Quality of Life in Neuromyelitis Optica: A Systematic Review

INTRODUCTION

- Neuromyelitis Optica (NMO; also known as Devic’s disease) is a rare autoimmune condition characterized by:
  - Acute relapsing optic neuritis
  - Extensive transverse myelitis
  - Historically, NMO was viewed as a subtype of Multiple Sclerosis
  - Anti-Aquaporin 4 antibody (against aquaporin-4 antigen) is specific, and present in approximately 70% of people with NMO
  - Many multiple sclerosis (MS) treatments (such as beta-interferon) may actually increase relapse rates in NMO

NMO is associated with significant reduction in quality of life (QoL)

- NMO is a relapsing condition: every relapse causes further disability, requiring a period of rehabilitation
- Optic neuritis is associated with blindness, loss of colour vision, central scotoma and pain on eye movement
- Longitudinal extensive transverse myelitis is associated with bilateral motor weakness, sensory loss including numbness, intermittent paralysis, symmetrical spontaneous pain, neuropsychological disturbances, and bladder and bowel dysfunction
- Brain stem involvement can cause prolonged hiccoughs, nausea, vomiting, vertigo and respiratory failure
- MS is also associated with transverse myelitis
- Transverse myelitis from MS is typically not as fulminant compared with NMO

OBJECTIVE

To evaluate the QoL in patients with NMO by conducting a systematic review of published peer-reviewed studies

METHODS

- Literature search performed in “MEDLINE” and “EMBASE”
- Studies that included patients with NMO and reported use of validated QoL instrument were included
- Key Words:
  - Quality of life
  - Neuromyelitis optica
  - Devic’s
  - Population: Patients with Neuromyelitis Optica
  - Outcome: Pain level and QoL
  - Language of studies: English only
  - Time of publication: All studies published before November 2014
  - Study design: Observational studies
  - Two independent authors screened the titles and abstracts and extract the data in standardized format of the studies included. All disagreements were resolved through discussion

RESULTS

- Number of studies included for analysis: 7, out of which two were linked
- Country from where studies were reported: USA (3), UK (1), France (1), Japan (1), Argentina (1)
- Total number of patients: (174)
- QoL instruments used:
  - Short-form-36
  - Various pain severity scores (Short Form of the Brief Pain Inventory, McGill Pain Questionnaire)
  - Fatigue (EMIF-SFP)
  - Depression (PHQ)
  - Extended Disability Status Scale
- Comparator:
  - Patients with MS (three studies) patients
  - Normal subjects (two studies)

DISCUSSION

Summary of major differences between NMO and MS

<table>
<thead>
<tr>
<th>NMO</th>
<th>MS</th>
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<tbody>
<tr>
<td>Fatigue</td>
<td>SF-36</td>
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<tr>
<td>Optic neuritis</td>
<td>Vision impairment and visual fields</td>
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<tr>
<td>Transverse myelitis</td>
<td>Longitudinal transverse myelitis</td>
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<td>Short form-36</td>
<td>Longer term compared to NMO</td>
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Most studies reported that QoL in NMO:

- Lower than QoL in MS patients
- Much lower than QoL in normal subjects
- The lower QoL score in NMO patients corresponded with higher pain scores

CONCLUSIONS

- NMO patients are associated with higher levels of pain and lower QoL scores than MS patients
- Further research is required

REFERENCES

1. Wiendl H et al. Neurology 2018; 82:1523-1531

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