Evaluation of Multiple Sclerosis Patients’ Disease Modifying Therapy Prior to and after Disease Relapse

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BACKGROUND

• Multiple Sclerosis (MS) is a chronic progressive inflammatory neurodegenerative disease that affects more than 1,000,000 people in the United States and over 2.5 million people worldwide.

• The standard practice to treat relapsing MS is through disease modifying therapy (DMT) drug regimens which reduce clinical and radiographic relapses and can delay disease progression.

• Treatment guidelines for MS focus on efficacy, safety and patient specific factors, but do not provide specific guidance in DMT selection.

• Currently DMT escalation vs. induction are being evaluated.

OBJECTIVE

• Evaluate patient characteristics associated with step-wise DMT start or change of category after MS relapse

METHODS

Study Design

• This is a retrospective chart review of all patients with an MS diagnosis (ICD9 340.0; ICD10 C50) who visited the University of Virginia Health System (UVA) between January 1, 2014 and March 31, 2017, during a relapse event. Patients were identified using a MS clinical database of those who received intravenous steroids since 2014. DMTs were separated into three groups based on annual relapse rate (ARR). Changes in DMT after diagnosis or relapse were then categorized as 1, 2 or 3 step change depending on the change of drug group and if patient was treatment experienced or treatment naive (Fig. 1). Patient characteristics were then compared.

• Exclusion criteria: Primary or secondary progressive MS

• Primary outcome: To evaluate the change in DMT following a MS relapse

Definitions

• RRMS = Relapsing remitting MS

• SPMS = Secondary progressive MS

• CIS = Clinically isolated syndrome

• DMT = Disease modifying therapy

• PPMS = Primary progressive MS

• Pulse Steroids = steroid treatment at standing intervals in

DISCUSSION

• A total of 67 patients with RRMS who experienced a relapse were included in this retrospective chart review.

• 14 patients were considered treatment naive.

• Patients in both groups treated with a 2-step DMT initiation were overall younger (most < 40 years old) and had a worse EDSS at time of relapse.

• 15 patients treatment experienced were not on DMT at time of relapse most commonly due to self-discontinuation or administrative error (e. insurance lapse)

• For the treatment experienced group, DMT at time of relapse was the greatest predictor of a 2 step change (no treatment > group 2 > group 3) via regression analysis

• A 2 step change occurred most frequently in patients with residual deficit

• Limitations

• Not every relapse patient was captured in the clinic database

• New drug approval has changed drug availability and therapy since 2014 and may have played a role in the step-wise changes

CONCLUSIONS

• Patients presenting to the UVA MS Clinic had a mean age of 40 years at time of initial relapse

• Treatment of patients with MS relapse at UVA MS Clinic are most commonly treated with a escalation approach in DMT

• Younger patients or those with a more disabling relapse are more frequently treated with a two-step escalation versus those treated with one-step in both the treatment naive and the treatment experienced group.

REFERENCES


DISCLOSURES

The authors M Goldman and R Tingen have nothing to disclose concerning potential financial or personal relationships with commercial entities that may have a direct or indirect impact on the subject matter of this presentation.

Dr. Myla Goldman has the following disclosure: Consulting fees: AbbVie; EMD Serono; Serono. Dr. Robert D’Eramo has the following disclosure: Research support: Biogen; EMD Serono; Merck; Novartis; Teva; Teva Pharmaceuticals; Medicare Inc; Horizon-NS Scenix, NV; NeuroPhamco Inc; BioCBX.

Table 1: Baseline Demographics

<table>
<thead>
<tr>
<th>Group</th>
<th>Treatment Experienced</th>
<th>Treatment Native</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>(n=31)</td>
<td>(n=18)</td>
</tr>
<tr>
<td>Female Gender (%)</td>
<td>54.8 (56.5)</td>
<td>50.0 (44.4)</td>
</tr>
<tr>
<td>EDSS Before Relapse</td>
<td>3.1 (3.4)</td>
<td>3.1 (3.4)</td>
</tr>
<tr>
<td>EDSS After Relapse</td>
<td>3.3 (3.6)</td>
<td>3.3 (3.6)</td>
</tr>
</tbody>
</table>

Table 2: Treatment Experienced

<table>
<thead>
<tr>
<th>Step</th>
<th>n</th>
<th>(n=31)</th>
<th>(n=18)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>41.3 (33.5-50.2)</td>
<td>28.0 (22.0-37.0)</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>50.2 (40.6-60.0)</td>
<td>53.6 (40.0-67.0)</td>
</tr>
<tr>
<td>3</td>
<td>6</td>
<td>50.2 (40.6-60.0)</td>
<td>53.6 (40.0-67.0)</td>
</tr>
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</table>

Table 3: Distribution of Age at Time of Relapse

<table>
<thead>
<tr>
<th>Age</th>
<th>20-29</th>
<th>30-39</th>
<th>40-49</th>
<th>50-60</th>
<th>60+</th>
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</thead>
<tbody>
<tr>
<td>n</td>
<td>10</td>
<td>9</td>
<td>7</td>
<td>5</td>
<td>10</td>
</tr>
</tbody>
</table>

Figure 1: DISCUSSION

Figure 2: Treatment Experienced

Figure 3: EDSS Before Relapse

Figure 4: EDSS After Relapse