

Longer-Term Safety and Efficacy of Ofatumumab in People With Relapsing Multiple Sclerosis for Up to 6 Years

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KEY FINDINGS & CONCLUSIONS

- At Year 6, **9 of 10** participants were **free of disease activity (no evidence of disease activity [NEDA-3])** in both the continuous and switch groups
- Participants who were initially treated with teriflunomide (TER) had initially significantly lower rates of NEDA-3, but these rates **rapidly increased after switching to ofatumumab (OMB)**
- Continuous OMB treatment** was associated with **fewer confirmed disability-worsening events up to 6 years** vs switching from TER, supporting the long-term benefit of **earlier initiation of OMB**, which cannot be recovered in those initially randomized to TER
- The sustained efficacy of OMB for up to 6 years was accompanied by a **consistent safety profile**, with no unexpected safety signals
 - The rate of adverse events, serious adverse events, serious infections, and malignancies **remained stable**, with no increased risks over 6 years
- Mean immunoglobulin (Ig) G levels **remained stable**, whereas mean IgM levels decreased but **remained above the lower limit of normal**; no clinically meaningful association between reductions in Ig levels and risk of serious infections was observed

These results support the long-term, favorable benefit-risk profile of OMB treatment (up to 6 years) and reinforce the benefit of early OMB initiation in people with relapsing multiple sclerosis



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INTRODUCTION

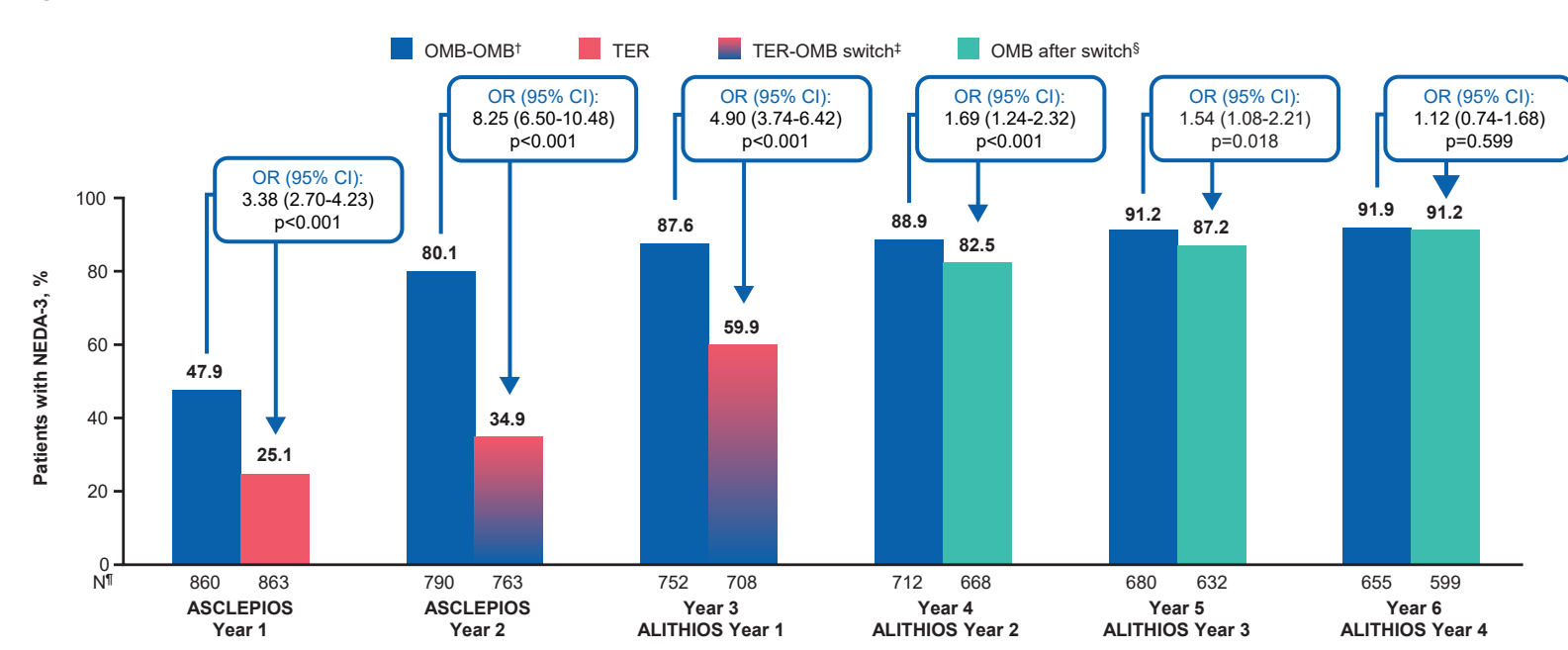
- Ofatumumab (OMB), a fully human anti-CD20 monoclonal antibody with a 20-mg subcutaneous monthly dosing regimen, is approved for treating relapsing multiple sclerosis (RMS) in adults¹
 - In the United States, OMB is indicated for the treatment of relapsing forms of multiple sclerosis (MS), including clinically isolated syndrome, relapsing-remitting disease, and active secondary progressive disease, in adults
- The phase 3 ASCLEPIOS I/II trials demonstrated the superiority of OMB (up to 30 months) compared with teriflunomide (TER) in reducing the clinical and magnetic resonance imaging disease activity while maintaining a favorable safety profile in people with RMS (pwRMS)²
- Treatment with OMB for up to 5 years showed sustained efficacy and a favorable safety profile during the ALTHIOS open-label extension study^{3,4}
 - Data cutoff: September 25, 2022
- Longer-term safety and efficacy assessments are important to further understand OMB's benefit-risk profile in pwRMS

OBJECTIVE

- To assess the longer-term safety and efficacy of OMB treatment for up to 6 years (data cutoff: September 25, 2023) in pwRMS

RESULTS

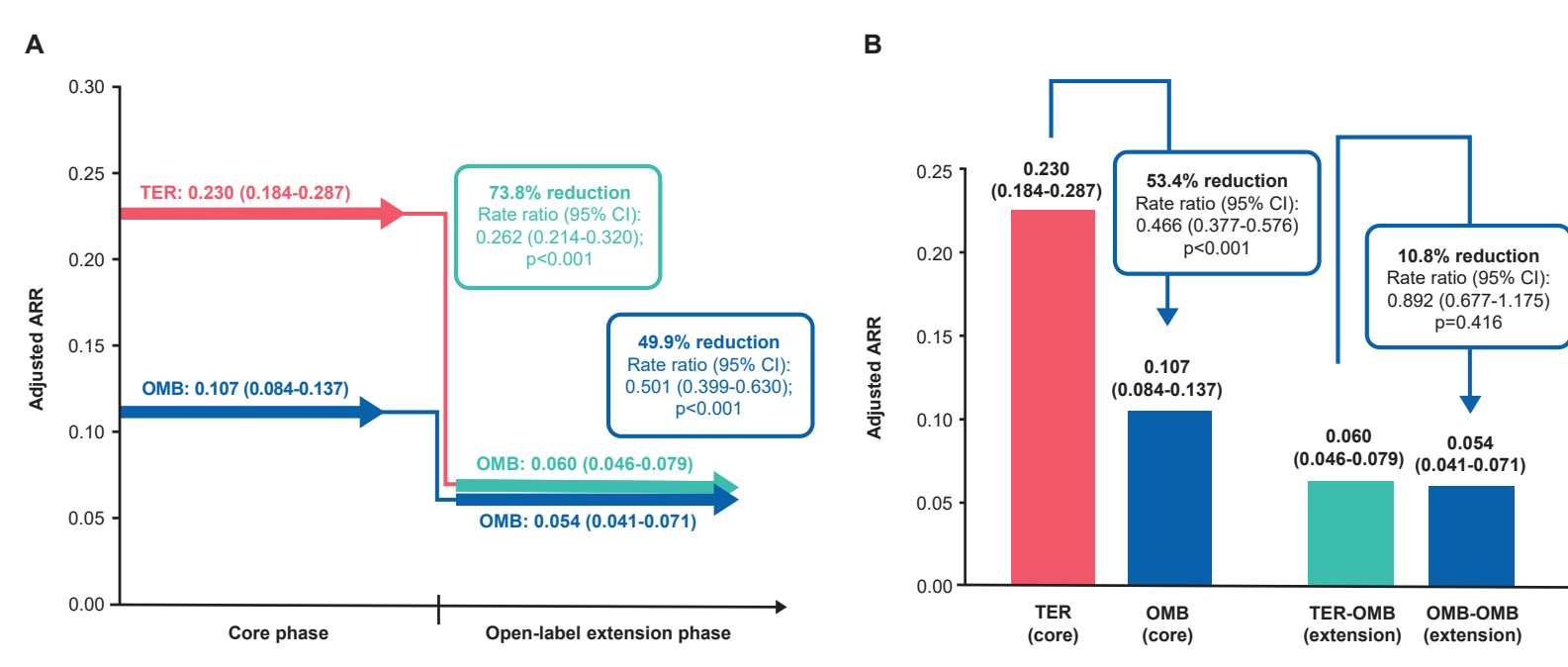
Figure 2. NEDA-3* Status After Up to 6 Years of OMB Treatment



6mCDW, 6-month confirmed disability worsening; Gd+, gadolinium-enhancing; MS, multiple sclerosis; NEDA-3, no evidence of disease activity; nT2, new or enlarging T2; OMB, ofatumumab; OR, odds ratio; TER, teriflunomide; *NEDA-3 is defined as no 6mCDW, no confirmed MS relapse, no nT2 lesions, and no Gd+ T1 lesions; †Continuous OMB; ‡Participants transitioning from TER to OMB; §Due to event-driven core study design (flexible duration), participants transitioned at various exposure time points (ie, the switch from TER to OMB started from Year 2 and was completed by Year 3); ††TER participants flow on OMB; ‡‡N is the total number of participants in the treatment group, excluding those who discontinued treatment early for reasons other than lack of efficacy or death and had NEDA-3 before early discontinuation

- At Year 6, 9 of 10 participants were free of disease activity (no evidence of disease activity [NEDA-3]) in the continuous and switch groups (Figure 2)
- There was a rapid initial increase in NEDA-3 with continuous OMB; high rates of NEDA-3 were maintained over 6 years (Figure 2)
 - ~90% of participants on continuous OMB achieved NEDA-3 within 3 years of starting treatment
- Participants who were initially on TER had significantly lower NEDA-3 rates, but a rapid increase in NEDA-3 was observed after switching to OMB, with >80% of patients achieving NEDA-3 within 1 year of switching (Figure 2)

Figure 3. (A) Within-Group and (B) Between-Group Comparisons* Between the Core and Extension Phase (Continuous OMB and Switch Groups)



ARR, annualized relapse rate; EDSS, Expanded Disability Status Scale; Gd+, gadolinium-enhancing; OMB, ofatumumab; OMB-OMB, continuous ofatumumab; TER, teriflunomide; TER-OMB, switch from teriflunomide to ofatumumab; *ARRs are obtained from fitting a piecewise negative binomial model for the core phase and extension phase time period with log-link, adjusted for treatment and region as factors and number of relapses in previous year, baseline EDSS, baseline number of Gd+ lesions, and the participant's age at baseline as covariates. The natural log of the time-in-study (in years) by period is used as offset to annualize the relapse rate in each period. Baseline variables are from the core study baseline. All p-values are nominal p-values

- A sustained low annualized relapse rate (ARR) was observed in participants receiving OMB for up to 6 years (Figure 3)
 - Confirmed relapses are those accompanied by a clinically relevant change in the Expanded Disability Status Scale
- Continuous treatment with OMB up to 6 years was associated with a significant reduction in ARR by 49.9% (Figure 3A)
- A switch from TER to OMB resulted in a **pronounced reduction in ARR (73.8%)** (Figure 3A)
- A significant reduction in the ARR was observed for OMB vs TER in the core ASCLEPIOS I/II studies, and both groups receiving OMB in the extension study maintained a low ARR (Figure 3B)

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METHODS

Figure 1. Participant Disposition and Key Assessments

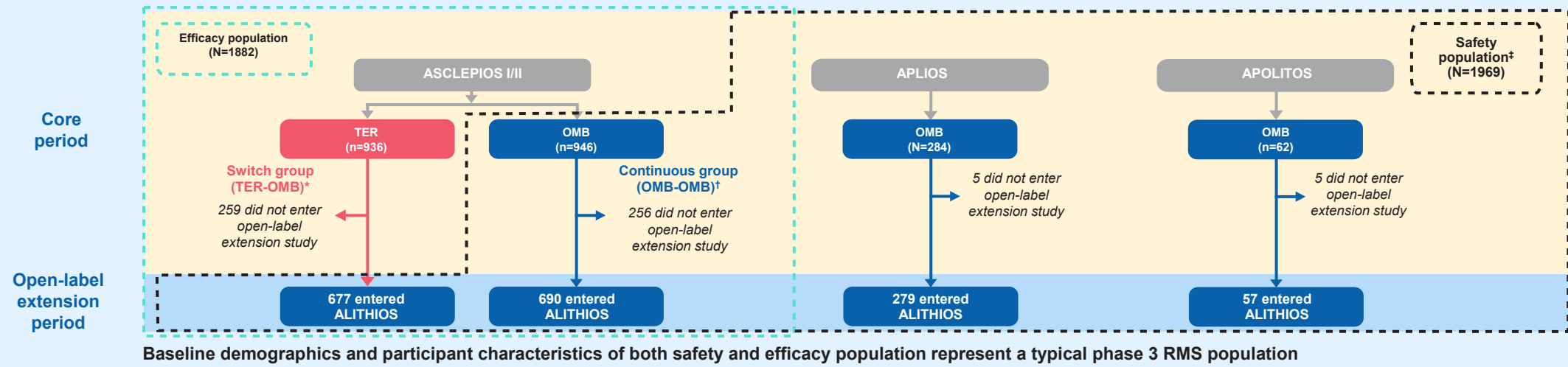
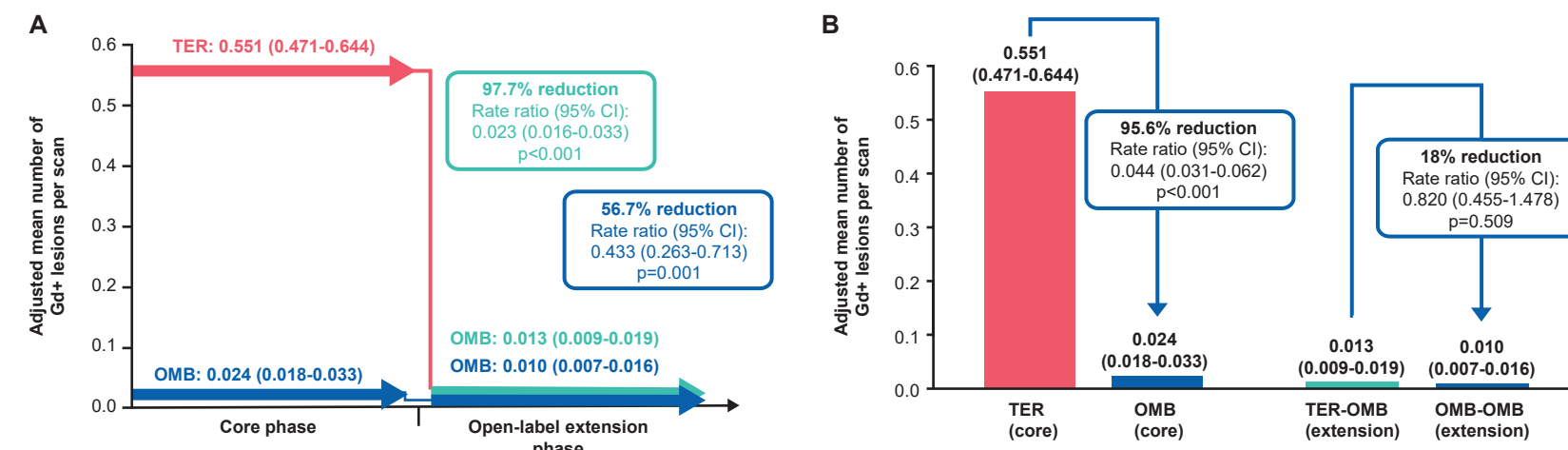


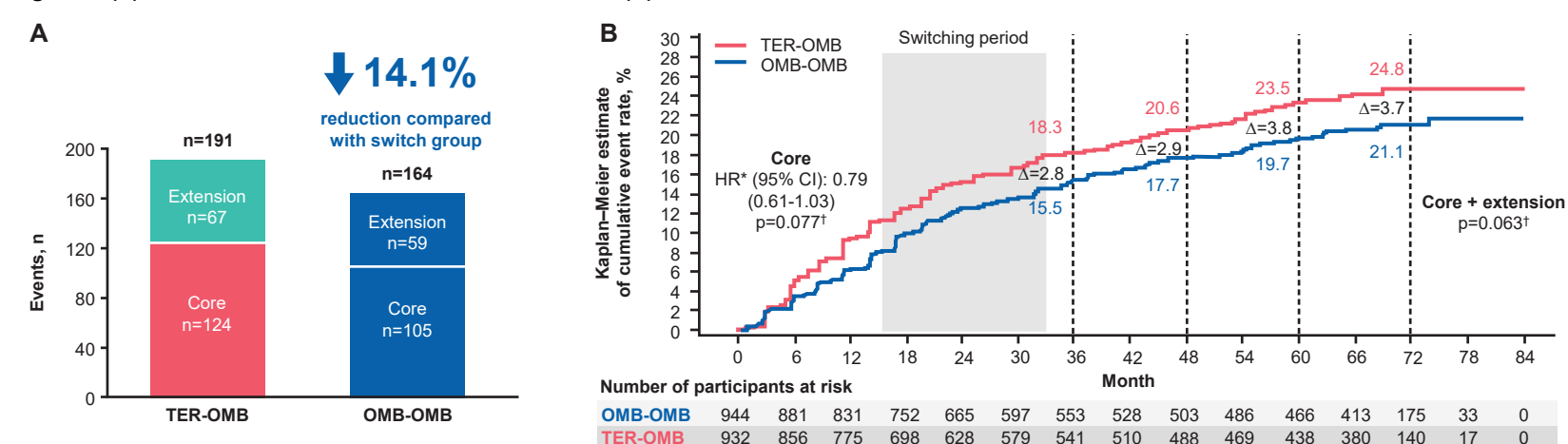
Figure 4. (A) Within-Group and (B) Between-Group Comparisons* Between the Core and Extension Phase for Gd+ T1 Lesions (Continuous OMB and Switch Groups)



Gd+, gadolinium-enhancing; OMB, ofatumumab; OMB-OMB, continuous ofatumumab; TER, teriflunomide; TER-OMB, switch from teriflunomide to ofatumumab; *Estimated from fitting a piecewise negative binomial model for the core phase and extension phase time period with log-link, adjusted for treatment and region as factors and baseline number of T1 Gd+ lesions and participant's age at baseline as covariates. The natural log of the number of scans with evaluable Gd+ lesion counts by period is used as offset to obtain the lesion rate per scan in each period. Baseline variables are from the core study baseline. All p-values are nominal p-values

- Gadolinium-enhancing (Gd+) T1 lesion activity remained almost completely suppressed in participants receiving OMB for up to 6 years (Figure 4)
- Continuous OMB treatment was associated with a significant reduction in the mean number of lesions per scan by 56.7% with longer-term treatment (Figure 4A)
- A switch from TER to OMB resulted in an almost complete suppression of Gd+ T1 lesion activity (97.7%) (Figure 4A)
- A significant reduction in the mean number of Gd+ T1 lesions was observed for OMB vs TER in the core ASCLEPIOS I/II studies (Figure 4B)
- Gd+ T1 lesions were almost completely suppressed during the extension phase in both the continuous OMB group and the switch group (Figure 4B)

Figure 5. (A) Cumulative Number of First 6mCDW Events; (B) Time to First 6mCDW Event



Δ, difference in Kaplan-Meier estimates (TER-OMB minus OMB-OMB); 6mCDW, 6-month confirmed disability worsening; HR, hazard ratio; OMB, ofatumumab; OMB-OMB, continuous ofatumumab; TER-OMB, switch from teriflunomide to ofatumumab; *Cut-off for the core and extension phases refers to the first dose of OMB in the extension phase; HR was determined by Cox regression model. †p-Value represents log-rank test

- Earlier OMB treatment was associated with a lower number of 6-month confirmed disability worsening (6mCDW) events up to 6 years (Figure 5)
- Continuous use of OMB for up to 6 years resulted in a sustained reduction of 6mCDW events vs the switch group, highlighting the efficacy benefit that cannot be recovered in those initially randomized to TER (Figure 5A)
 - Rates of 6-month progression independent of relapse activity were also lower at 6 years with continuous OMB vs switch from TER (Figure 5B)
- Continuous OMB treatment was associated with a significantly lower number of 3-month confirmed disability worsening events (p<0.05) up to 6 years (Figure 5)

Table 1. Safety Profile of OMB With Up to 6 Years of Treatment

| AE | Core, ASCLEPIOS* | | | Core + extension: overall OMB (N=1969) | | |
|---|------------------|------------------------|------------|--|-------------|------------------------|
| | OMB, n (%) | OMB, EAIR (95% CI) | TER, n (%) | TER, EAIR (95% CI) | n (%) | EAIR (95% CI) |
| Participants with ≥1 AE | 791 (83.61) | 188.55 (175.86-202.16) | 788 (84.2) | 188.92 (176.18-202.58) | 1796 (91.2) | 116.71 (111.44-122.24) |
| AEs leading to OMB discontinuation | 83 (8.77) | 5.56 (4.48-6.89) | 73 (7.8) | 4.94 (3.93-6.21) | 323 (16.4) | 4.40 (3.94-4.91) |
| Infections and infestations | 54 (5.70) | 5.14 (4.60-5.88) | 49 (5.27) | 52.59 (48.14-57.44) | 1481 (7.5) | 38.86 (36.87-40.97) |
| Serious infections | 24 (2.54) | 1.55 (1.04-2.31) | 17 (1.8) | 1.12 (0.69-1.80) | 115 (5.8) | 1.48 (1.23-1.77) |
| Serious infections (excluding COVID-19) | 24 (2.54) | 1.55 (1.04-2.31) | 17 (1.8) | 1.12 (0.69-1.80) | 71 (3.6) | 0.90 (0.72-1.14) |
| Serious COVID-19 infections | 0 | 0 | 0 | 0 | 49 (2.5) | 0.62 (0.47-0.81) |
| Injection-related systemic reactions | 195 (20.61) | 15.49 (13.46-17.83) | 143 (15.3) | 10.90 (9.25-12.84) | 514 (26.1) | 8.50 (7.79-9.26) |
| Injection-site reactions | 103 (10.88) | 7.21 (5.94-8.74) | 52 (5.55) | 3.54 (2.70-4.65) | 256 (13.0) | 3.58 (3.17-4.05) |
| Malignancies | 5 (0.53) | 0.32 (0.13-0.77) | 4 (0.4) | 0.26 (0.10-0.69) | 27 (1.4) | 0.34 (0.23-0.49) |
| Deaths | 0 | 0 | 1† | 0 | 10† (0.5) | 0 |

AE, adverse event; EAIR, exposure-adjusted incidence rate; Ig, immunoglobulin; OMB, ofatumumab; PV, patient-year; SAE, serious adverse event; TER, teriflunomide; EAIR per 100 PYs is defined as the expected number of patients with the given event over 100 years of exposure to a treatment, assuming the event rate is constant over time. This is estimated by Poisson regression where participants' time is taken until first event occurrence or the last day the patient was at risk for those who did not have the event. †Hazard ratio; ‡Deaths due to aortic dissection; §Preferred terms for these 10 cases include: sudden death (n=1), completed suicide (n=1), COVID-19 and COVID-19 pneumonia (n=1), COVID-19 (n=2), intestinal metastasis (n=1), pneumonia and septic shock (n=1), and pneumothorax and COVID-19 pneumonia (n=1)

Disclosures

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