



BACKGROUND

Multiple Sclerosis (MS) is a central nervous system (CNS) disease characterized by inflammation progression, and neurodegeneration. Damage to the CNS can start as early as onset and often before diagnosis. Consensus among MS specialists is that early initiation of disease modifying therapies (DMTs) within one year of diagnosis is essential [1,2,3]. Multiple studies have demonstrated that early treatment with DMT delays accumulation of disability and improves clinical outcomes [2,4,5]. Therefore, initiation of DMT expeditiously after diagnosis is important to reduce disease activity and optimize clinical outcome. MS diagnosis can take place in outpatient, inpatient, or emergency settings so a comprehensive view of subsequent care and treatment can be difficult to ascertain. Administrative claims are a useful tool to observe initiation of care and DMT selection.

OBJECTIVE

To characterize the initial disease modifying therapy (DMT) and time-to-treatment of people who receive a diagnosis of multiple sclerosis (MS).

METHODS

Longitudinal data of suspected newly diagnosed people with MS (PwMS) from a large payer commercial claims database spanning 2016 - 2021 were analyzed. Inclusion criteria required any combination of 3 non-overlapping claims with an MS diagnosis (ICD-10-CM: G35) and/or DMT within a year following the first G35. A minimum 5 years of continuous medical and prescription coverage with 2 years prior to and 1 year following the first G35 was required to establish likely initial diagnosis and observe initiation of DMT. Time-to-treatment statistics were calculated for DMTs initiated within a year of the first G35.

RESULTS

In the dataset of commercial claims containing 193,354 members with at least one MS diagnosis code, 26,930 members had 5 years of continuous medical and prescription coverage. Out of those, 2,024 members met inclusion criteria for this study. In this cohort of likely newly diagnosed PwMS, 17% had a claim for a DMT within 30 days of first MS diagnosis code, an additional 16% between 31 and 60 days, 11% between 61 and 90 days, and 13% between 91 and 180 days, with 9% over 180 days. 37% of members in this cohort did not have a DMT claim observed in the first year, with 34% not having any record of DMT following their initial G35 diagnosis for the duration of the study time window.

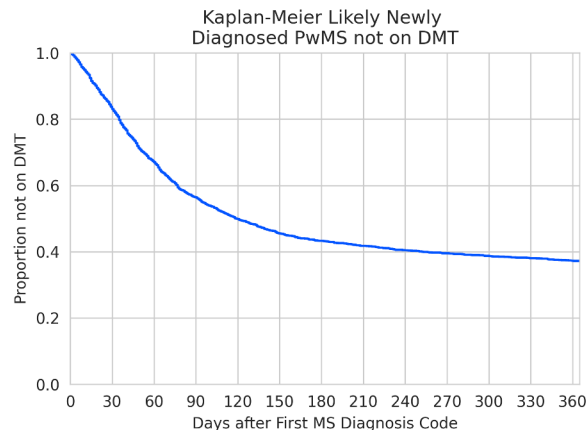


Figure 1. Kaplan-Meier curve of the time to first DMT following the first diagnosis code for MS (G35) in likely newly diagnosed PwMS.

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RESULTS (CONT'D)

Time-to-treatment varies by disease modifying therapy (DMT). The most frequent therapies initiated within a year post diagnosis were glatiramer acetate, dimethyl fumarate, and ocrelizumab with median (interquartile range) time-to-DMT of 35 (15-70), 47 (22-85), and 79 (51-131) days, respectively.

Most Frequent DMTs initiated by likely new diagnosis

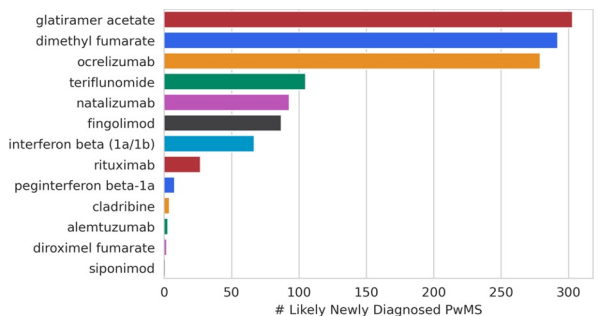


Figure 2. Most frequent DMTs initiated within the first year for people with MS likely diagnosed in 2018 or 2019.

Boxenplot of Time-to-Treatment

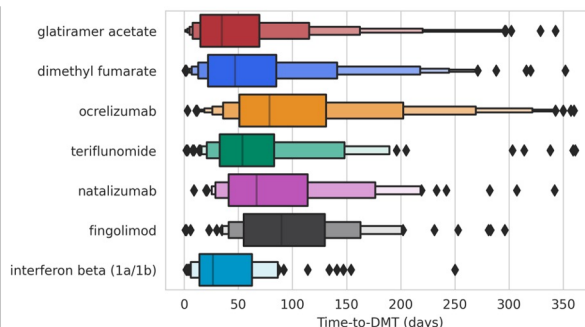


Figure 3. Boxenplot of time-to-treatment by disease modifying therapy. DMTs with less than 50 members were excluded.

Kaplan-Meier of Time-to-Treatment

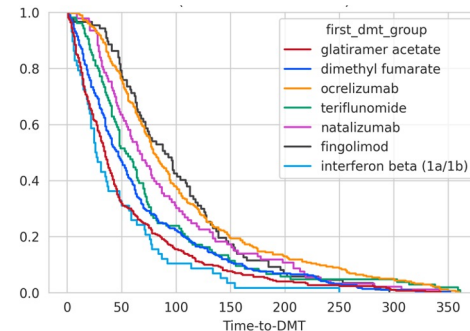


Figure 4. Kaplan-Meier curve of the time to first DMT in likely newly diagnosed PwMS initiating treatment in the first year. DMTs with less than 50 members were excluded.

CONCLUSIONS

- Many apparent newly diagnosed PwMS did not have a claim indicating start of a DMT within a year following the initial MS claim.
- There is substantial variation in initial DMT and time-to-DMT of those that started within a year.
- This study was based on administrative claims which have inherent limitations. Further study is needed to understand these results in a more complete clinical context and to understand factors that impact initiation of DMT.

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