Lurasidone-Induced Tardive Dyskinesia Reversed with Lithium Therapy: A Case Report

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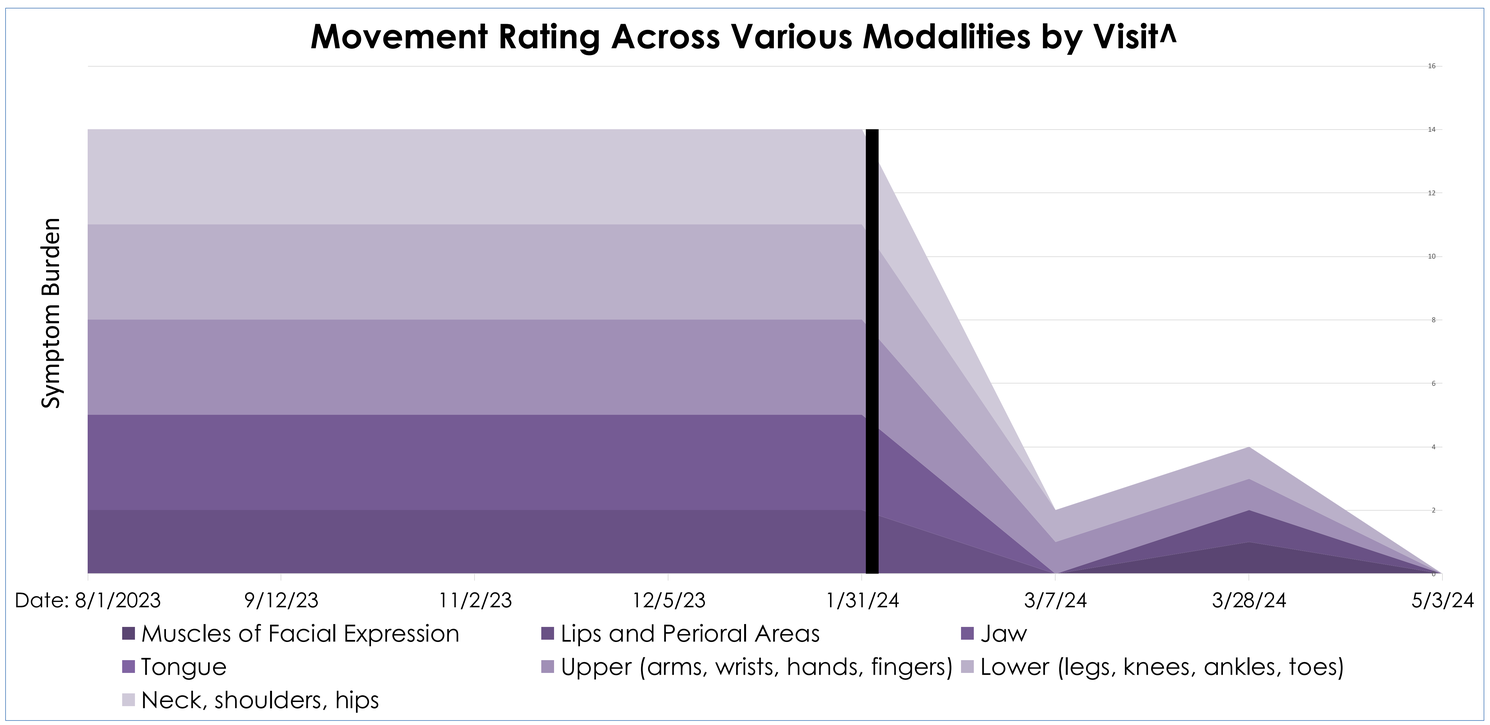
Case Presentation

- A 76-year-old female with history of Bipolar I Disorder (BD) developed Tardive Dyskinesia (TD) after 10 years of daily treatment with 40mg of lurasidone
- TD symptom burden was severe and intrusive–causing her to quit her job and withdraw from duties in local election
- Previous physician prescribed valbenazine (not used as it was not covered by her insurance)
- Previous trials of benztropine were discontinued due to ataxia and confusion after 2-3 weeks
- At the time, patient was also using trazodone 100 mg nightly, gabapentin 300 mg daily, and atorvastatin 40 mg daily. Due to continuing depressive symptoms, patient treatment was augmented with lithium 300mg
- At her next evaluation, five weeks later, the patient's TD was remarkably improved in terms of intensity, frequency, and intrusiveness per the patient's subjective reports and AIMS tests administered by a psychiatrist
- Improvements in symptom burden have persisted with continued lithium use per our 10-month follow-up

Table 1: Symptom Burden Per AIMS Score

Movement Ratings^	8/1/23	9/12/23	11/2/23	12/5/23	1/31/24	3/7/24	3/28/24	5/3/24
Muscles of Facial Expression	0	0	0	0	0	0	1	0
Lips and Perioral Areas	2	2	2	2	2	0	1	0
Jaw	3	3	3	3	3	0	0	0
Tongue	0	0	0	0	0	0	0	0
Upper (arms, wrists, hands, fingers)	3	3	3	3	3	1	1	0
Lower (legs, knees, ankles, toes)	3	3	3	3	3	1	1	0
Neck, shoulders, hips	3	3	3	3	3	0	0	0

Figure 1: Symptom Burden per AIMS Score



*Thick line denotes addition of lithium 300mg
^Instructions: Rate highest severity observed. Rate movements that occur upon activation one less than those observed spontaneously. Circle code number that applies (0-4)

References

Background

- Tardive dyskinesia is a syndrome that causes chronic, involuntary, and disruptive movements of the body and/or face that is a dreaded, potentially irreversible side-effect of long-term antipsychotic use
- Currently, limited treatment options to address TD exist
- Recent literature review suggests vitamin E and valbenazine as the most efficacious pharmacological treatment for TD, with the caveat that valbenazine has significant side effects
- Lithium is a mood stabilizer approved for the treatment of BD and used off-label for MDD
- Lithium may be an especially attractive treatment option to for TD due to its ability to address both TD and comorbid depressive symptoms
- Previous studies turned their attention to lithium as a potential TD treatment option given its neuroprotective properties and its proposed mechanism of dampening dopaminergic excitatory signaling
- Few studies examining the role of lithium in inducing TD remission were ever carried out

Brief Literature Review

- In 2008, a clinical trial in Curacao assessed 166 patients using various antipsychotics, and in a subset analysis, analyzed 16 patients who used lithium at baseline, and eight who began lithium use during the trial
- The study found that lithium use significantly decreased AIMS score and rate of onset of tardive dyskinesia as compared to those not using lithium
- More recent research, however, with the majority being case studies, reports the occurrence of lithium associated movement disorders and lithium induced TD.
- A 2018 systematic review describing miscellaneous treatments for antipsychotic-induced TD only highlighted one RCT assessing lithium, which noted no clinical improvement of TD symptom burden
- Overall, the evidence regarding lithium's effect on TD symptoms remains controversial

Discussion

- In our complex patient with longstanding TD and BD, low dose lithium markedly reduced symptom burden and symptoms remained reduced
- Given timing of improvement, we attribute this improvement to the addition of lithium to her treatment regimen.
- Even though literature describes resolution of TD months to years following discontinuation of antipsychotic, it is less likely given that lurasidone was discontinued at least 5 years prior to lithium introduction
- Given the multi-year persistence of our patient's TD symptoms after lurasidone discontinuation until lithium start, it is more likely that lithium played a role. Addition of vitamin E also did not make any difference at least for the duration of treatment
- The authors hope this case illustrates the need for future research into lithium's effectiveness in ameliorating TD symptoms