Effectiveness and Tolerability of additional cycle of Cladribine in patients with Multiple Sclerosis: A Preliminary Real-World Cohort Study

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Background

Cladribine (CLAD) is an immune reconstitution therapy approved for the treatment of Relapsing Remitting Multiple Sclerosis (RR-MS). The current approved regimen covers four years, with two treatment courses in the first two years, followed by two treatment-free years. However, some patients may experience persistent or recurrent disease activity beyond year 4 and could benefit from an additional treatment cycle. Real-world data on the safety and efficacy of such additional cycles are currently limited. This study aims to evaluate the clinical, radiological, and safety outcomes of an additional cycle of CLAD in a real-world cohort of RRMS patients.

Materials

In this prospective, single-centre, real word study we collected data from 12 RRMS patients who had completed the standard two-cycle CLAD regimen between January 2020 and April 2022 and who received a third cycle between April and July 2024.

Methods

Expanded Disability Status Scale (EDSS) scores, magnetic resonance imaging (MRI) and laboratory tests were assessed at baseline (prior to the additional cycle), and at 6 and 12 months post-treatment. Demographic and anthropometric data were recorded, and tolerability was monitored through
clinical visits and laboratory tests.

Results

Twelve RR-MS patients [F= 7 (58,3%) and M=5 (41,7%), mean age 35.67 ± 9.26 years, median EDSS score 2,0 (1,5-5,5)] were included. At the latest follow-up, 11 patients remained clinically and radiologically stable, with no relapses nor Confirmed Disability Progression (CDP), and no change in EDSS scores. One patient experienced a major relapse and switched to another treatment one year after the additional CLAD cycle. No serious adverse events (SAEs) were reported.

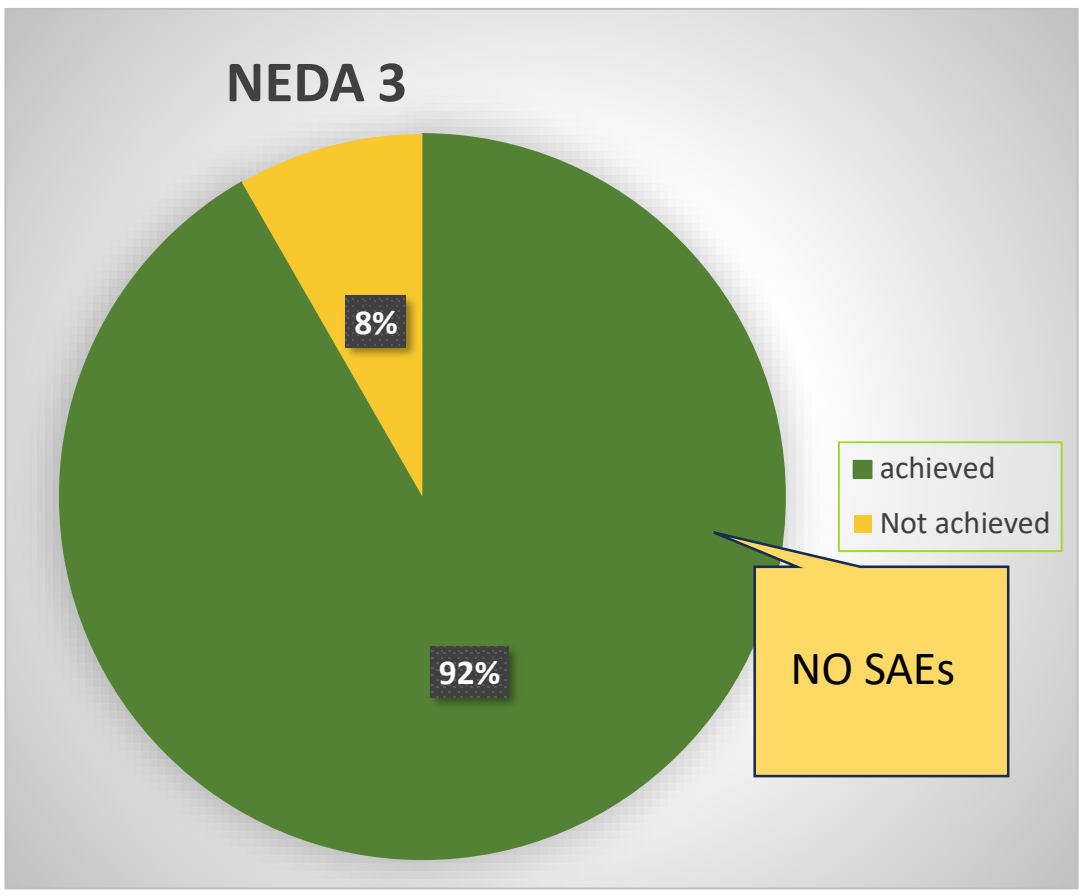

Figure 1. Achievement of NEDA3 in our cohort after additional cycle of CLAD.

Discussion

Our real-world findings suggest that an additional cycle of CLAD is associated with good short-term tolerability and sustained clinical stability. We propose that further CLAD courses may be appropriate for patients with minimal (no relapses, 1–2 new lesions) or moderate (1 relapse, 3–4 new lesions) disease activity. In contrast, patients with significant disease activity (≥1 relapse, ≥3 new lesions) or progression should be considered for a switch to a high-efficacy therapy (HET).

Conclusions:

The observed safety profile and stable disability outcomes support the potential value of extended Cladribine use in carefully selected RRMS patients. Larger, prospective studies with longer follow-up are needed to validate these preliminary results and better define the long-term role of additional CLAD dosing in MS management.

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