Longitudinal follow up of a cohort of subjects with incidental abnormal MRI at presentation

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Background

MRI is widely used in clinical practice and incidentally reveals presence of lesions that can be seen in multiple sclerosis (MS), but in subjects not having typical clinical events of MS. In clinical practice consultation for “abnormal MRI” to assess for MS is common. Despite reports of several cohorts of patients with the “radiologically isolated syndrome”, little is known about natural history of such findings and the risk to develop MS.

Objective

To evaluate longitudinally, clinical and MRIs characteristics in subjects with incidental abnormal findings on brain MRI.

Design/Methods

We studied and followed longitudinally 30 subjects that presented to MS clinic for incidental MRI findings without typical symptoms of MS. Clinical and paraclinical data, including MRIs were recorded until reaching a definitive diagnosis. MRI findings suggestive of MS were considered in presence of 12 hyperintensities ≥3mm fulfilling Barkoff¹ criteria (at least 3 out of 4), with or without enhancing lesions.

Results

Patients with MRI lesions suggestive for MS were more likely to develop MS

<table>
<thead>
<tr>
<th>Patients N=30</th>
<th>MRI lesions suggestive of MS N=15</th>
<th>MRI lesions not suggestive of MS N=15</th>
</tr>
</thead>
<tbody>
<tr>
<td>No MS diagnosis</td>
<td>8 (54%)</td>
<td>15 (100%)</td>
</tr>
<tr>
<td>MS diagnosis-McDonald 2005¹</td>
<td>4 (27%)</td>
<td>0*</td>
</tr>
<tr>
<td>MS diagnosis-McDonald 2010⁰</td>
<td>7 (47%)</td>
<td>0**</td>
</tr>
</tbody>
</table>

* p = 0.009, Fisher’s exact test
** p = 0.006, Fisher’s exact test

MRI lesions suggestive of MS

MRI lesions not suggestive of MS

Patients with abnormal CSF (presence of oligoclonal bands or increase in IgG index) were more likely to develop MS and have MRI lesions suggestive of MS

<table>
<thead>
<tr>
<th>Patients N=15</th>
<th>CSF normal N=11</th>
<th>CSF abnormal N=4</th>
</tr>
</thead>
<tbody>
<tr>
<td>No MS diagnosis</td>
<td>8 (80%)</td>
<td>2 (33%)</td>
</tr>
<tr>
<td>MS diagnosis-McDonald 2005¹</td>
<td>0*</td>
<td>2 (33%)</td>
</tr>
<tr>
<td>MS diagnosis-McDonald 2010⁰</td>
<td>1 (13%)**</td>
<td>2 (33%)</td>
</tr>
<tr>
<td>MRI lesions suggestive of MS</td>
<td>2 (22%)***</td>
<td>5 (83%)</td>
</tr>
</tbody>
</table>

* p = 0.142, Fisher’s exact test
** p = 0.325, Fisher’s exact test
*** p = 0.04, Fisher’s exact test

Conclusion

In our cohort none of the subjects without MRI findings consistent with Barkoff¹ criteria developed MS. The subjects who had MRI findings consistent with Barkoff criteria and abnormal CSF at presentation were likely to develop symptoms typical for MS attack and subsequent MRI changes.

REFERENCES


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