DMT25

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Real-world persistence and adherence to ofatumumab versus other self-injectable disease modifying therapies (DMTs) in patients with multiple sclerosis (MS)

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SUMMARY

1 **Patients treated with OMB had significantly higher persistence at 6-month and at 12-month compared to patients treated with platform self-injectable DMTs. These findings held in the matched cohorts even after adjusting for demographics and clinical characteristics that remain unbalanced after matching.**

2 **This study also demonstrated that patients treated with OMB had significantly higher adherence at 6-month and at 12-month follow-up compared to patients treated with platform self-injectable DMTs. These findings held in the matched cohorts even after adjusting for demographic and clinical characteristics that remain unbalanced after matching.**

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INTRODUCTION

- Multiple sclerosis (MS) is a chronic, irreversible autoimmune disease of the central nervous system[1] that affects close to 1 million US adults.[2]
- Currently, no curative treatment exists for MS. However, several disease-modifying therapies (DMTs) are available which have been shown to significantly reduce relapse rates, slow disability worsening, and disease progression.[3]
- Ofatumumab (OMB) was approved in the US in Aug 2020 as the first B-cell therapy to be self-administered subcutaneously once-monthly for relapsing MS.[4]
- The ALITHIOS extension study showed that nearly 9 out of 10 patients remained on OMB over the long term (up to ≥4 years).[5]
- There is need for real-world data on persistence and adherence of OMB, and how it compares to platform self-injectable DMTs.

OBJECTIVE

- To compare persistence and adherence of OMB versus platform self-injectable DMTs

METHODS

STUDY DESIGN

- This was a retrospective cohort study utilizing the IQVIA PharMetrics® Plus data (a longitudinal health plan database of medical and pharmacy claims in the US).
- Adult patients diagnosed with MS and treated with OMB or a platform self-injectable DMT (glatiramer acetate, interferon beta-1a/1b, and peginterferon beta-1a) from Aug 2020 to Nov 2021 were identified and indexed on the first observed therapy. Patients were followed from the index date until discontinuation of the initial therapy or switch to another line of therapy, or 12-months post-index for persistent patients.
- Eligible patients were ≥18 years of age on the index date and had continuous enrollment in a health plan with medical and pharmacy benefits for ≥12 months prior to and 6-months after therapy initiation.
- Patients in the OMB cohort were 1:1 matched to patients in the platform self-injectable cohort using greedy nearest neighbor propensity score matching. Patients were matched on age, sex, region, Deyo-Charlson comorbidity index (DCCI), psychiatric diagnostic group (PDG) score, number of pre-index MS relapses, MS disability, and use of prior DMTs.

KEY OUTCOMES

- **Discontinuation** was defined as a >60-day gap in therapy of the index medication, defined as a gap between the last supply date (based on expected duration of treatment or days' supply) and the next claim date for the index therapy.
- **Persistence** was defined as the number of days from the index date until the earliest of discontinuation or a switch to a new DMT. It was measured during the post-index period which included the index date.
- **Adherence** was calculated based on proportion of days covered (PDC); adherence was defined as PDC ≥0.8.

STATISTICAL ANALYSES

- Median time to discontinuation was estimated using Kaplan Meier analysis.
- A stratified Cox proportional hazards model was used to compare the rate of treatment discontinuation between patients treated with OMB and platform self-injectable DMTs.
- A conditional logistic regression model was used to assess differences in adherence between patients treated with OMB and platform self-injectable DMTs.
- Variables remaining unbalanced between the cohorts were included in the models.

RESULTS

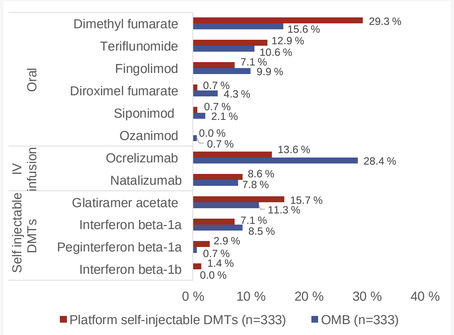
BASELINE CHARACTERISTICS

- A total of 1,168 patients met inclusion criteria (OMB n=576, platform self-injectable n=592).
- Prior to matching, the OMB cohort had a higher proportion of patients in the age group 45-54 years, who lived in the South and patients indexed in 2021.
  - After matching, the demographics and clinical characteristics were balanced between the two cohorts (**Table 1**). Categorical DCCI score and index year remained unbalanced after matching.
- Before matching, patients on OMB had more relapses pre-index (0.61 vs 0.38, respectively), higher proportion of patients with moderate MS disability, and with cerebellar and pyramidal symptoms compared to patients on platform self-injectable DMTs.
  - After matching, MS characteristics were balanced between the two cohorts **(Table 1).** Patients with cerebellar and pyramidal symptoms remained unbalanced even after matching.

MS TREATMENT HISTORY

- On average, 42.2% of patients had prior DMT use. Glatiramer acetate, ocrelizumab, and dimethyl fumarate were the most observed last self-injectable DMT, IV infusion, and oral, respectively, used among patients with prior DMT used (**Figure 1**).

Figure 1. Summary of Prior DMTs Before Index Treatment



MS CHARACTERISTICS

Table 1. Baseline Patient Characteristics

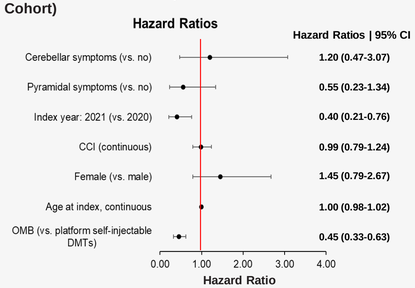
	All (N=666)	Ofatumumab (N=333)	Platform Self-Injectable DMTs (N=333)	p-value	SMD[3]
Age					
Mean (SD)	46.1 (10.7)	46.3 (10.2)	45.9 (11.3)	0.6088	0.0383
Sex (n,%)					
Male	137 (20.6%)	74 (22.2%)	63 (18.9%)	0.2737	0.0818
Female	529 (79.4%)	259 (77.8%)	270 (81.1%)		
Insurance type (n,%)					
Commercial	630 (94.6%)	316 (94.9%)	314 (94.3%)	0.9798	0.0332
Medicaid	7 (1.1%)	3 (0.9%)	4 (1.2%)		
Medicare	29 (4.4%)	14 (4.2%)	15 (4.5%)		
Deyo-Charlson comorbidity index (DCCI)					
Mean (SD)	0.6 (1.0)	0.6 (1.0)	0.5 (1.0)	0.5622	0.0445
Number of MS relapses prior to index DMT[1] (n,%)					
0	424 (63.7%)	210 (63.1%)	214 (64.3%)	0.8974	0.0276
1	182 (27.3%)	92 (27.6%)	90 (27.0%)		
2+	60 (9.0%)	31 (9.3%)	29 (8.7%)		
MS disability[2]					
None	222 (33.0%)	110 (33.0 %)	112 (33.6%)	0.8286	0.0723
Mild	96 (14.4%)	48 (14.4 %)	48 (14.4%)		
Moderate	258 (38.7%)	126 (37.8 %)	132 (39.6%)		
Severe	90 (13.5%)	49 (14.7 %)	41 (12.3%)		
Top 5 MS-related symptoms and secondary conditions					
Anxiety	207 (31.1%)	101 (30.3%)	106 (31.8%)	0.6821	-0.0325
Pyramidal symptoms	187 (28.1%)	110 (33.0%)	77 (23.1%)	**0.0023**	0.2219
Fatigue	182 (27.3%)	89 (26.7%)	93 (27.9%)	0.7216	-0.0270
Cerebellar symptoms	150 (22.5%)	86 (25.8%)	64 (19.2%)	**0.0294**	0.1587
IBS	96 (14.4%)	46 (13.8%)	50 (15.0%)	0.6625	-0.0342

Abbreviations: IBS, irritable bowel syndrome; MS, multiple sclerosis; SMD, standardized mean difference
[1]MS relapse was defined as having ≥ 1 inpatient visit with a primary diagnosis (diag1) of MS or ≥ 1 outpatient claim visit with a diagnosis code for MS in any position and ≥ 1 claim for oral or IV corticosteroid use on or within 7 days after the outpatient visit. Corticosteroid use within 5 days before or after a DMT infusion (alemtuzumab, ocrelizumab, natalizumab) was not be flagged as a relapse.
[2]MS disability was defined as having evidence of EDSS-related MS symptoms or DME use during the measurement period.[6]
[3]After propensity score matching

PRIMARY OUTCOMES

- In the matched cohorts, 19.2% of patients on OMB discontinued or switched to a new DMT within the first 6 months post-index versus 43.2% of patients in the platform self-injectable DMT cohort (p<0.0001).
- Among patients on OMB, 80.8%, 77.6%, and 74.5% of patients were persistent at 6-month, 9-month, and 12-month post-index versus 56.7%, 48.1%, and 43.2% patients in the platform self-injectable DMT cohort, respectively (p<0.0001). This indicates a 72% improvement in persistence over platform self-injectables at 12 months (**Figure 2**).
- Patients on OMB had a 55% lower risk of treatment discontinuation and 53% lower odds of non-adherence than patients on platform self-injectable DMT after adjusting for demographic and clinical characteristics that remained unbalanced after matching (**Figure 3** and **4**).

Figure 3. Stratified Cox Proportional Hazards Model (OMB vs Platform Self-Injectable DMTs Matched Cohort)



*Hazard ratio of <1.0 means that the factor is less likely to attribute to discontinuation

Figure 2. KM Curve for Time to Treatment Discontinuation (OMB vs Platform Self-Injectable DMTs Matched Cohort)

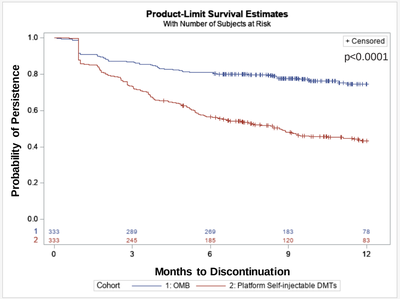
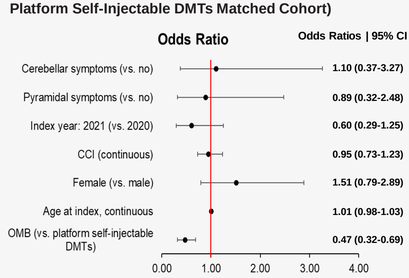


Figure 4. Conditional Logistic Regression (OMB vs Platform Self-Injectable DMTs Matched Cohort)



*Odds ratio of <1.0 means that the factor is less likely to attribute to adherence

Limitations

- The source population consists primarily of commercially insured patients in the US and may not be generalizable to other payer populations.
- Analyses using claims data are dependent on the accuracy and specificity of entered diagnostic codes.
- Early discontinuation may be overestimated if treatment occurred outside the purview of the claims data source, e.g., under a different payer structure including cash payments or within a clinical trial.
- Certain clinical and radiographic measurements of disease severity and socio-demographic variables are unavailable in claims data.

AFFILIATIONS: MG, CCC, RT and YG are employees of IQVIA Inc. and worked as consultants to Novartis Pharmaceuticals Corporation. QS, AG and BB are employees of Novartis Pharmaceuticals Corporation. CMH is an employee of the Cleveland Clinic Lou Ruvo Center for Brain Health and worked as a consultant to Novartis Pharmaceuticals Corporation.

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REFERENCES: **1.** Martin, R, et al. (2016), *Eur. J. Immunol., 46: 2078-2090*; **2.** Mitchell T., et al. (2019), *Neurology* Mar 2019, 92 (10) e1029-e1040; **3.** Finkelsztejn A. *Perspect Medicin Chem.* 2014 Oct 5;6:65-72. **4.** Kang C, et al. 2022 Jan;82(1):55-62. Erratum in: Drugs. 2021 Dec 29; **5.** Alvarez et al. (2022), *ECTRIMS 2022*. **6.** Berkovich R et al. *J Med Econ* 2021; **24**(1): 46-53.