Types of Drug-Induced Movement Disorders:

Drug Induced Movement Disorder	Clinical Features	Typical Onset	Management Strategies
Parkinsonism	Tremor, rigidity, bradykinesia, impaired gait	Days to weeks	Dose reduction, switch antipsychotic, anticholinergics*, amantadine
Akathisia	Restlessness, inability to sit still, anxiety	Days to weeks	Dose reduction, switch antipsychotic, beta-blockers, benzodiazepines**
Dystonia	Sustained muscle contractions, abnormal postures	Hours to days	Anticholinergics*, benzodiazepines**

*Anticholinergics (e.g., Benztropine) can impair cognition.
**Benzodiazepines (e.g., Clonazepam) carry an increased risk of dependence, withdrawal and may be associated with an increased risk of dementia with long term use.

References

1. Ali, T., Sisay, M., Tariku, M., Mekuria, A. N., & Desalew, A. (2021). Antipsychotic-induced extrapyramidal side effects: A systematic review and meta-analysis of observational studies. PloS one, 16(9), e0257129. https://doi.org/10.1371/journal.pone.0257129
2. Hamina, A., Taipale, H., Lieslehto, J., Lähteenvuo, M., Tanskanen, A., Mittendorfer-Rutz, E., & Tiihonen, J. (2024). Comparative Effectiveness of Antipsychotics in Patients With Schizophrenia Spectrum Disorder. JAMA network open, 7(10), e2438358. https://doi.org/10.1001/jamanetworkopen.2024.38358
3. Martino, D., Karnik, V., Osland, S., Barnes, T. R. E., & Pringsheim, T. M. (2018). Movement Disorders Associated With Antipsychotic Medication in People With Schizophrenia: An Overview of Cochrane Reviews and Meta-Analysis. Canadian journal of psychiatry. Revue canadienne de psychiatrie, 63(11), 706743718777392. Advance online publication. https://doi.org/10.1177/0706743718777392
4. Petriceks, A., Vyas, C. M., Paudel, S., Donovan, A. L., Van Alphen, M. U., & Stern, T. A. (2024). Assessment and Treatment of Abnormal Involuntary Movements: A Clinically Focused Narrative Review. Harvard review of psychiatry, 32(2), 47–57. https://doi.org/10.1097/HRP.0000000000000390

Funding for SMI CalAdviser was made possible by the State of California Department of State Hospitals (DSH) (the Department), but does not necessarily represent the views of the Department or any of its employees except to the extent, if any, that it has formally been approved by the Department.