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Cost effectiveness of Ofatumumab in Comparison with Other Disease Modifying Therapies and Best Supportive Care for the Treatment of Relapsing-Remitting Multiple Sclerosis in Canada

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ABSTRACT:

OBJECTIVE: To evaluate the cost effectiveness of ofatumumab against other disease-modifying therapies (DMTs) and best supportive care (BSC) for the treatment of adult patients with relapsing-remitting Multiple Sclerosis (RRMS) from a Canadian healthcare system perspective.

BACKGROUND: Ofatumumab is a high-efficacy, first-line DMT with a favorable benefit-risk profile recently approved in Canada to treat RRMS with active disease. **DESIGN/METHODS:** 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 death state (EDSS 10) was run over

65-years using an annual cycle length, 1.5% annual discount rate, and 100% treatment discontinuation at 10 years. Probabilistic analyses were conducted sequentially as per Canadian guidelines. Baseline patient distribution was informed by the ASCLEPIOS trials. Each year, patients could transition between EDSS states, experience a relapse, discontinue therapy, or die. Natural history transition probabilities were informed by the British Columbia database. Treatment effects for each DMT were modelled using hazard ratios for 6-month confirmed disability progression and annualized relapse rates from a published network meta-analysis. Treatment-related adverse event probabilities were based on individual clinical trials. Health utilities and costs were obtained from Canadian sources (where possible) and the literature. **RESULTS:** Ofatumumab was dominant (more efficacy, lower costs) over first-line DMTs teriflunomide, interferons, dimethyl fumarate, and ocrelizumab, and resulted in incremental cost-effectiveness ratios (ICERs) of \$24,177 Canadian dollars per quality-adjusted life-years (QALYs) gained versus glatiramer acetate and \$28,034 versus BSC. At a willingness-to-pay threshold of \$50,000/QALY, ofatumumab had the highest probability of being cost effective (63.3%). Scenario analysis results demonstrated that ofatumumab dominated second-line treatments natalizumab and fingolimod; and resulted in an ICER of \$50,899 versus cladribine. **CONCLUSIONS:** Ofatumumab is cost effective against all comparators and dominant against all currently approved and reimbursed first-line DMTs for RRMS, except glatiramer acetate.