Title: Long-Term Efficacy and Safety of Teriflunomide: An Analysis of Pooled Clinical Trials

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Short title for Annual Meeting Mobile Application: Long-term Efficacy and Safety of Teriflunomide

Background Teriflunomide is a once-daily oral immunomodulator approved for the treatment of relapsing forms of MS. Teriflunomide efficacy/safety has been demonstrated in Phase 2 (NCT01487096) and Phase 3 (TEMSO [NCT00134563;
Objective To report long-term efficacy and safety data from a pooled analysis of the Phase 2 and Phase 3 TEMSO, TOWER, TOPIC, and TENERE core and extension studies.

Methods In the Phase 2, TEMSO, TOWER, and TOPIC studies, patients were randomized 1:1:1 to placebo or teriflunomide 7 mg or 14 mg. In TENERE, patients were randomized 1:1:1 to subcutaneous interferon beta-1a 44 µg (IFN) or teriflunomide 7 mg or 14 mg. In the extensions, teriflunomide-treated patients either continued on their original dose of teriflunomide (Phase 2, TEMSO, TOPIC) or received teriflunomide 14 mg regardless of original dose (TOWER, TENERE), while placebo- or IFN-treated patients were reassigned 1:1 to teriflunomide 7 mg or 14 mg (Phase 2, TEMSO) or received teriflunomide 14 mg (TOWER, TENERE). Efficacy data (annualized relapse rates [ARR]) were pooled from the Phase 2, TEMSO, TOWER, and TENERE core and extension studies (teriflunomide and placebo groups only). Safety data (adverse events [AE] rates) also included data from TOPIC. Extension data will be available for presentation.

Results There were 812 and 896 patients in the pooled placebo and teriflunomide 14 mg intention-to-treat groups, respectively. Adjusted ARRs (95% CI) were significantly lower among patients receiving teriflunomide 14 mg (0.38 [0.33, 0.43]) versus placebo (0.59 [0.52, 0.67]; P < 0.0001). In the placebo and teriflunomide 14 mg groups, 86.4% and 89.7%, respectively, reported AEs; 12.4% and 12.8%, respectively, reported serious AEs; and 6.9% and 13.1%, respectively, discontinued treatment due to AEs.

Conclusions ARRs were significantly lower among patients receiving teriflunomide 14 mg vs placebo. No new safety signals were reported.

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