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Presentation preference: Oral or Poster

Title: CLARITY: An analysis of severity and frequency of relapses in patients with relapsing remitting multiple sclerosis (RRMS) treated with Cladribine Tablets 3.5 mg/kg (CT3.5) or placebo (PBO)

Short Title: Severity and frequency of relapses in CLARITY

Main author: S. Schippling[1]

Additional authors: M.P. Sormani[2], N. De Stefano[3], G. Giovannoni[4], A. Galazka[5], B. Keller[6], N.Alexandri[6]

[1]University Hospital Zürich, Rämistrasse, Zürich, Switzerland; [2]Department of Health Sciences, University of Genoa and Ospedale Policlinico san Martino IRCCS, Genoa, Italy; [3]Department of Neurological and Behavioural Sciences, University of Siena, Siena, Italy; [4]Queen Mary University of London, Blizard Institute, Barts and The London School of Medicine and Dentistry, London, United Kingdom; [5]Merck, Aubonne, Switzerland, a division of Merck KGaA, Darmstadt, Germany; [6]Merck KGaA, Darmstadt, Germany

Introduction: In CLARITY, treatment with CT3.5 showed efficacy vs PBO over 2years in patients with RRMS.

Objectives: CT3.5 effect on relapse rate and severity (using hospitalisation and steroid use as proxy indicators), and effect of adjusting for covariates was evaluated *post hoc.*

Methods: Qualifying relapse was defined by Kurtzke Functional Score status and specified clinical parameters. Qualifying relapse relative risk (RR) was estimated for CT3.5(N=433) and PBO(N=437) treated patients at Week-24, 48 and 96 by Poisson regression with treatment and various alternating covariates (gender, age, age at time of diagnosis, disease duration, pre-treatment) as main effects and by adding treatment by covariate interaction effects. All relapses were also analysed; analyses were *post hoc* and exploratory.

Results: Qualifying relapse RR for CT3.5 vs PBO was lower at Weeks-24, 48 (both p<0.001) and Week-96 (RR=0.42[95% confidence interval(CI) 0.34, 0.53];p<0.0001). All relapse RR (Week-96;CT3.5 vs PBO) was 0.43[95%CI 0.37, 0.51];p<0.0001. Annualised relapse rates for PBO and CT3.5 were 0.35 and 0.15(qualifying), and 0.63 and 0.27(all relapses), respectively. CT3.5 vs PBO reduced risk of qualifying relapses requiring hospitalisation at all timepoints (Week-96 RR=0.41[95%CI 0.29, 0.57];p<0.0001) and to steroid treatment (Week-96 RR=0.41[95%CI 0.32, 0.53];p<0.0001). Risk reduction of all relapses for hospitalisation and steroid use were 63% and 62%, respectively (Week-96). Age at time of diagnosis (p=0.0011) and prior use of disease modifying drugs (p=0.0002)

significantly effected qualifying relapse rate by Week-96 when added separately to the model. Gender had a marginal effect (p=0.0783); disease duration had no effect (p=0.8770). No covariate influenced qualifying relapse RR for CT3.5 vs PBO (Week-96).

Conclusions: Qualifying relapse (and all relapse) RR was consistently and significantly lower with CT3.5 vs PBO for every timepoint, including relapses requiring hospitalisation or steroid treatment. After adjusting for covariates, treatment benefit of CT3.5 vs PBO was not diminished by any model adjustments.

The CLARITY study: NCT00213135

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Author disclosures

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AG is an employee of Merck, Aubonne, Switzerland, a division of Merck KGaA, Darmstadt, Germany.

BK and **NA** are employees of Merck KGaA, Darmstadt, Germany.