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Earlier ofatumumab treatment May reduce disease progression and relapses for patients with relapsing-remitting multiple sclerosis: results from a cost-consequence model

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Introduction: Oral disease-modifying therapies (DMTs), such as dimethyl fumarate (DMF), are the most common treatments prescribed for relapsing-remitting multiple sclerosis (RRMS) in the NHS; infusion DMTs are less frequently used.[1] Ofatumumab, a self-administered subcutaneous MS DMT, is effective at reducing relapses and slowing disease progression compared with teriflunomide, as demonstrated in the ASCLEPIOS trials.[2] During the NICE appraisal, clinical experts noted that ofatumumab could be used as a first-line treatment for RRMS.
Objectives: To evaluate ofatumumab as a first-line treatment versus second-line after initial DMF use.
Methods: A discrete time cohort Markov model based on disease progression through Expanded Disability Status Scale (EDSS) health states with annual cycles and 10-year time horizon was employed. Two cohorts, modelled separately, allowed evaluation of treatment delay. Baseline characteristics, EDSS distribution, annualised relapse rate (ARR) ratio and hazard ratio for 6-month confirmed disability progression (6M-CDP) were obtained from the ASCLEPIOS trials of ofatumumab.[2] ARR ratios and hazard ratios for time to 6M-CDP for ofatumumab and DMF (versus placebo) were obtained from a network meta-analysis.[3] Literature values for natural history of EDSS transitions, mortality and ARR data were used.
Results: Over 10 years, a patient treated with ofatumumab was predicted to have fewer relapses (3.78) than one treated with DMF for 3 years (4.23) before switching to ofatumumab, or treated with DMF only (4.67). After 5 years, 5.9% of patients receiving ofatumumab progressed to EDSS ≥7, compared with 8.0% of those receiving DMF for 3 years and 8.7% of those receiving DMF only. After 10 years, 15.3% of ofatumumab patients progressed to EDSS ≥7 versus 18.1% of those receiving DMF for 3 years and 20.7% of patients receiving DMF only.
Conclusion: Over 10 years, ofatumumab treatment was predicted to reduce relapse events and result in fewer patients progressing to EDSS ≥7 when compared with those receiving delayed ofatumumab (after 3 years of DMF), or DMF only.

References

1. Scolding N. Pract Neurol 2015;15:273–9; **2.** Hauser SL. N Engl J Med 2020;383:546–57; **3.** Samjoo IA. J Comp Eff Res 2020;9:1255–74.

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