Time spent with adequate supply of dimethyl fumarate in a specialty pharmacist-led monitoring program versus standard dispensation in British Columbia.

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INTRODUCTION

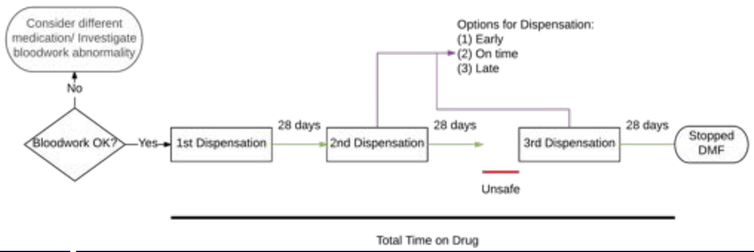
- Medication adherence is low, especially in the setting of chronic disease
- Dimethyl fumarate (DMF) is an oral disease-modifying therapy (DMT) that reduces MS relapses, the number of new or enlarging lesions on MRI and slows disability progression
- DMF and other fumarate esters have been associated with patients developing progressive multifocal leukoencephalopathy (PML) in the setting of prolonged lymphopenia
- PML is an opportunistic lytic brain infection caused by the John Cunningham (JC) virus in the setting of either immune suppression or immune modulation
- Monitoring lymphocyte levels every six months has been proposed and implemented as a risk mitigation strategy for PML
- A specialty, pharmacist-led monitoring program has been implemented in BC to promote patient adherence with medication and laboratory monitoring

OBJECTIVES

To compare proportion of time spent with adequate DMF doses for patients using a specialty pharmacist-led program with province-wide mail-order coverage versus standard pharmacy dispensation.

METHODS

- Single-center observational retrospective cohort study
- All patients with relapsing MS receiving DMF prescribed by a UBC MS Clinic Neurologist between May 2016 – March 2018
- Age, postal code, prescription fill data (prescription fill date, dose, dose frequency, number of doses)
- Primary endpoint: percent of time patients spent with an adequate supply of DMF
- Between-group comparisons carried out using an overdispersed logistic regression model



RESULTS

Of 361 patients prescribed DMF by a UBC MS Clinic neurologist, 193 had dispensation data available within the study period. The predominantly female population (132 patients) was on average 44 years old.

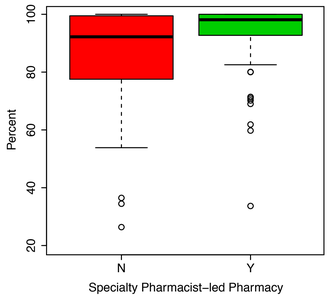


Figure 1. Percentage of time with adequate DMF during treatment period. Patients in the pharmacist-led program and standard care spent a median of 98.1 (IQR = 7.3) and 92.2 (IQR = 21.8) percent of their treatment period with adequate doses of DMF, respectively. The odds ratio (OR) of having adequate doses of DMF for those in the pharmacist-led program to those in standard care is 2.02 (95% CI = 1.30, 3.20; p = 0.003).

Figure 2. Location of patients prescribed DMF by a UBC MS Clinic neurologist. There were 179 patients with postal code data: 84 were urban and in the specialty pharmacy, 79 were urban and not in the specialty pharmacy, 10 were rural and in the specialty pharmacy and the remaining 6 were rural and not in the specialty pharmacy. StatCan Definitions: **Urban Center** – A location with a population greater than 10,000; **Rural** – A location outside the commuting area of an urban center.

A preliminary analysis was conducted and found that patients in the specialty pharmacist-led program did not spend more time with adequate laboratory monitoring when compared with standard care

CONCLUSION

- Patients in the pharmacist-led program spend more time with adequate doses of drug available in comparison to those receiving standard of care
- Patients in the pharmacist-led program do not spend more time with adequate laboratory monitoring in comparison to those receiving standard of care
- Limitations of the Study:
  - Assumed there was access to complete dispensation and lab data for all participants. There was difficulty with the electronic medical record that may have limited collection of complete laboratory data.
  - Participants took all medication dispensed to them, from the first date of dispensation to the end of their dispensation period.
  - Proportion of time off DMF was assumed to be equal between groups

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