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Real-World Outcomes of People With Relapsing Multiple Sclerosis Switching From Natalizumab or Ocrelizumab to Cladribine Tablets

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CONCLUSION

- **This real-world study presents data through 3 years after initiating cladribine tablets for relapsing multiple sclerosis (RMS) in patients who switched from natalizumab or ocrelizumab**
- **Switching to cladribine tablets from high efficacy (HE) infusions is effective as measured by clinical and radiological outcomes out to 3 years after cladribine tablet initiation**

INTRODUCTION

- Multiple sclerosis (MS) is a chronic neurodegenerative disorder of the central nervous system characterized by inflammation and demyelination[1,2]
- Cladribine (3.5 mg/kg cumulative dose over 2 years) tablets are indicated for the treatment of RMS in adults in the United States[3]
- Real-world evidence that cladribine tablets are effective in patients who are switching from other HE disease-modifying therapies (DMTs), such as natalizumab or ocrelizumab, is important for patients and clinicians who are considering a switch
- Here, we present data from a subgroup[a] of patients with RMS who were previously treated with natalizumab or ocrelizumab prior to initializing cladribine tablets

[a]Data from the whole cohort of 164 patients was presented at ECTRIMS 2023[4]

OBJECTIVE

- **To describe the clinical effectiveness of switching from natalizumab or ocrelizumab to cladribine tablets in a US real-world cohort of people with RMS**

METHODS

Study Design

- A single-center, longitudinal, retrospective, observational cohort study of de-identified medical records of patients with RMS was carried out at the University of Texas Southwestern Medical Center in Dallas, TX, USA

Eligibility Criteria

- Patients aged ≥18 years with RMS treated with ≥1 course of cladribine tablets from April 2019 to March 2023 were included in this analysis
- Patients with primary progressive MS or clinically isolated syndrome were excluded from the study

Study Outcomes

- Annualized relapse rates (ARRs) 1 year prior to baseline and up to 3 years after initiation of cladribine tablets
- Magnetic resonance imaging (MRI) activity 1 year prior to baseline and up to 3 years after initiation of cladribine tablets
- Hospitalizations and urgent care/emergency department (ED) visits due to MS relapse/symptoms 1 year prior to and up to 3 years after initiation of cladribine tablets

Statistical Analysis

- Descriptive statistics and frequency counts were used in this subpopulation for patient demographics and for number of prior DMTs used

RESULTS

Baseline Demographics and Disease Characteristics

- The present analyses include 69 patients treated with ≥1 course of cladribine tablets who were previously treated with either natalizumab or ocrelizumab (**Table 1**). The median follow-up time for all patients was 2.1 years
  - Mean duration of the most recent prior DMT was 3.1 (SD: 3.4) years
  - Median time between cladribine courses was 1.1 (range: 0.3-2.0) years

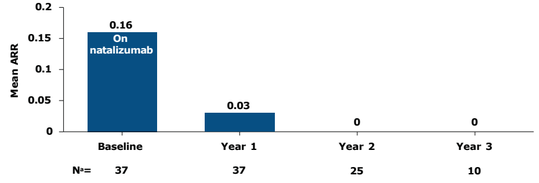
Table 1. Baseline Demographics and Disease Characteristics of Patients With Prior Natalizumab and Ocrelizumab Treatment

Characteristics	Natalizumab	Ocrelizumab
n	37	32
Mean age, years (SD) [range]	45.0 (9.3) [21-65]	46.1 (10.3) [28-62]
Sex at birth, n (%)		
Female	28 (75.7)	20 (62.5)
Male	9 (24.3)	12 (37.5)
Race, n (%)		
White	27 (73.0)	27 (84.4)
Black/African American	9 (24.3)	4 (12.5)
Asian	1 (2.7)	1 (3.1)
Ethnicity, n (%)		
Hispanic	4 (10.8)	4 (12.5)
Non-Hispanic	33 (89.2)	28 (87.5)
Mean disease duration, years (SD) [range]	12.2 (6.3) [4-27]	12.9 (7.3) [4-35]
Median prior treatments, n (SD) [range]	2.0 (1.3) [1-6]	3.5 (1.9) [2-9]
Median time to switch, days	64	155

Annualized Relapse Rates

- For prior natalizumab patients, the mean (SD) ARR at baseline was 0.16 (0.44; n=5 patients with relapse), which decreased to 0.03 (0.16; n=1 patient with relapse) in Year 1 after initiating cladribine tablets (**Figure 1**)

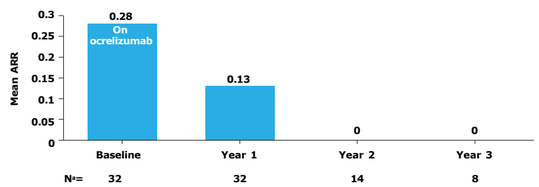
Figure 1. ARRs for Prior Natalizumab Patients Through 3 Years After Initiating Cladribine Tablets



[a]N: Total number of patients. ARRs, annualized relapse rates.

- For prior ocrelizumab patients, the mean (SD) ARR at baseline was 0.28 (1.11; n=3 patients with relapse), which decreased to 0.13 (0.55; n=2 patients with relapse) in Year 1 after initiating cladribine tablets (**Figure 2**)

Figure 2. ARRs for Prior Ocrelizumab Patients Through 3 Years After Initiating Cladribine Tablets



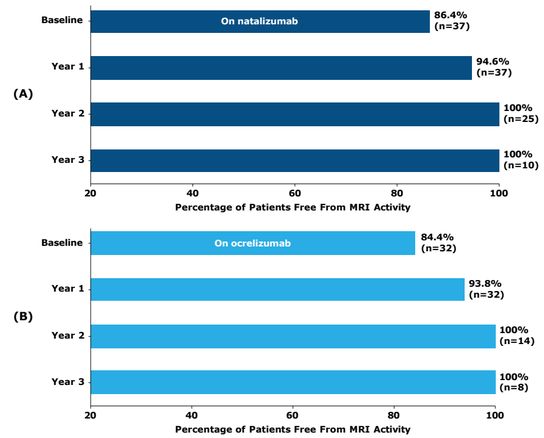
[a]N: Total number of patients. ARRs, annualized relapse rates.

- No relapses were reported in either of the groups during Years 2 or 3 after initiating cladribine tablets

MRI Activity

- Percentage of patients free from MRI activity who switched from natalizumab or ocrelizumab to cladribine tablets are reported in **Figure 3**

Figure 3. Percentage of Patients Free From MRI Activity[a] Who Switched From Natalizumab (A), and Ocrelizumab (B) to Cladribine Tablets



[a]Any T1 gadolinium-enhancing lesion or any new or enlarging T2 lesions. T2 lesions were identified by comparing to the prior scan. MRI, magnetic resonance imaging.

Hospitalizations and Urgent Care/ED Visits

- Hospitalizations and urgent care/ED visits due to MS 1 year prior to and 1 year after initiating cladribine tablets in prior natalizumab and ocrelizumab patients is presented in **Table 2**
- In prior ocrelizumab patients, respiratory problems were the most reported reasons for hospitalizations and urgent care/ED visits 1 year prior to and 1 year after cladribine treatment
- In prior natalizumab patients, respiratory problems accounted for an urgent care visit 1 year prior to cladribine treatment only
- No hospitalizations or urgent care/ED visits were reported in Years 2 or 3 after initiating cladribine tablets from either natalizumab or ocrelizumab

Table 2. Hospitalizations and Urgent Care/ED Visits Due to MS 1 Year Prior to and 1 Year After Initiating Cladribine Tablets in Prior Natalizumab and Ocrelizumab Patients

	1 Year Prior to Initiating Cladribine Tablets		1 Year After Initiating Cladribine Tablets	
	Natalizumab (n=37)	Ocrelizumab (n=32)	Natalizumab (n=37)	Ocrelizumab (n=32)
Hospitalizations due to MS relapse/symptoms, n	0	3	1	2
Mean (SD)	0	0.22 (0.89)	0.03 (0.16)	0.06 (0.24)
Urgent care/ED visits due to MS relapse/symptoms, n	1	1	0	0
Mean (SD)	0.03 (0.16)	0.03 (0.17)	0	0

References: 1. Giovannoni G, Mathews J. *Neurol Ther*. 2022;11(2):571-595. **2.** Ramo-Tello C, et al. *J Pers Med*. 2021;12(1):6. **3.** MAVENCLAD (cladribine) tablets. Package insert. EMD Serono, Inc.; 2022. **4.** Okuda DT. Real-world outcomes with cladribine tablets in people with relapsing multiple sclerosis. Presented at the 9th Joint ECTRIMS-ACTRIMS Meeting; 11–13 October 2023; Milan, Italy.

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