Introduction

- Ofatumumab is the first fully human monoclonal anti-CD20 antibody approved in Canada for the initial treatment of relapsing-remitting multiple sclerosis (RRMS) with active disease
- A network meta-analysis (NMA) demonstrated that ofatumumab has similar efficacy compared to other highly efficacious monoclonal antibody therapies with respect to reducing relapse rates and disability progression, as well as a favourable safety profile
- Given patients with RRMS may experience deterioration physical and mental wellbeing, as well as economic instability, it is important to assess the costs and consequences of treatment with ofatumumab versus other first-line and second-line diseasemodifying therapies (DMTs) and best supportive care (BSC) in patients with RRMS

Objective

- To evaluate the costs and consequences of ofatumumab as an initial therapy versus other DMTs and BSC in adults with RRMS with active disease from a Canadian healthcare system perspective
- A scenario analysis also examined the impact of administering ofatumumab as a first-line therapy versus delaying ofatumumab (3 years vs. 5 years) until after treatment with commonly administered first-line therapies

Methods

Model Overview

- A Markov cohort model with 10 total health states representing disability status defined by the Expanded Disability Status Scale (EDSS) levels 0 to 9 and a single state for death (EDSS 10) was constructed
- The model used a 10-year time horizon with annual cycles and 1/5 discounting
- Baseline patient distribution was informed by a pooled analysis of the ASCLEPS trials
- Each year, patients could transition between EDSS states, experience a relapse, discontinue therapy, or die (Figure 1)

Figure 1. Model Structure

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Mild Disability</th>
<th>Walking Aids</th>
<th>Wheelchair</th>
<th>Bedridden</th>
<th>Relapse events at 10 years</th>
<th>% Patients at 10 years</th>
<th>% Employed at 10 years</th>
</tr>
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<tbody>
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<td>Baseline</td>
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Results

- Patients treated with ofatumumab versus a comparator had a lower degree of disability, as indicated by a greater percentage of patient time (67.47% spent in the mild disability health state, and lower percentage of patient time (3.25%) spent in the health state associated with greater disability (Figure 2)

Figure 2. Percent of patient time spent in each health state in the base case over a 10-year horizon for first-line and second-line treatments without treatment switching or delay

- Patients treated with ofatumumab versus a comparator had less YLL, YLD, and DALYs
- A scenario analysis also examined the impact of administering ofatumumab as a first-line therapy versus delaying ofatumumab (3 years vs. 5 years) until after treatment with commonly administered first-line therapies

Table 1. Delayed treatment scenario results for clinical outcomes over a 10-year time horizon for ofatumumab provided initially versus switching to ofatumumab after 3 and 5 years of treatment with another commonly used first-line DMT

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Conclusions:

- Ofatumumab had a higher efficacy DMT such as ofatumumab had beneficial effects compared to patients who delayed treatment initiation for up to 3-5 years. Patients switching to ofatumumab earlier in their disease course achieved greater disability reduction while reducing costs
- Given its high efficacy, favourable safety profile, and ability for patients to self-administer treatment at home, ofatumumab is the first treatment option that may shift the treatment paradigm towards early high efficacy monotherapies for all patients with RRMS

References: