Alemtuzumab Durably Slows Brain Volume Loss Over 6 Years in the Absence of Continuous Treatment in Patients With Active RRMS Who Were Treatment-Naive (CARE-MS I) or Had an Inadequate Response to Prior Therapy (CARE-MS II)

A. Rovira[1], A. Traboulsee[2], M. Barnett[3], G. Comi[4], D. Pelletier[5], S. Schippling[6], D. H. Margolin[7], K. Thangavelu[7], K. Nakamura[8], D. L. Arnold[9,10]
[1]*Multiple SC, Vall d'Hebron University Hospital, Spain*
[2]*Multiple SC, University of British Columbia, Canada*
[3]*Multiple SC, University of Sydney, Australia*
[4]*Multiple SC, University Vita-Salute San Raffaele, Italy*
[5]*Keck School of Medicine, University of Southern California, USA*
[6]*Neuroimmunology & Multiple Sclerosis Research, University Hospital Zurich & University of Zurich, Switzerland*
[7]*Multiple SC, Sanofi Genzyme, USA*
[8]*Multiple SC, Cleveland Clinic, USA*
[9]*Multiple SC, NeuroRX Research, Canada*
[10]*Montreal Neurological Institute, McGill University, Canada*

BACKGROUND: Alemtuzumab significantly slowed brain volume loss (BVL) over 2 years versus SC IFNB-1a in active RRMS patients who were treatment-naive (CARE-MS I; NCT00530348) or had inadequate response (≥1 relapse) to prior therapy (CARE-MS II; NCT00548405). Efficacy was durable through 5 years in an extension (NCT00930553) in the absence of continuous treatment. OBJECTIVE: Evaluate effect of alemtuzumab on BVL over 6 years. METHODS: Patients received 2 courses of alemtuzumab 12 mg (baseline: 5 days; 12 months later: 3 days), with as-needed alemtuzumab retreatment for relapse or MRI activity, or another DMT per investigator discretion, in the extension. BVL was derived by relative change in brain parenchymal fraction. RESULTS: Through 6 years, 325/349 (93%) CARE-MS I and 344/393 (88%) CARE-MS II patients remained on study. Alemtuzumab slowed median yearly BVL over 2 years, maintaining low BVL in Years 3–6 in CARE-MS I (Year 1: –0.59%, Year 2: –0.25%, Year 3: –0.19%, Year 4: –0.14%, Year 5: –0.20%, Year 6: –0.17%) and CARE-MS II (Year 1: –0.48%, Year 2: –0.22%, Year 3: –0.10%, Year 4: –0.19%, Year 5: –0.07%, Year 6: –0.10%) patients. 63% (CARE-MS I) and 50% (CARE-MS II) of patients received no additional alemtuzumab and no other DMT after 2 initial alemtuzumab courses. CONCLUSIONS: Slowing of BVL with alemtuzumab was maintained over 6 years in RRMS patients, with median annual BVL ≤0.2% in Years 3–6 in both studies. Based on these findings, alemtuzumab may provide a unique treatment approach with durable efficacy in the absence of continuous treatment.