CURRENT PHARMACOLOGICAL TREATMENT OPTIONS AND MANAGEMENT OF GUILLAIN-BARRE SYNDROME (GBS): AN UPDATED SYSTEMATIC REVIEW

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INTRODUCTION

GUILLAIN-BARRÉ SYNDROME

- Acute inflammatory demyelinating polyneuropathy
- Symmetrical muscle weakness usually begins in the legs and ascends
- Paresthesias in the hands and feet
- Most cases are preceded by an infection such as Campylobacter jejuni enteritis

Treatment

- The main modalities of disease modifying therapy for GBS are plasma exchange and intravenous immune globulin (IVIG)

Adopted from www.medicom.net
Most well-designed epidemiological studies of GBS return an annual incidence of around 1-2 cases per 100,000.

A retrospective study conducted by Thomas M et al, reported that a total of 284 patients were diagnosed with GBS during a period of 5 years in a tertiary care hospital.

# Evidence for Immunotherapy in GBS management

<table>
<thead>
<tr>
<th></th>
<th>Plasma Exchange (PE)</th>
<th>IV Immunoglobulin (IVlg)</th>
<th>Combined Treatments</th>
<th>Corticosteroids</th>
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</thead>
<tbody>
<tr>
<td><strong>Strong evidence supports</strong></td>
<td>PE recommended in nonambulant patients within 4 weeks of onset of neuropathic symptoms. (Level A*, Class I)**</td>
<td>IVlg recommended in nonambulant patients within 2 weeks of onset of neuropathic symptoms. (Level A, Class II)</td>
<td>Sequential treatment with PE followed by IVlg does not have a greater effect than either treatment given alone. (Level A, Class I)</td>
<td>Steroids not recommended in the treatment of GBS. (Level A, Class I)</td>
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<td><strong>Good evidence supports</strong></td>
<td>PE recommended for ambulant patients within 2 weeks of onset of neuropathic symptoms. (Level B, limited Class II)</td>
<td>IVlg recommended in nonambulant patients started within 4 weeks from the onset of neuropathic symptoms. (Level B, Class III)</td>
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<td>If PE started within 2 weeks of onset, there are equivalent effects of PE and IVlg in patients requiring walking aids. (Level B, Class I)</td>
<td>If started within 2 weeks of onset, IVlg has comparable efficacy to PE in patients requiring walking aids if started within 2 weeks of onset. (Level B, Class I)</td>
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<td>PE is a treatment option for children with severe GBS. (Level B, derived from Class II evidence in adults)</td>
<td>IVlg is a treatment option for children with severe GBS. (Level B, derived from Class II evidence in adults)</td>
</tr>
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</table>
AIM, OBJECTIVE AND METHODOLOGY

**To update the best available treatment options available for the management of GBS**

*Participants* - Children and adults with GBS of all degrees of severity

*Interventions* - All available treatments

*Comparators* - No treatment, placebo treatment, or other immunomodulatory and active treatments

*Study design* - Randomised Controlled Trials

*Study Outcomes* - Disability grade, death or disability (inability to walk without aid) after 12 months, relapse, and adverse events
SEARCH RESULTS

Records identified through database searching (PubMed, EMBASE and Cochrane) (n = 95)

- Records after duplicates removed (n = 78)
- Records screened (n = 29)
  - Full-text articles assessed for eligibility (n = 8)
    - Studies included in qualitative synthesis (n = 3)

Additional records identified through cross-referencing (n = 01)

- Restrictions applied (49)
  - English = 5
  - Study design = 28
  - Publication date (2012 to 2015) = 16

- Records excluded (n = 21)
  - Mixed population = 10
  - Other than GBS = 2
  - Outcomes = 9

- Studies excluded (n = 5)
  - Intervention = 1
  - Outcomes = 4
RESULTS

- One trial with 174 GBM patients, showed significantly more improvement in disability grade after four weeks with IVIg than plasma exchange treatment (mean difference 2.0).

- Another trial (n=9) demonstrated improved full strength muscle with the use of IVIg therapy compared to placebo at 2 weeks on Medical Research Council grading system score.

- At 6 months, the proportion of patients with recovery of full strength muscle was found to be higher in subjects receiving treatment with IVIg in the first 2 weeks from symptoms onset (80% vs. 41.38%) compared to patients who received treatment after 15 - 25 days from symptoms onset.
CONCLUSION

- GBS syndrome receiving IVIg therapy appears to be associated with an improved disability grade and higher recovery of full strength muscle.

“Further trials of ongoing/completed stage are available on ClinicalTrials.Gov database assessing the benefits and harms of GB-0998 (Venoglobulin-IH), NPB-01, Eculizumab, Intravenous Immunoglobulin, plasma exchange, Menactra Meningococcal Vaccination, 4-aminopyridine, plasmapheresis or Human Immunoglobulin Infusion, Ross River Virus (RRV) Vaccine, Nimenrix™, Meningococcal vaccine GSK134612, and magnesium threonate for GBS treatment.”
THANK YOU!

For further information, contact me on:

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