For reactive Medical use only.

Switching Patients with Multiple Sclerosis from Anti-CD20 or S1P Receptor Modulators to Cladribine Tablets in the United States: A Real-World Age-Based Analysis

Christen Kutz, *Julie Aldridge, Emily Evans*

This work was sponsored by EMD Serono Research & Development Institute, Inc., Billerica, MA, USA, an affiliate of Merck KGaA (CrossRef Funder ID: 10.13039/100004755).
Authors in italics are employees of Merck or its affiliates. Please scan the QR code below for full affiliations.

SCAN FOR POSTER PDF

RESEARCH IN CONTEXT

1. **These real-world data support cladribine tablets (CladT) as a preferred disease-modifying therapy (DMT) for patients who require effective multiple sclerosis (MS) therapy, but in whom anti-CD20 or sphingosine-1-phosphate receptor (S1PR) modulator therapies are no longer suitable.**
2. **As people with MS (PwMS) get older, avoidance of long-term immunosuppression and risk of infection become more important aspects of therapy; switching to CladT may provide these benefits as a part of continued effective MS treatment.**

OBJECTIVE

To describe the rationale when switching PwMS aged <50 years and ≥50 years from an anti-CD20 therapy or a S1PR modulator to CladT, and to assess safety in these patients before and after switching to CladT

INTRODUCTION

Ageing in PwMS presents unique challenges, mainly due to overlapping symptoms between age- and MS-related comorbidities coupled with immunosenescence[1,2]

CladT is the only multiple sclerosis therapy that included PwMS up to age 65 years (y) in its pivotal study (CLARITY) and may be considered a viable treatment option for PwMS aged ≥50 years[3]

METHODS

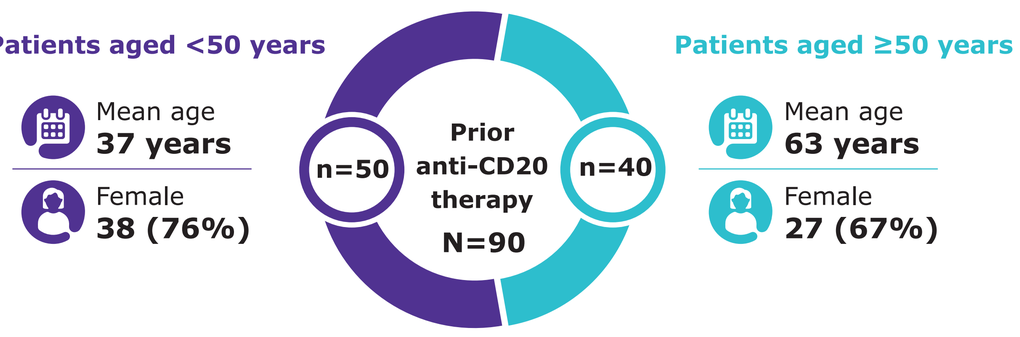
- Neurology healthcare professionals who switched PwMS from an anti-CD20 therapy or a S1PR modulator to CladT treatment completed a de-identified electronic survey
- Data are presented descriptively by age group (<50y/≥50y) with 90 patients per treatment group (anti-CD20 therapy/S1PR modulator)

Key endpoints

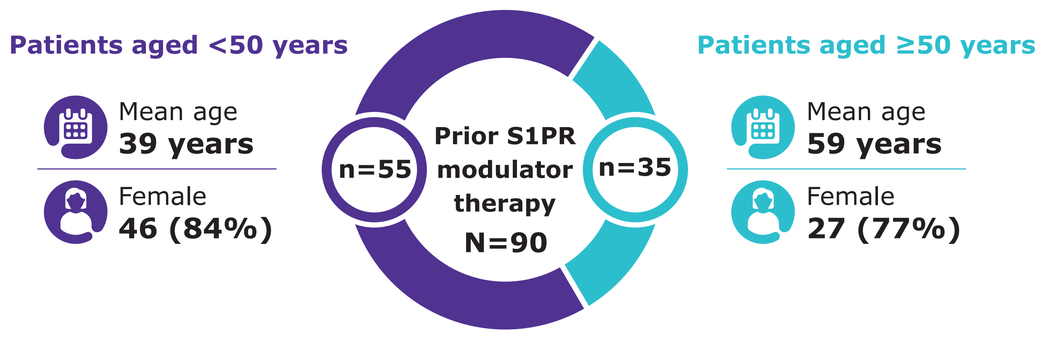
- **Reasons for discontinuation of anti-CD20s and S1PR modulators**
- **Reasons for switching from anti-CD20s or S1PR modulators to CladT**
- **Safety: Adverse events (AEs) before and after switching to CladT**

RESULTS

Baseline characteristics and most recent prior DMTs



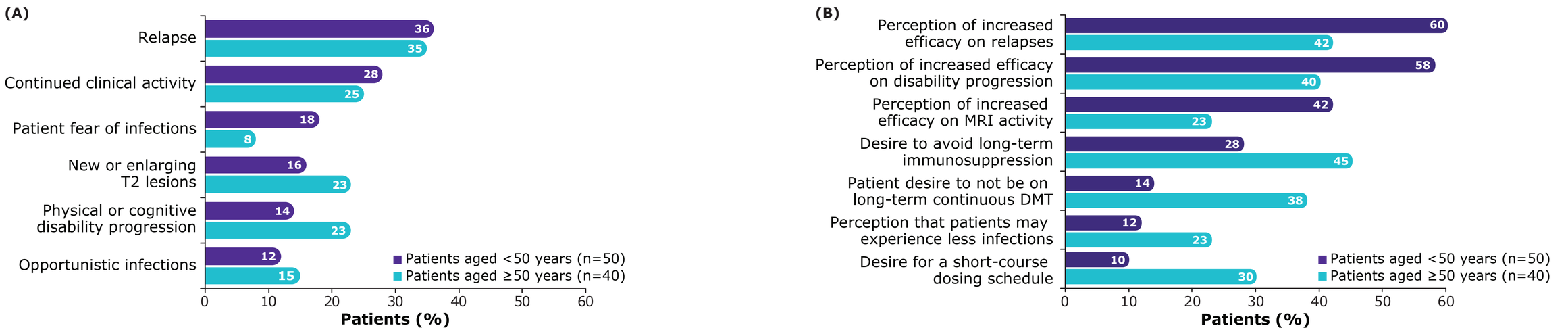
- Ocrelizumab was the most common recent prior anti-CD20 therapy



- Fingolimod was the most common recent prior S1PR modulator therapy

(Please refer **Supplementary Tables 1 and 2** for more details)

Most common reasons for (A) anti-CD20 therapy discontinuation and (B) switching patients from anti-CD20 therapy to CladT[a]



DMT, disease-modifying therapy; MRI, magnetic resonance imaging

Other reasons for discontinuation (<50y/≥50y) were the desire for different frequency or mode of administration (10%/13%), infusion reactions (8%/5%), gadolinium-enhancing lesions (6%/8%), recurrent infections (4%/8%), and severe infections (4%/5%)

The desire to avoid long-term immunosuppression and the perception of increased efficacy (relapse, disability and magnetic resonance imaging activity) were the key factors in choosing CladT after anti-CD20 therapy in patients aged ≥50 years and <50 years, respectively

[a]There could be more than one reason for discontinuation of anti-CD20 therapy or for switching patients from anti-CD20 therapy to CladT

Most common reasons for S1PR modulator therapy discontinuation and switching patients from S1PR modulator therapy to CladT

- The most common reasons for discontinuing S1PR modulators in patients (<50y/≥50y) were relapses (36%/26%) and physical or cognitive disability progression (24%/14%). A higher proportion of patients aged ≥50 years discontinued due to recurrent infections (29%/46%)
- The most common reasons for switching patients from S1PR modulators to CladT were similar across both subgroups: the perception of fewer infections (51%/54%), increased efficacy on relapses (27%/29%) and disability (20%/14%), less lymphopenia (24%/20%), and the short-course dosing schedule (13%/11%)

(Please refer **Supplementary Figure 1** for more details)

Safety overview: Most common AEs

On anti-CD20 therapy

	<50y (n=50)	≥50y (n=40)
None	52%	40%
Opportunistic infections	18%	15%
Infusion reactions	16%	20%
Reduction in immunoglobulins	16%	38%

Post switch to CladT

	<50y (n=50)	≥50y (n=40)
None	68%	50%
Headache	20%	25%
Nausea	10%	20%
Backpain	6%	10%

On S1PR modulator therapy

	<50y (n=55)	≥50y (n=35)
None	29%	23%
Frequent infections	22%	40%
Cough and/or dyspnea	20%	14%
Opportunistic infections	9%	6%
Hypersensitivity reaction	9%	11%

Post switch to CladT

	<50y (n=55)	≥50y (n=35)
None	85%	74%
Headache	7%	29%
Nausea	4%	6%

- Common AEs in both treatment groups before switching to CladT included recurrent/opportunistic infections, and in the anti-CD20 group, particularly in patients aged ≥50 years, reductions in immunoglobulin
- No cases of infections or immunoglobulin reductions were reported in patients after switching to CladT

CONCLUSIONS

- **The reasons to switch from anti-CD20 therapies and S1PR modulators to CladT were largely similar and driven by the perception of increased efficacy, fewer infections, and a desire for short-course dosing**
- **Particularly in patients aged ≥50 years, impacts on the immune system were key factors to discontinue current therapy and switch to CladT**

SCAN FOR AFFILIATIONS, DISCLOSURES AND SUPPLEMENTARY MATERIALS

References: 1. Fernández Ó et al. *Front Immunol.* 2024;15:1379538; 2. Goyne CE et al. *Curr Neurol Neurosci Rep.* 2024;24(4):83–93; 3. Giovannoni G et al. *N Engl J Med* 2010;362:416–426.

Presented at ECTRIMS 2024 | 18 – 20 September | Copenhagen, Denmark

Supplementary Materials

Author Affiliations

Christen Kutz[1], Julie Aldridge[2], Emily Evans[3]

[1]Rocky Mountain Research and Consulting, Colorado Springs, CO, USA, United States; [2]EMD Serono Research & Development Institute, Inc., Billerica, MA, USA, an affiliate of Merck KGaA; [3]EMD Serono, Inc., Rockland, MA, USA, an affiliate of Merck KGaA.

Author Disclosures

CK has received consulting fees from Alexion, BMS, Biogen, EMD Serono Research & Development Institute, Inc., Billerica, MA, USA, an affiliate of Merck KGaA, Genzyme, and Teva.

JA is an employee of EMD Serono Research & Development Institute, Inc., Billerica, MA, USA, an affiliate of Merck KGaA.

EE is an employee of EMD Serono, Inc., Rockland, MA, USA, an affiliate of Merck KGaA.

Acknowledgements

This work was sponsored by EMD Serono Research & Development Institute, Inc., Billerica, MA, USA, an affiliate of Merck KGaA (CrossRef Funder ID: 10.13039/100004755). Medical writing support was provided by Ganesh Pedgaonkar of Merck Specialties Pvt. Ltd., Bengaluru, India, an affiliate of Merck KGaA.

Supplementary Materials

Supplementary Table 1: Demographics and baseline characteristics

Characteristics	Switching from anti-CD20 therapy to CladT		Switching from S1PR modulator to CladT	
	Patients aged <50 years n=50	Patients aged ≥50 years n=40	Patients aged <50 years n=55	Patients aged ≥50 years n=35[a]
Mean age, years (range)	37 (18–49)	63 (50–78)	39 (23–49)	59 (50–78)
Female, n (%)	38 (76)	27 (67)	46 (84)	27 (77)
Race/ethnicity, n (%)				
White	35 (70)	28 (70)	48 (87)	29 (82)
Black/African American	7 (14)	5 (13)	6 (11)	5 (14)
Hispanic	5 (10)	3 (7)	1 (2)	0
Others	3 (6)	4 (10)	-	-
Type of MS, n (%)				
CIS	1 (2)	1 (2)	2 (4)	3 (9)
RRMS	39 (78)	26 (65)	48 (87)	24 (69)
SPMS	10 (20)	13 (33)	5 (9)	8 (23)

[a]For 1 patient in the ≥50 years subgroup (switching from S1PR modulator to CladT), the race/ethnicity was mentioned as "multiracial/multiethnic", and thus not shown in the table.
CD, cluster of differentiation; CIS, clinically isolated syndrome; CladT, cladribine tablets; MS, multiple sclerosis; RRMS, relapsing-remitting multiple sclerosis; S1P, sphingosine 1-phosphate; SPMS, secondary progressive multiple sclerosis.

Supplementary Table 2: Most recent (A) anti-CD20 therapies and (B) S1PR modulator therapies used prior to initiating CladT

(A)

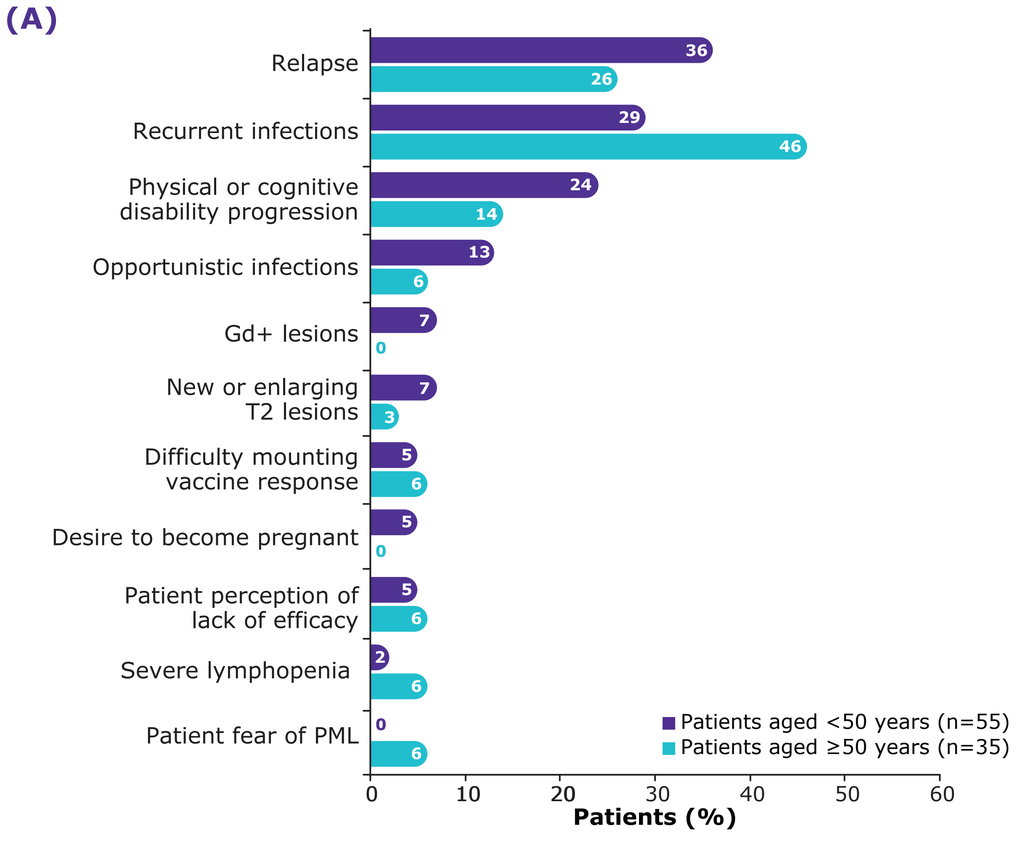
Prior anti-CD20 therapy	Patients aged <50 years n=50 n (%)	Patients aged ≥50 years n=40 n (%)
Ocrelizumab	32 (64)	26 (65)
Rituximab	12 (24)	11 (27)
Ofatumumab	5 (10)	3 (8)
Ublituximab	1 (2)	0

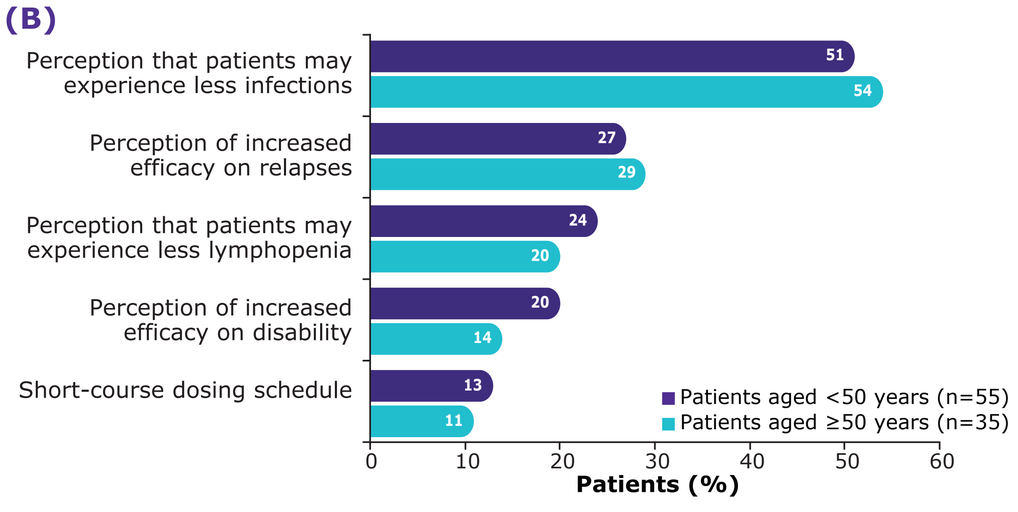
(B)

Prior S1PR modulator therapy	Patients aged <50 years n=55[a] n (%)	Patients aged ≥50 years n=35 n (%)
Fingolimod 0.5 mg daily	45 (82)	27 (77)
Ozanimod 0.92 mg daily	4 (7)	3 (9)
Siponimod 2 mg daily	3 (5)	3 (9)
Ponesimod 20 mg daily	2 (4)	1 (3)
Siponimod 1 mg daily	0	1 (3)

[a]For 1 patient in the <50 years subgroup (S1PR modulator therapy), prior therapy was mentioned as "alternative treatment regimen", and thus not shown in the table.
CD, cluster of differentiation; CladT, cladribine tablets; S1PR, sphingosine 1-phosphate receptor.

Supplementary Figure 1: Most common reasons for (A) S1PR modulator therapy discontinuation and (B) switching patients from S1PR modulator therapy to CladT[a]





[a]There could be more than one reason for discontinuation of S1PR modulator therapy or for switching patients from S1PR modulator therapy to CladT
CladT, cladribine tablets; DMT, disease-modifying therapy; Gd+; gadolinium enhancing; PML, progressive multifocal leukoencephalopathy; S1PR, sphingosine 1-phosphate receptor.