Retrospective Analysis of Patient-Specific Differences Between Patients on Valbenazine 40mg Once Daily and 80mg Once Daily

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INTRODUCTION

Tardive Dyskinesia (TD) is characterized by uncontrolled movements, and is associated with antipsychotic medication use. The incidence of TD can range from 23% to 58% for first generation antipsychotics and 3% to 7% for second generation antipsychotics, depending on the length of therapy.[1] Once a patient develops TD, there is a risk of the uncontrolled movements becoming permanent.[2] The presence of TD is associated with poorer quality of life and increased mortality, necessitating treatment for TD.[3]

Valbenazine is a vesicular monoamine transporter 2 inhibitor indicated for the treatment of TD in adult patients. The exact mechanism of action in treating TD is not fully understood, but patients typically experience a reduction in uncontrolled movements while taking valbenazine.[4] For some patients, the movements decrease significantly, but never completely dissipate. However, movements return to baseline when the medication is discontinued. Valbenazine is available in 40 mg and 80 mg capsules, with FDA-labeling recommending patients begin therapy with one 40 mg capsule by mouth daily for one week, then titrate to one 80 mg capsule daily thereafter. However, the labeling also states, "continuation of the 40 mg capsule may be appropriate for some patients."[4] The definition of that patient population is not provided.

Because of the lack of treatment options for TD prior to valbenazine, patients have historically been treated with agents that lack quality data and evidence.[5,6,7] Specifically, benztropine has evidence against the use in TD, as it can worsen symptoms.[6]

OBJECTIVES

The purpose of this study is to evaluate demographic and clinical variables between patients taking valbenazine 40 mg daily and 80 mg daily.

METHODS

A retrospective database analysis was completed on all patients receiving valbenazine between January 1, 2018 and December 31, 2018. Inclusion criteria was defined as patients who received at least one valbenazine prescription and were over the age of 18. Patients were classified into either 40 mg once daily or 80 mg once daily cohorts, based on fill history. Exclusion criteria was defined as patients prescribed off-label dosing schedules. Data were collected from a single specialty pharmacy. Variables of interest include patient demographics, medication profile, prescriber base (specialist vs. generalist), and adherence rates. Descriptive and inferential statistics were performed to determine those variables correlated with the different doses.

RESULTS

Figure 1. Age distribution by strength

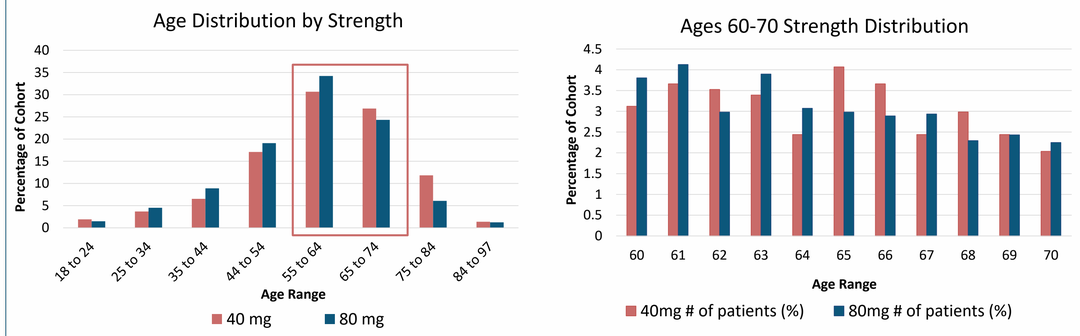


Figure 2: Sex distribution by strength

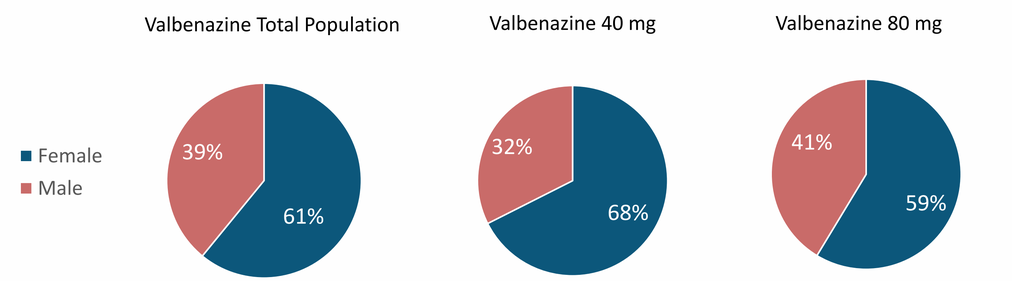
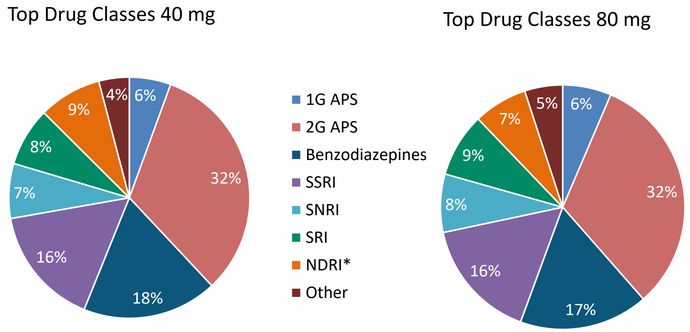


Figure 3: Top Psychiatric Drug Classes



*NDRI = bupropion

Table 1. Prescriber Taxonomy

	40 mg	80 mg
MD	76%	68%
PA or NP	24%	31%
Other	1%	1%
Specialists		
Neurology	25%	22%
Psychiatry	75%	78%

Table 2. Medication Possession Ratio (MPR)

	40 mg	80 mg
Total MPR	90%	91%

DISCUSSION

This analysis includes patients who received valbenazine between January 1 and December 31, 2018. Patients taking valbenazine through an off-label dosing schedule were excluded. Patients were divided into two cohorts: patients taking 40 mg daily and patients taking 80 mg daily.

A higher percentage of patients younger than 65 years old received the 80 mg daily dose and a higher percentage of patients aged 65 years or older received the 40 mg daily dose compared to the total population (Figure 1). There is a higher proportion of female patients taking the 40 mg dose in comparison to the 80 mg dose (Figure 2).

There were slight differences among psychiatric drug classes utilized for both cohorts, however, the top three drug classes in all study patients were second-generation antipsychotics, benzodiazepines, and selective serotonin reuptake inhibitors. These three classes account for approximately 66% of the mental health medications for both cohorts. Notably, bupropion and trazodone represent a large portion of the mental health medications for both cohorts. First-generation antipsychotic use was low among both cohorts (Figure 3). For the use of benztropine, the groups are similar. There is a slightly higher use of benztropine in the 80 mg cohort, compared to the 40 mg cohort (17% and 14%, respectively). Initial referrals sent from specialists were high within both cohorts (Table 1). Medication possession ratio (MPR) was also similar for both cohorts at approximately 90% (Table 2).

Limitations of this study include manual extraction of data from the pharmacy dispensing system and reliance on patient-reported data. For mental health medications, there is no ability to look at medication profile changes over time, including therapies administered before patient referral to the pharmacy.

CONCLUSIONS

The use of valbenazine provides a novel treatment option for patients with TD. Based on labeling, patients treated with valbenazine are frequently titrated to 80 mg daily. However, a subset of providers may elect to maintain therapy on the 40 mg daily dose. This study revealed that the 40 mg daily dose was more commonly utilized in females and patients aged 65 and older. The ability to understand differences in each of these cohorts could provide key insights and optimize outcomes across this population.

REFERENCES

1. O'Brien A. Comparing the risk of tardive dyskinesia in older adults with first-generation and second-generation antipsychotics: a systematic review and meta-analysis. *Int J Geriatr Psychiatry*. 2016;31(7):683-93.
2. Frei K. Tardive dyskinesia: Who gets it and why. *Parkinsonism Relat Disord.* 2015;pii: S1353-8020(18)30515-7.
3. Rosenheck RA. Evaluating the cost-effectiveness of reduced tardive dyskinesia with second-generation antipsychotics. *Br J Psychiatry*. 2007;191:238-45.
4. Ingrezza package insert. San Diego, CA: Neurocrine Biosciences; 2018 Dec.
5. Bergman H, Bhoopathi PS, Soares-Weiser K. Benzodiazepines for antipsychotic-induced tardive dyskinesia. *Cochrane Database Syst Rev*. 2018;1:CD000205.
6. Ward KM, Citrome L. Antipsychotic-related movement disorders: drug-induced parkinsonism vs. tardive dyskinesia-key differences in pathophysiology and clinical management. *Neurol Ther.* 2018;7(2):233-248.
7. American Academy of Neurology. Summary of Evidence-based Guidelines for Clinicians: Treatment of Tardive Syndromes. https://www.aan.com/Guidelines/Home/GetGuidelineContent/613. 2013. (accessed Mar 14, 2019).