

## **Alemtuzumab Improves Clinical and MRI Disease Activity Outcomes, Including Slowing of Brain Volume Loss, in RRMS Patients Over 8 Years: CARE-MS I Follow-up (TOPAZ Study)**

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**SHORT TITLE:** Efficacy/Safety of Alemtuzumab Over 8 Years

**BACKGROUND:** In the 2-year (y) CARE-MS I trial (NCT00530348), 2 alemtuzumab courses (12 mg/day; baseline: 5 days; 12 months later: 3 days) significantly improved clinical and MRI outcomes vs SC IFNB-1a in treatment-naïve RRMS patients. In a 4-y extension (NCT00930553), patients could receive additional alemtuzumab (12 mg/day on 3 days; ≥12 months apart) as needed for disease activity or other disease-modifying therapy (DMT) per investigator's discretion. Efficacy was maintained in the extension, with 63% of patients receiving no additional alemtuzumab or other DMTs through Y6. Patients could continue in an additional 5-y extension study (TOPAZ; NCT02255656) for further evaluation.

**OBJECTIVES:** To evaluate the 8-y efficacy/safety of alemtuzumab in CARE-MS I patients.

**METHODS:** At investigator's discretion, patients in TOPAZ can receive additional as-needed alemtuzumab (≥12 months apart) or other DMT.

**RESULTS:** 290/376 (77%) patients completed TOPAZ Y2 (Y8 after initiating alemtuzumab). Through Y8, 56% of patients received neither additional alemtuzumab nor another DMT. At Y8, the annualized relapse rate was 0.14, and 88% of patients were relapse-free. From core study baseline through Y8, 78% of patients had stable/improved EDSS scores, and mean change in EDSS score was 0.07. Through Y8, 71% of patients were free from 6-month confirmed disability worsening, and 41%

achieved 6-month confirmed disability improvement. In Y8, 60% of patients achieved no evidence of disease activity, 67% were free from MRI disease activity, and 87% were free from new gadolinium-enhancing lesions. Median percent brain volume loss (BVL) from baseline through Y8 was  $-1.83\%$ ; BVL was  $-0.22\%$  or less annually in Y3–8. Alemtuzumab safety profile remained consistent through Y8, with no new cases of immune thrombocytopenia or nephropathy.

**CONCLUSION:** Efficacy of alemtuzumab on clinical, MRI, and BVL outcomes was maintained over 8 y in absence of continuous treatment in CARE-MS I patients, with a consistent and manageable safety profile.

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