

RGH Pharmacy E-Bulletin

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A joint initiative of the Patient Services Section and the Drug and Therapeutics Information Service of the Pharmacy Department, Repatriation General Hospital, Daw Park, South Australia. The RGH Pharmacy E-Bulletin is distributed in electronic format on a weekly basis, and aims to present concise, factual information on issues of current interest in therapeutics, drug safety and cost-effective use of medications.

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Guillain-Barré Syndrome

Guillain-Barré syndrome (GBS) is an acute, inflammatory, peripheral neuropathy characterised by ascending motor paralysis. Males and females are equally affected, and adults are more frequently affected than children. There is evidence that GBS results from immune responses to non-self antigens (such as infectious agents) that misdirect to host nerve tissue, causing demyelination and axonal damage.

An acute respiratory or gastrointestinal infection precedes 75% of GBS cases by 1-3 weeks. Infection or re-infection with *Campylobacter jejuni*, often acquired from consumption of undercooked poultry, precedes 30% of all GBS cases. Epstein-Barr virus, Cytomegalovirus, and *Mycoplasma pneumoniae* infections have also been identified as antecedents to GBS. Concerns about an association between GBS and influenza vaccination were first raised when swine influenza vaccine was associated with a number of GBS cases during 1976-77 in the United States. However, evidence for any relationship between GBS and other influenza vaccines is less well established.

GBS presents as a rapidly evolving ascending motor paresis, with or without sensory symptoms. The legs are usually more affected than the arms, and facial paresis is present in 50% of affected individuals. The weakness progresses over hours to days and may be accompanied by tingling in the extremities. The respiratory muscles may be affected, with a progressive decline in respiratory function. Most patients require hospitalisation and many will require ventilatory assistance. Fever and constitutional symptoms are absent at onset. Deep tendon reflexes and proprioception are usually lost within a few days of onset. Autonomic nerves may be affected in severe cases of GBS, causing a loss of vasomotor control with wide fluctuation in blood pressure, postural hypotension, and cardiac dysrhythmias. Neuropathic and nociceptive pain is another common feature of GBS.

The diagnosis of GBS is made by recognising the pattern of rapidly evolving paralysis with areflexia, absence of fever or other systemic symptoms, and characteristic antecedent events. CSF findings consist of elevated protein levels without accompanying lymphocytosis. Electro-diagnostic features are mild or absent in the early stages, but conduction velocity slowing occurs later in the disease. If the diagnosis is strongly suspected, treatment should be initiated without waiting for the evolution of CSF and electro-diagnostic findings.

Treatment should be commenced as soon as possible and immunotherapy may not be effective if commenced more than 2 weeks following the first motor symptoms. Systematic reviews have endorsed the equivalence of plasma exchange (plasmapheresis) and intravenous immunoglobulin, and the lack of efficacy of steroids, in GBS. Administration of intravenous immunoglobulin after plasma exchange does not appear to confer any additional benefit. NSAIDs, opioids, amitriptyline, and gabapentin have all been reported to be effective in treating muscle pain. As noted, many patients with GBS require ventilatory assistance, sometimes for prolonged periods of time. Patients who improve may relapse in the second or third week. Follow up treatment with the original therapy is usually effective.

Approximately 85% of patients with GBS achieve a full functional recovery within several months to a year. The mortality rate is less than 5%, and death usually results from respiratory complications. The prognosis is worst in patients with axonal damage where regeneration cannot occur. Other indicators of a poor prognosis are advanced age, a fulminant attack, and delay in the onset of treatment.

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FOR FURTHER INFORMATION – CONTACT THE PHARMACY DEPARTMENT ON 82751763 or email: chris.alderman@rgh.sa.gov.au
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