Supplementary Material

**eTable.** Baseline characteristics of alemtuzumab-only patients who did and did not convert to secondary progressive MS\(^a\) (optimal definition), and who discontinued or did not enter the extension: individual CARE-MS I and II studies.

**eFigure 1.** Trajectory by year of (A) ARR, (B) mean EDSS score, (C) mean new Gd-enhancing MRI lesion count, and (D) mean new/enlarging T2 hyperintense MRI lesion count in alemtuzumab-only patients.

Abbreviations: ARR, annualized relapse rate; CI, confidence interval; EDSS, Expanded Disability Status Scale; Gd, gadolinium; SE, standard error.

**eFigure 2.** Trajectory by year of (A) ARR, (B) mean EDSS score, (C) mean new Gd-enhancing MRI lesion count, and (D) mean new/enlarging T2 hyperintense MRI lesion count in IFN-alemtuzumab patients.

Abbreviations: ARR, annualized relapse rate; CI, confidence interval; EDSS, Expanded Disability Status Scale; Gd, gadolinium; SE, standard error.
**eTable.** Baseline characteristics of alemtuzumab-only patients who did and did not convert to secondary progressive MS\(^a\) (optimal definition), and who discontinued or did not enter the extension: individual CARE-MS I and II studies.

| Characteristic\(^b\) | CARE-MS I alemtuzumab-only | CARE-MS II alemtuzumab-only |
|-----------------------|-----------------------------|----------------------------|
|                       | Patients who converted to secondary progressive MS \((n=4)\) | Patients who did not convert to secondary progressive MS \((n=372)\) | Patients who discontinued or did not enter the extension \((n=51)\) | Patients who converted to secondary progressive MS \((n=16)\) | Patients who did not convert to secondary progressive MS \((n=419)\) | Patients who discontinued or did not enter the extension \((n=87)\) |
| Age, years            | 34.5 (8.2)                  | 33.0 (8.0)                  | 32.4 (7.8)                  | 37.1 (6.4)                  | 34.6 (8.4)                  | 33.8 (8.8)                  |
| EDSS score            | 2.6 (0.8)                   | 2.0 (0.8)                   | 2.3 (0.7)                   | 3.6 (1.2)                   | 2.7 (1.2)                   | 2.8 (1.3)                   |
| MS disease duration, years | 2.2 (0.9)                  | 2.1 (1.4)                  | 2.3 (1.4)                  | 5.2 (2.8)                  | 4.4 (2.7)                  | 4.2 (2.6)                  |
| No. of relapses in prior year | 1.5 (0.6)                | 1.8 (0.8)                  | 1.9 (0.9)                  | 1.6 (0.7)                  | 1.7 (0.9)                  | 1.5 (0.9)                  |
| No. of relapses in prior 2 years | 2.8 (0.5)                | 2.5 (0.9)                  | 2.7 (1.1)                  | 2.7 (0.8)                  | 2.8 (1.2)                  | 2.9 (1.2)                  |
| No. of Gd-enhancing lesions | 3.5 (4.0)                | 2.3 (5.1)                  | 1.2 (2.7)                  | 6.8 (7.9)                  | 2.1 (5.9)                  | 1.8 (3.8)                  |
| Proportion with Gd-enhancing lesions, \(n/N\) (%) | 3/4 (75)                  | 168/367 (46)               | 16/51 (31)                 | 13/15 (87)                 | 168/414 (41)               | 35/86 (41)                 |
| T2 hyperintense lesion volume, cm\(^3\) | 7.9 (3.7)                  | 7.4 (9.1)                  | 8.0 (9.0)                  | 13.7 (11.2)                | 9.8 (12.3)                 | 8.4 (9.8)                  |
| T1 hypointense lesion volume, cm\(^3\) | 1.7 (1.0)                  | 1.2 (2.1)                  | 1.2 (2.0)                  | 3.4 (5.2)                  | 1.9 (3.8)                  | 1.2 (2.3)                  |
| Brain parenchymal fraction | 0.84 (0.03)              | 0.82 (0.02)                | 0.82 (0.02)                | 0.81 (0.02)                | 0.81 (0.02)                | 0.82 (0.02)                |

Abbreviations: CARE-MS, Comparison of Alemtuzumab and Rebif\(^\circledR\) Efficacy in Multiple Sclerosis; EDSS, Expanded Disability Status Scale; Gd, gadolinium; SD, standard deviation.

\(^a\)Progression start date ≥180 days after prior relapse.

\(^b\)Values represent mean (SD) unless indicated otherwise.
eFigure 1. Trajectory by year of (A) ARR, (B) mean EDSS score, (C) mean new Gd-enhancing MRI lesion count, and (D) mean new/enlarging T2 hyperintense MRI lesion count in alemtuzumab-only patients.

Abbreviations: ARR, annualized relapse rate; CI, confidence interval; EDSS, Expanded Disability Status Scale; Gd, gadolinium; SE, standard error.
**Mean New Gd-Enhancing Lesion Counts (95% CI)**

- **Core Study**
  - Y1: 0.55, 0.33
  - Y2: 0.50, 0.42
  - Y3: 0.50, 0.40
  - Y4: 0.18, 0.40
  - Y5: 0.52, 0.39
  - Y6: 0.52, 0.41

- **Extension Study**
  - Y1: 0.07, 0.52
  - Y2: 0.07, 0.52
  - Y3: 0.07, 0.52
  - Y4: 0.07, 0.52
  - Y5: 0.07, 0.52
  - Y6: 0.07, 0.52

**With secondary progressive MS**  
**Without secondary progressive MS**

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**Mean New/Enlarging T2 Lesion Count (95% CI)**

- **Core Study**
  - Y1: 2.05, 1.87
  - Y2: 2.22, 1.96
  - Y3: 2.35, 2.21
  - Y4: 2.05, 2.71
  - Y5: 2.10, 2.21

- **Extension Study**
  - Y1: 2.05, 1.87
  - Y2: 2.22, 1.96
  - Y3: 2.35, 2.21
  - Y4: 2.05, 2.71
  - Y5: 2.10, 2.21

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With secondary progressive MS  
Without secondary progressive MS
**eFigure 2.** Trajectory by year of (A) ARR, (B) mean EDSS score, (C) mean new Gd-enhancing MRI lesion count, and (D) mean new/enlarging T2 hyperintense MRI lesion count in IFN-alemtuzumab patients.

Abbreviations: ARR, annualized relapse rate; CI, confidence interval; EDSS, Expanded Disability Status Scale; Gd, gadolinium; SE, standard error.
C

Mean New Gd-Enhancing Lesion Counts (95% CI)

| Year | Core Study | Extension Study |
|------|------------|-----------------|
|      | With secondary progressive MS | Without secondary progressive MS |
| Y1   | 0.70       | 0.64            |
| Y2   | 0.11       | 0.50            |
| Y3   | 0.50       | 0.55            |
| Y4   | 1.00       | 0.27            |
| Y5   | 0.11       | 0.30            |
| Y6   | 1.20       | 0.36            |

With secondary progressive MS
Without secondary progressive MS

D

Mean New/Enlarging T2 Lesion Count (95% CI)

| Year | Core Study | Extension Study |
|------|------------|-----------------|
|      | With secondary progressive MS | Without secondary progressive MS |
| Y1   | 9.10       | 4.60            |
| Y2   | 2.29       | 2.69            |
| Y3   | 1.00       | 1.60            |
| Y4   | 1.00       | 0.95            |
| Y5   | 3.78       | 1.11            |
| Y6   | 1.65       | 1.92            |

With secondary progressive MS
Without secondary progressive MS