Suggested title:

Immune cell profiles and clinical and safety outcomes with fingolimod in the 12 month FLUENT study of patients with relapsing multiple sclerosis

Authors

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Affiliations

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Abstract

Background: FLUENT investigated immune cell subset changes in the innate and adaptive immune systems during fingolimod therapy, and their associations with efficacy and safety outcomes.

Objectives: To report changes in immune cell profile, efficacy and safety of fingolimod 0.5 mg/day in adults with relapsing multiple sclerosis (RMS).

Methods: In FLUENT (NCT03257358), a prospective, 12 month, phase 4, multicenter, nonrandomized, open-label study, patients were stratified as fingolimod naive (Cohort 1) or previously treated with fingolimod 0.5 mg/day continuously for ≥2 years (Cohort 2). Primary outcome was change from Baseline to Month 12 in immune cell subsets. Secondary outcomes included Patient Determined Disease Steps (PDDS), anti-John Cunningham virus (anti-JCV) antibody status, serum neurofilament light chain (NfL) concentration, and adverse events (AEs) incidence. Data were analyzed from all patients completing Month 12 follow-up.

Results: 165 patients enrolled in Cohort 1; 217 in Cohort 2. Proportionally more patients in Cohort 1 than Cohort 2 relapsed in the year before baseline. At Baseline, patients in Cohort 1 had proportionally more naive and central memory CD4+ and CD8+ T cells and memory B cells, and proportionally fewer effector memory CD4+ and CD8+ T cells and regulatory B cells, than those in Cohort 2. At Month 12, between-cohort differences in the proportions of these lymphocyte types/subtypes were much reduced or negligible. Levels were essentially unchanged in Cohort 2, indicating reductions in naive T cells and increases in effector memory T cells and regulatory B cells in Cohort 1. Mean baseline PDDS scores were low (Cohort 1, 1.7; Cohort 2, 1.8), and changed little by Month 12. Median change from Baseline in anti-JCV antibody index was small in both cohorts. Proportions of patients with positive JCV serology remained stable at Month 12 (61% and 67% in Cohorts 1 and 2 vs 57% and 65% at Baseline). Mean serum NfL level was higher in Cohort 1 than Cohort 2 at Baseline (12.2 vs 9.6 pg/mL); levels were similar at Month 12 (8.7 vs 9.8 pg/mL), having reduced substantially in Cohort 1. Proportionally more patients in Cohort 1 than in Cohort 2 had treatment-emergent AEs (54.6% vs 44.2%), and discontinued study treatment (12.3% vs 5.5%); 5.5% of patients in each cohort reported serious AEs.

Conclusions: These data expand our knowledge of changes in immune cell profiles over time in patients with RMS treated with fingolimod in the short or long term.

Title character count: 144 / **150** (including spaces)

Main text character count: 2,496 / **2,500** (including spaces)

Supported by: Novartis Pharmaceuticals Corporation

Disclosure statement

Yang Mao-Draayer has received consulting and/or speaker fees from Acorda, Biogen, Bayer Pharmaceuticals, Celgene, Chugai, EMD Serono, Genentech, Novartis, Sanofi Genzyme and Teva, and research support from Chugai, NIH NINDS, NIAID Autoimmune Center of Excellence, Novartis and Sanofi Genzyme.

Jeffrey A Cohen has received personal compensation for consulting from Adamas, Atara, Bristol-Myers Squibb, Convelo, MedDay, and Mylan; and serving as an Editor of *Multiple Sclerosis Journal.*

Amit Bar-Or has participated as a speaker in meetings sponsored by, and received consulting fees and/or grant support from, Actelion, Atara Biotherapeutics, Biogen Idec,

Celgene/Receptos, Genentech/Roche, Mapi, MedImmune, Merck/EMD Serono, Novartis and Sanofi Genzyme.

May H Han has served on advisory boards for Arena Pharma Inc., Novartis and Roche (Genentech).

Barry Singer has received research grant support from AbbVie, Alkermes, Biogen, MedImmune, Novartis, Roche and Sanofi Genzyme, and consulting and/or speaking fees from AbbVie, Acorda, Alexion, Biogen, Celgene, EMD Serono, Genentech, Novartis, Sanofi Genzyme, Teva and TG Therapeutics.

Scott Kolodny, **Chelsea Elam** and **Xiangyi Meng** are employees of Novartis Pharmaceuticals Corporation.

Marina Ziehn is an employee of Novartis Pharma AG.

Bruce AC Cree has received personal compensation for consulting from AbbVie, Akili, Biogen, EMD Serono, GeNeuro and Novartis.

Preferred format: Oral presentation

Suggested topic: Clinical Trials

Available topics:

- Biomarkers and Bioinformatics
- Biosensors
- Biostatistical Methods
- Clinical Outcome Measures
- Clinical Trials
- Comorbidities
- Diagnostic Criteria and Differential Diagnosis
- Disease Modifying Therapies – Mechanism of Action
- Disease Modifying Therapies – Risk Management
- Epidemiology
- Experimental Models
- Gender Differences, Hormones and Sex Chromosomes
- Genetics and Epigenetics
- Imaging
- Internet and Social Media
- Machine Learning/Network Science
- Microbiome
- Metabolomics
- Neuromyelitis Optica and Anti-MOG Disease
- Neuro-Ophthalmology
- Neuroprotection, Regeneration and/or Remyelination
- Neuropsychology and Cognition
- Observational Studies
- Pathogenesis – Immunology
- Pathogenesis – Neurodegeneration
- Pathogenesis – Role of Glia
- Pathogenesis – the Blood-Brain Barrier
- Pediatric MS
- Prognostic Factors
- Patient-Reported Outcomes and Quality of Life
- Rehabilitation and Comprehensive Care
- Reproductive Aspects and Pregnancy
- Symptom Management