Disease-Modifying Treatment Patterns of Patients With Multiple Sclerosis and Newly Treated With Cladribine Tablets or Fingolimod: An Interim Analysis of the CLARION Study

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CONCLUSIONS

In this interim analysis of the real-world CLARION study, about one third and one fifth of patients initiated cladribine tablets and fingolimod as first-line treatment, respectively.

Dimethyl fumarate and interferon beta-1a were the most commonly used DMT prior to initiation of cladribine tablets and fingolimod cohort, respectively. Teriflunomide was the most common last DMT prior to initiation of cladribine tablets or fingolimod.

Within the available study follow-up, fingolimod patients switched to another DMT more often than cladribine tablets patients.

INTRODUCTION

- Patients with multiple sclerosis (MS) may require life-long therapy, and some new disease-modifying therapies (DMTs) have a prolonged duration of effect; as such, it is important to understand their long-term safety in routine clinical practice.[1–3]
- **CLARION** is a long-term study (EUPAS24484) designed to characterize the real-world safety profile of cladribine tablets and describe the sequence of DMT use in MS patients.

CLARION

METHODS

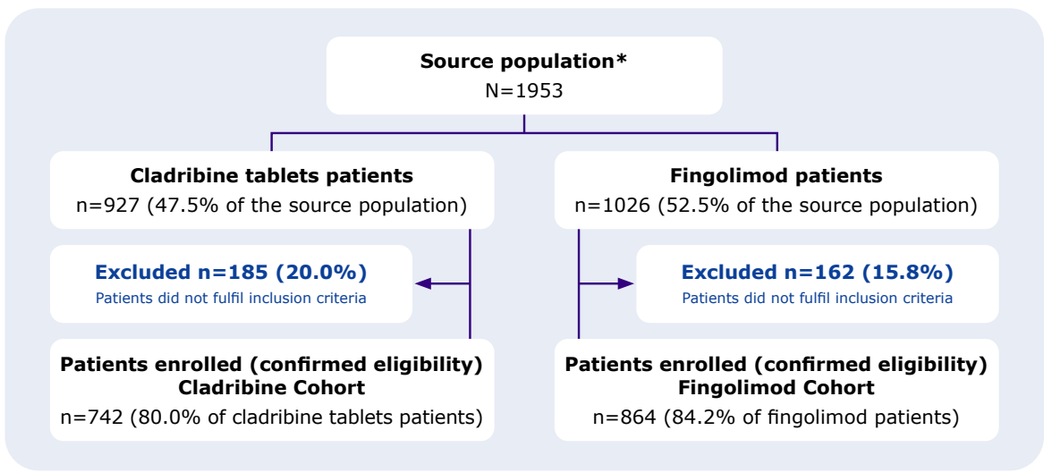
- MS patients newly initiating cladribine tablets or fingolimod after the country-specific launch date for cladribine tablets and without prior fingolimod use were identified (interim analysis cut-off date, 1 April 2020).
- Prior and subsequent DMT use was described by cohort and type. Danish MS Registry (DMSR) is reported separately due to small observations handling with no intention to directly compare it to "all registries".
- Results are presented for DMTs with at least 10% of the DMT use in cladribine or fingolimod cohort (all MS registries except DMSR).
- Data are available from 7 registries:
  - Danish MS Registry; Multiple Sclerosis database [MSBase]; Multiple Sclerosis Management System 3D and NeuroTransData database; Norwegian Multiple Sclerosis Register; Finnish MS Registry; Swiss Multiple Sclerosis Cohort; and Swedish Multiple Sclerosis Register.
  - In Denmark, number and percentages were sometimes provided as ranges due to data protection restrictions of reporting small observations. Because of this, Danish results are presented as a stand-alone registry.

OBJECTIVES

To describe prior and subsequent DMT use in MS patients newly initiating cladribine tablets or fingolimod for MS and included in the first interim analysis of CLARION.

RESULTS

Figure 1. Patient Disposition



*Source population: Patients with fingolimod or cladribine tablets between cladribine tablets launch date (country-specific) and date of data cut-off (1 April 2020).

- In DMSR, 525 patients (136 of 185 cladribine tablets users and 389 of 443 fingolimod users) were included. The main reason for non-inclusion was prior use of fingolimod (49 cladribine tablets users and 54 fingolimod users).

Table 1. Data Sources & Follow-up

	Cladribine cohort N=742	Fingolimod cohort N=864
Data source, n (%)		
Danish Multiple Sclerosis Registry	136 (18.3)	389 (45.0)
MSBase	132 (17.8)	49 (5.7)
MSDS3D (and NTD)	130 (17.5)	104 (12.0)
Norwegian MS Registry	183 (24.7)	136 (15.7)
Finnish MS Registry	73 (9.8)	123 (14.2)
Swedish MS Registry	80 (10.8)	50 (5.8)
Swiss MS Cohort	8 (1.1)	13 (1.5)
Mean (SD) duration of follow-up at the time of data cut-off (years)	**0.9 (0.5)**	**1.4 (0.7)**

MS, multiple sclerosis; **MSBase**, Multiple Sclerosis database; **MSDS3D**, Multiple Sclerosis Management System 3D; **N**, total number of patients; **n**, number of occurrences; **NTD**, NeuroTransData database; **SD**, standard deviation

Table 2. Any Prior DMT for MS before Initiation of Study Treatment

Number (%) of patients with prior DMT use	All MS Registries except DMSR		DMSR	
	Cladribine cohort N=606	Fingolimod cohort N=475	Cladribine cohort N=136	Fingolimod cohort N=389
Any prior DMT use	**494 (63.2)**	**345 (72.6)**	**111 (81.6)**	**334 (85.9)**
Dimethyl fumarate*	135 (35.2)	116 (33.6)	36 (32.4)	56 (16.8)
Interferon beta-1a*	130 (33.9)	152 (44.1)	50 (45.0)	168 (50.3)
Glatiramer acetate*	128 (33.4)	112 (32.5)	32 (28.8)	49 (14.7)
Teriflunomide*	110 (28.7)	106 (30.7)	47 (42.3)	172 (51.5)
Natalizumab*	79 (20.6)	48 (13.9)	47 (42.3)	94 (28.1)
Interferon beta-1b*	50 (13.1)	54 (15.7)	5 (4.5)	16 (4.8)

*Among patients with prior DMT use. **DMSR**, Danish MS Registry; **DMT**, disease-modifying therapy; **MS**, multiple sclerosis; **N**, total number of patients; **n**, number of occurrences

Table 3. Last Prior DMT for MS before Initiation of Study Treatment

Number (%) of patients with prior DMT use	All MS Registries except DMSR		DMSR	
	Cladribine cohort N=606	Fingolimod cohort N=475	Cladribine cohort N=136	Fingolimod cohort N=389
Any last prior DMT use	**494 (63.2)**	**345 (72.6)**	**111 (81.6)**	**334 (85.9)**
Teriflunomide*	92 (24.0)	83 (24.1)	28 (25.2)	143 (42.8)
Dimethyl fumarate*	90 (23.5)	78 (22.6)	15 (13.5)	36 (10.8)
Glatiramer acetate*	64 (16.7)	51 (14.8)	13 (11.7)	17 (5.1)
Natalizumab*	52 (13.6)	40 (11.6)	39 (35.1)	88 (26.3)
Interferon beta-1a*	31 (8.1)	70 (20.3)	1 – 4 (0.9 – 3.6)†	44 (13.2)

*Among patients with prior DMT use. †Numbers and percentages were sometimes provided as ranges due to restrictions of reporting small observations in Danish MS Registry. **DMSR**, Danish MS Registry; **DMT**, disease-modifying therapy; **MS**, multiple sclerosis; **N**, total number of patients; **n**, number of occurrences

Table 4. Any Subsequent DMT after Initiation of Study Treatment

Number (%) of patients with subsequent DMT use	All MS Registries except DMSR		DMSR	
	Cladribine cohort N=606	Fingolimod cohort N=475	Cladribine cohort N=136	Fingolimod cohort N=389
Any subsequent DMT use	**15 (2.5)**	**96 (20.2)**	**1 – 4 (0.7 - 2.9)†**	**98 (25.2)**
Natalizumab*	7 (46.7)	11 (11.5)	1 – 4 (25.0 - 100.0)†	13 (13.3)
Rituximab*	5 (33.3)	34 (35.4)	0 (0.0 – 0.0)	2 – 8 (2.0% – 8.2%)†
Ocrelizumab*	2 (13.3)	15 (15.6)	0 (0.0 – 0.0)	54 (55.1)
Cladribine tablets*	0 (0.0)	18 (18.8)	0 (0.0 – 0.0)	6 – 9 (6.1% – 9.2%)†

*Among patients with subsequent DMT use. †Numbers and percentages were sometimes provided as ranges due to restrictions of reporting small observations in Danish MS Registry. **DMSR**, Danish MS Registry; **DMT**, disease-modifying therapy; **MS**, multiple sclerosis; **N**, total number of patients; **n**, number of occurrences

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