Introduction

- Pediatric forms of relapsing-remitting multiple sclerosis (RRMS) are more active than those in adults.¹
- Yet, the effectiveness of different therapeutic approaches is not well studied in this population.²

Purpose

- To compare the effectiveness of early use of high efficacy therapies (HET) versus intermediate efficacy therapies (IET) in children and adolescents with multiple sclerosis.

Methods

- This retrospective analysis included patients with RRMS starting before 18 years old from 4 Alsatian centers, diagnosed during a 10-years period (2010-2020).
- Collected data included age, gender, disease-modifying treatment (DMT), Expanded Disability Status Scale (EDSS), magnetic resonance imaging findings.
- DMT were categorized as follows:
  - IET: beta-1a interferon, glatiramer acetate, dimethyl fumarate, teriflunomide;
  - HET: fingolimod, natalizumab, ocrelizumab, alemtuzumab.
- The primary endpoint was the occurrence of a new relapse.

Results

- Sixty-four patients were included in the analysis (80% women, mean age 15.5 years, 81% treated with IET) with a median follow-up of 37 months (Table 1).
- The cumulative probability of being relapse-free was 0.0% under IET, vs 90.9% under HET (p=0.013) (Figure 1).
- For patients with IET at baseline, the cumulative probability of keeping IET was 10.2% (IC95% 2.06;50.8), vs 90.9% under HET (p=0.013) (Figure 2).
- The cumulative probability of no worsening of EDSS was 78.3% under IET, versus 100% under HET (p=0.43).

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>IET (N=52)</th>
<th>HET (N=12)</th>
<th>Total (N=64)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female sex – no. (%)</td>
<td>42 (81%)</td>
<td>9 (75%)</td>
<td>51 (80%)</td>
</tr>
<tr>
<td>Age – yr, mean ± SD</td>
<td>15.3±1.6</td>
<td>16.0±1.6</td>
<td>15.5±1.6</td>
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<tr>
<td>Patients with ≥9 T2-weighted MRI lesions</td>
<td>46†</td>
<td>12</td>
<td>58</td>
</tr>
<tr>
<td>Patients evaluated</td>
<td>33 (71%)</td>
<td>10 (83%)</td>
<td>43 (74%)</td>
</tr>
</tbody>
</table>

Table 1. Baseline characteristics of the patients, according to DMT group. DMT: disease-modifying treatment, IET: intermediate efficacy therapy, HET: high efficacy therapy, SD: standard deviation, MRI: magnetic resonance imaging, yr: year.

Conclusions

- Patients under intermediate efficacy therapies had a much higher disease activity than those on early high efficacy therapies.
- Rapid initiation of more aggressive treatment may allow better disease control.
- However, the effect on EDSS worsening remains uncertain, probably due to the small number of events and the short follow-up duration.

References

2. Padda G et al., 2021, Lancet Neurol, DOI: 10.1016/S1474-4422(20)30432-4

Disclosure

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