# CLICK-MS: Cladribine Tablets in Patients with Relapsing Multiple Sclerosis After Suboptimal Response to Prior Injectable Disease-Modifying Therapy (Interim Analysis 1)

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DMT22

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## CONCLUSIONS

**This 6-month interim analysis of the CLICK-MS study showed a 100% adherence rate for cladribine tablets in patients who completed the MS-TAQ questionnaire**

**In this population of US patients with RRMS or active SPMS, no new safety findings were reported**
- **Most TEAEs were mild/moderate and there were no cases of TEAEs leading to treatment discontinuation**
- **The most common TEAE was urinary tract infection**

**More results from CLICK-MS will be presented in time**

## INTRODUCTION

- Injectable DMTs (IFN-beta and glatiramer acetate) are common treatment options for RMS
  - However, some patients do not respond well to therapy
    - A NARCOMS database analysis found that **27–46% of patients discontinue injectable DMTs due to lack of efficacy[1]**
- **Cladribine tablets 3.5 mg/kg** (cumulative dose over 2 years, administered as one treatment course of 1.75 mg/kg per year) are **indicated for treating RMS, including RRMS and active SPMS[2]**
- There is limited real-world data on the effectiveness, safety, and PROs of cladribine tablets 3.5 mg/kg in patients who switched from an injectable MS DMT
- **CLICK-MS (NCT03933215)** is an ongoing US-based, single arm, observational, 54-month, Phase 4 study examining the **effectiveness, safety, and PROs of cladribine tablets 3.5 mg/kg** in patients with RRMS or active SPMS who had suboptimal response with a prior injectable DMT in the real world[3]

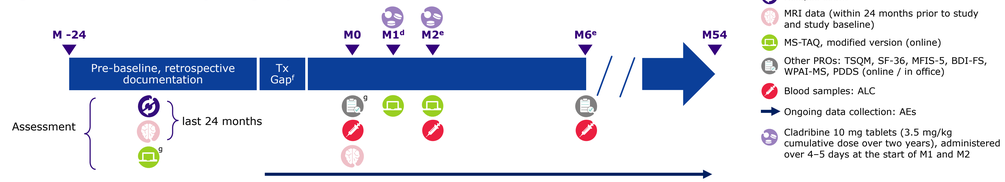
## OBJECTIVE

**To review PROs and safety of cladribine tablets 3.5 mg/kg from a subset of patients enrolled in the CLICK-MS trial six months after treatment initiation**

## METHODS

- This first interim analysis focused on **safety** and **PRO** data as of the 17 May 2021 data cutoff date[a]
  - The protocol of the CLICK-MS trial was previously published[3,b]

**Figure 1: CLICK-MS study design up to six months[c]**




**[a]This presentation reports interim 6-month data. As the study is ongoing, data are entered and cleaned continuously and may differ from final results after full enrollment and follow-up.** [b]Since the publication of the protocol, the duration of the study has been extended to 54 months from 30 months. [c]Only endpoints relevant to this presentation are shown. [d]Assessment at home. [e]Assessment at the clinic. [f]Duration between stopping previous injectable DMT and start of cladribine tablets was 0–45 days. [g]First assessment is for prior injectable DMT.

# RESULTS

## Patient characteristics

**Figure 2: Patient demographics**

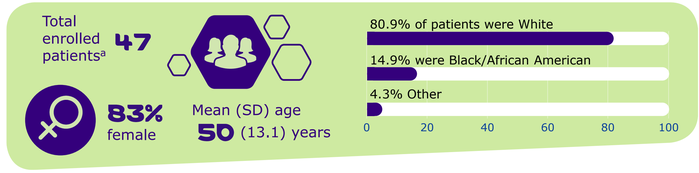
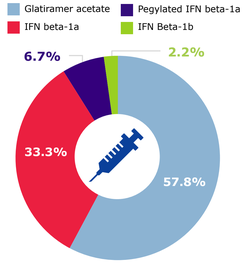



**Figure 3: Most recent prior injectable DMT used[b]**



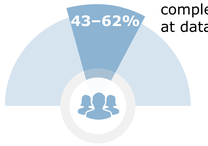

[a]At the time of the data cutoff for the interim analysis. [b]n=45. [c]Compared with prior MRI within 24 months. [d]Patient was mistakenly enrolled in the study. The patient received one week of treatment with cladribine tablets, then was discontinued from the study due to the protocol deviation; no TEAEs were reported. [e]n=45. [f]n=42. [g]n=40. [h]n=19. [i]n=17.

**Table 1: Patient disease characteristics**

| | Cladribine tablets 3.5 mg/kg (N=47) |
|---|---|
| **Diagnosis, n (%)** | |
| RRMS | 43 (91.5) |
| Active SPMS | 2 (4.3) |
| PPMS | 1 (2.1)[d] |
| Missing | 1 (2.1) |
| **Time since diagnosis (yrs), mean (SD)** | 13.6 (10.9)[e] |
| **Number of total prior DMTs, mean (SD)** | 1.8 (0.91)[f] |
| **Relapse in prior 24 months, n (%)** | |
| 0 | 23 (57.5)[g] |
| 1 | 14 (35.0)[g] |
| ≥2 | 3 (7.5)[g] |
| **ARR in prior 24 months, mean (SD)** | 0.25 (0.32)[g] |
| **Patients with stable baseline MRI (No T1 Gd+, new/newly enlarging T2)[c], n (%)** | 10 (52.6)[h] |
| **Number of lesions on baseline MRI[c], mean (SD)** | |
| T1 Gd+lesions | 0.24 (0.44)[i] |
| New T2 lesions | 0.68 (1.0)[h] |
| Newly enlarging T2 lesions | 0.06 (0.24)[i] |

## Adherence for cladribine tablets

Of the **47** enrolled patients, completed MS-TAQ at data cutoff




**All respondents adhered to treatment** in Month 1 and 2, representing the completion of the treatment course in the first year

**Table 2: MS-TAQ for cladribine tablets[a]**

| | Month 1 (N=20) | Month 2 (N=29) |
|---|---|---|
| **How many cladribine tablets were you supposed to take during this treatment week? (Mean, SD)** | 7.4 (1.88) | 7.1 (2.26) |
| **Did you miss or forget to take any cladribine tablets during this treatment week? (n, %) [Patients who responded "No"]** | **20 (100.0)** | **29 (100.0)** |
| **Overall, how hard or easy do you feel it is to take cladribine tablets as recommended by your physician during your treatment week? (Mean, SD)[b]** | 1.2 (0.50) | 1.0 (0.19) |
| **Overall, how satisfied are you with how things have been with your cladribine tablet treatment during your treatment week? (Mean, SD)[c]** | 4.3 (0.86) | 4.2 (0.98) |

[a]This presentation reports interim data. Variable patient numbers are due to ongoing data entry and cleaning. [b]An ordinal scale from 1 to 5 was used: 1 = Extremely easy, 2 = A little hard, 3 = Moderately hard, 4 = Very hard, 5 = Extremely hard. [c]An ordinal scale from 1 to 5 was used: 1 = Not satisfied at all, 2 = A little satisfied, 3 = Moderately satisfied, 4 = Very satisfied, 5 = Completely satisfied.

## Safety of cladribine tablets 3.5 mg/kg

- Of the 47 patients treated with cladribine tablets 3.5 mg/kg, **29.8%** experienced a TEAE (most had a mild/moderate TEAE) with one case considered serious (2.1%)
  - Most common TEAE (in ≥3 patients), excluding lymphopenia, was UTI (n=3, 6.4%)
    - Each of the remaining documented TEAEs were observed in individual patients (2.1%)
  - **No TEAE leading to treatment discontinuation occurred**

**Table 3: Overall incidence of TEAEs**

| | Total PY | Any TEAEs | Mild TEAEs | Moderate TEAEs | Severe TEAEs | Any serious TEAEs |
|---|---|---|---|---|---|---|
| **n (%)** | | 14 (29.8) | 13 (27.7) | 7 (14.9) | 1 (2.1)[a] | 1 (2.1) |
| **Total TEAEs (Rate per PY)** | 31.59 | 46 (1.46) | 29 (0.92) | 16 (0.51) | 1 (0.03) | 2 (0.06) |

[a]Severe lymphopenia

## Changes in ALC following treatment with cladribine tablets 3.5 mg/kg[a]

**Figure 4: ALC changes over time**

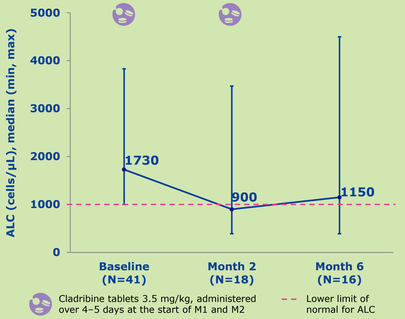



**Table 4: Incidence of lymphopenia**

| n (%) | Baseline (N=41) | Month 2 (N=18) | Month 6 (N=16) |
|---|---|---|---|
| **Normal ALC[b]** | 41 (100) | 6 (33.3) | 10 (62.5) |
| **Lymphopenia grade** | | | |
| **Grade 1[c]** | 0 | 5 (27.8) | 2 (12.5) |
| **Grade 2[d]** | 0 | 5 (27.8) | 3 (18.8) |
| **Grade 3[e]** | 0 | 2 (11.1) | 1 (6.3) |
| **Grade 4[f]** | 0 | 0 | 0 |

[a]This presentation reports interim data. Variable patient numbers are due to ongoing data entry and cleaning. [b]1,000 – 4,800 cells/µL. [c]800 – <1,000 cells/µL. [d]500 – <800 cells/µL. [e]200 – <500 cells/µL. [f]<200 cells/µL.

## PROs for cladribine tablets 3.5 mg/kg (early data)[a]

**Table 5: PROs**

| Median (Q1, Q3) [n] | Baseline | Month 6 |
|---|---|---|
| **TSQM global satisfaction[b]** | 57.1 (42.9, 71.4) [19] | 89.3 (71.4, 92.9) [6] |
| **SF-36[c]** | | |
| Physical components summary scale | 48.1 (35.5, 55.9) [29] | 54.5 (50.3, 56.8) [9] |
| Mental component summary scale | 47.4 (40.4, 52.0) [29] | 50.4 (46.8, 54.4) [9] |
| **MFIS-5 total score[d]** | 9.0 (6.0, 13.0) [25] | 7.5 (3.5, 11.0) [8] |
| **PDDS[e]** | 1.5 (1.0, 3.0) [30] | 1.0 (0, 2.0) [10] |
| **BDI-FS total score[f]** | 3.0 (1.0, 7.0) [26] | 0 (0, 1.0) [9] |
| **WPAI-MS[g]** | | |
| Percent work time missed | 0 (0, 0) [25] | 0 (0, 0) [9] |
| Percent impairment while working | 20.0 (10.0, 30.0) [18] | 10.0 (5.0, 15.0) [4] |
| Percent overall work impairment | 20.0 (10.0, 32.6) [18] | 10.0 (5.0, 15.0) [4] |
| Percent activity impairment | 20.0 (10.0, 45.0) [24] | 10.0 (10.0, 20.0) [9] |

[a]This presentation reports interim data. Variable patient numbers are due to ongoing data entry and cleaning. [b]TSQM score range 0–100. Higher score = higher satisfaction. [c]SF-36 scores range 0–100 (higher score = better health). [d]MFIS-5 scores range 0–20 (higher scores = greater impact of fatigue). [e]PDDS scores range 0–8 (higher scores = higher level of disability). [f]BDI-FS scores range 0–21 (higher scores = greater symptom severity). [g]WPAI-MS scores are expressed as impairment percentages (higher percentage = greater impairment/less productivity).

**Abbreviations**: **AE**, adverse event; **ALC**, absolute lymphocyte count; **ARR**, annualized relapse rate; **BDI-FS**, Beck-Depression Inventory – Fast Screen; **DMT**, disease modifying therapy; **Gd+**, gadolinium-enhancing; **IFN**, interferon; **M**, month; **MFIS-5**, Modified Fatigue Impact Scale – 5-item version; **MRI**, magnetic resonance imaging; **MS**, multiple sclerosis; **MS-TAQ**, MS Treatment Adherence Questionnaire; **NARCOMS**, North American Research Committee on MS; **PDDS**, Patient Determined Disease Steps; **PPMS**, primary progressive MS; **PRO**, patient reported outcome; **PY**, patient-years; **RMS**, relapsing forms of MS; **RRMS**, relapsing-remitting MS; **SD**, standard deviation; **SF-36**, 36-Item Short Form Health Survey; **SPMS**, secondary progressive MS; **TEAE**, treatment-emergent adverse events; **TSQM**, 14-Item Treatment Satisfaction Questionnaire for Medication; **UTI**, urinary tract infection; **WPAI-MS**, Work Productivity Activity Impairment – MS; **Yrs**, years | **References**: 1. Fox RJ, et al. *Int J MS Care* 2013;15:194–20. 2. Rammohan K, et al. *Drugs* 2020;80:1901–28. 3. Miravalle AA, et al *Neurodegener Dis Manag* 2021;11:99–111. | **Acknowledgments**: This study was sponsored by EMD Serono (CrossRef Funder ID: 10.13039/100004755), who reviewed and provided feedback on the poster. Writing and editorial support for the development of this poster was provided by Ying Jean, PhD and Delisa O'Brien of Ashfield MedComms (New York, NY, USA), an Ashfield Health company, and was funded by the study sponsor. The authors had full control of the poster and provided their final approval of all content.

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**SCAN FOR FULL AUTHOR DISCLOSURE DETAILS**