Background

VMAT2 inhibitors are FDA approved for the treatment of chorea in Huntington disease (HD; TBZ, 2008; DTBZ, 2017) and tardive dyskinesia (TD; DTBZ, 2017; VBZ, 2017) [5,6].

Access to novel VMAT2 inhibitors may be limited by high cost and insurance denials [7].

To review the “real world” experience with novel vesicular monoamine transporter 2 (VMAT2) inhibitors, including tetrabenazine (Xenazine®), and generic; TBZ; deuterotetrazine (Austedo®; DTBZ), and valbenazine (Ingrevia®; VBZ) [1-4].

Methods

The Institutional Review Board at Baylor College of Medicine approved this study and waiver of patient consent was obtained.

Retrospective chart review (treatment indications, insurance approval/denial, and treatment outcomes) of all patients prescribed a VMAT2 inhibitor in our clinic for any indication between Jan. 1, 2017 and Aug. 30, 2018, supplemented with a questionnaire which was mailed to the patients.

Measurement of treatment efficacy: 1-4 Likert scale (1=normal or mildly ill, 4=severely ill).

Validated rating scales were generally not administered at each clinic visit.

Results

Patients (n) = 135 (78 male, 57.8%); 22 (16.3%) returned the survey (Table 1).

Always denied

Most common reason for discontinuation of VMAT2 inhibitor: Occurrence of adverse events (Table 2) out of a total of 17 AEs reported for the whole group.

More than half of patients were still taking a VMAT2 inhibitor (TBZ, 64.5%; DTBZ, 78.8%; VBZ, 47.6%) at the end of the study period.

Most patients experienced clinical improvement in their hyperkinetic movement disorder; the proportion of patients who had only mild symptoms was 60.9-71.9% while on treatment compared to 13.0-26.7% before starting treatment (Figure 7).

Most common reason for discontinuation of VMAT2 inhibitor: Occurrence of adverse events (Table 2) out of proportion to clinical benefit (93.8-93.9%).

Conclusion

Our retrospective chart review reveals a high approval rate of VMAT2 inhibitors for FDA-approved indications.

DTBZ and VBZ were usually not covered by insurance for non-FDA approved conditions, while TBZ was covered most of the time.

VMAT2 inhibitors were effective in the treatment of various hyperkinetic movement disorders with adverse event rates that are similar to those reported in clinical trials.

A limitation of our retrospective study was the absence of a validated rating scale administered at each clinic visit.

Table 1: (above) All = male, F = female. Other = any other movement disorder treated with a VMAT2 inhibitor (one patient with peripheral dyskinetic movements and dystonia of unclear etiology and one patient with ophthalmoplegic-mydriatic syndrome).

Table 2 (right): GI = gastrointestinal, RXN = reaction. Adverse event (AE) rates are not directly comparable due to differences in dosing between different VMAT2 inhibitors. For example, one patient in the VBZ group reported nine separate AEs out of a total of 17 AEs reported for the whole group.

Figure 1: TBZ – Prescription Characteristics

Figure 2: TBZ – Reason for Insurance Denial

Figure 3: DTBZ – Prescription Characteristics

Figure 4: DTBZ – Reason for Insurance Denial

Figure 4: VBZ – Prescription Characteristics

Figure 5: VBZ – Reason for Insurance Denial

Figure 6: VBZ – Reason for Insurance Denial

Figure 7: Clinical Response to VMAT2 Inhibitors

References