Guillain–Barré Syndrome including variants (GBS)

Version: 3.0
Published: 20 October 2018

Condition for which IVIg has an established therapeutic role.

Specific Conditions	• Guillain–Barré Syndrome (GBS) • Guillain–Barré Syndrome (GBS) variants
Indication for IVIg Use	• Initial therapy for GBS with significant disability and progression • Relapse in GBS - treatment related fluctuation with initial improvement and subsequent deterioration post IVIg treatment
Level of Evidence	Clear evidence of benefit (Category 1)
Description and Diagnostic Criteria	Guillain–Barré Syndrome (GBS) is the commonest cause of acute flaccid paralysis in the West. The syndrome typically presents with rapidly progressive, relatively symmetrical ascending limb weakness consistent with a polyradiculoneuropathy and often with associated cranial nerve involvement. Motor signs and symptoms usually predominate over sensory signs and symptoms. Loss of tendon reflexes occurs in most cases. Major complications include respiratory failure and autonomic dysfunction. The disease is monophasic, reaching its nadir usually within two weeks, although arbitrary definition accepts a limit of four weeks. A plateau phase of variable duration follows the nadir before gradual recovery. Although recovery is generally good or complete in the majority of patients, persistent disability has been reported to occur in about 20 percent and death in four to 15 percent of patients. Intravenous immunoglobulin (IVIg) has been shown to have the same efficacy as plasma exchange. While the Asia-Pacific IVIg Advisory Group suggests that the choice between Ig and plasma exchange is based on availability, practicality, convenience, cost, and ease or safety of administration, Australia's National Ig Governance program has a policy to preference alternative therapies where available and appropriate. **Investigations** There is no biological marker for GBS. It is diagnosed by clinical recognition of rapidly evolving paralysis with areflexia. Investigations include the following: • Cerebrospinal fluid (CSF) protein elevation, although the level may be normal in the first two weeks of illness. The CSF white cell count may rise transiently, but a sustained pleocytosis suggests an alternative diagnosis or association with an underlying illness (e.g. HIV). • Electrophysiological studies may show changes after the first or second week of the illness, including conduction block, conduction slowing or abnormalities in F waves.
Justification for Evidence Category	One systematic review of nine randomised controlled trials (RCTs) of moderate quality found intravenous immunoglobulin (IVIg) hastened recovery in adults with GBS to the same degree as plasma exchange (Biotext 2004). This conclusion was confirmed in a 2014 Cochrane review. In severe disease, IVIg started within two weeks from onset hastens recovery as much as plasma exchange. Three studies, including a total of 75 children, suggested that IVIg significantly hastens recovery compared with supportive care. One low-quality RCT with 21 mildly affected children showed earlier signs of improvement and lower disability grades after four weeks with IVIg than supportive treatment alone

	(Frommer and Madronio 2006).
Diagnosis Requirements	A diagnosis must be made by a Neurologist, Paediatrician or a General Medicine Physician.
Qualifying Criteria for IVIg Therapy	Initial therapy for GBS with significant disability and progression This indication must be used for initial GBS therapy only. Any relapse in GBS (treatment-related fluctuation) with recurrent weakness after initial improvement may require a second treatment with IVIg. A second dose is available under the indication for **Relapse in Guillain–Barré syndrome (GBS) treatment-related fluctuation with initial improvement and subsequent deterioration post IVIg treatment** but must only be on the advice of, and after assessment by, a neurologist. • Significant disability as objectively measured by the Guillain–Barré syndrome (GBS) disability score of greater than one point OR • The patient has bulbar or autonomic features of GBS variant with significant disability AND • Weakness is progressive and indicates a trajectory to significant disability Relapse in GBS - treatment related fluctuation with initial improvement and subsequent deterioration post IVIg treatment Relapse in GBS (treatment-related fluctuation) with recurrent weakness after initial improvement may require a second treatment with IVIg. After qualifying for intial treatment under the indication **Initial therapy for Guillain–Barré Syndrome (GBS) with significant disability and progression** a second dose is available under this relapse indication but must only be on the advice of, and after assessment by, a neurologist. • Initial response to Ig therapy was followed by recurrent weakness with no alternative explanation and deterioration in a recent Medical Research Council (MRC) sum score (Kleyweg et al 1991) OR • Initial response was followed by worsening of bulbar or autonomic symptoms in patients with Guillain–Barré syndrome variant

Review Criteria for Assessing the Effectiveness of IVIg Use	Initial therapy for GBS with significant disability and progression **Review is not mandated for this indication however the following criteria may be useful in assessing the effectiveness of Ig therapy.** • Improvement in disability at four weeks after Ig treatment as assessed by the Guillain–Barré syndrome (GBS) disability score OR • Improvement in bulbar or autonomic symptoms in patients with Guillain–Barré syndrome variant AND • Patient survival and symptom improvement Relapse in GBS (treatment-related fluctuation) with recurrent weakness after initial improvement may require a second treatment with IVIg. A second dose is available under the 'Relapse' indication but must only be on the advice of, and after assessment by, a neurologist. Relapse in GBS - treatment related fluctuation with initial improvement and subsequent deterioration post IVIg treatment **Review is not mandated for this indication however the following criteria may be useful in assessing the effectiveness of therapy.** • Improvement in disability at four weeks after initial Ig treatment as assessed by the Guillain–Barré Syndrome (GBS) disability score OR • Improvement in bulbar or autonomic symptoms in patient with Guillain–Barré Syndrome variant AND • Patient survival and symptom improvement
Dose	Initial therapy for GBS with significant disability and progression • **Initial Dose** - 2 g/kg in 2 to 5 divided doses. Relapse in GBS (treatment-related fluctuation) with recurrent weakness after initial improvement may require a second treatment with IVIg. A second dose is available under the 'Relapse' indication but must only be on the advice of, and after assessment by, a neurologist. Refer to the current product information sheet for further information on dose, administration and contraindications. Relapse in GBS - treatment related fluctuation with initial improvement and subsequent deterioration post IVIg treatment • **Second Dose** - 2g/kg in 2 to 5 divided doses Refer to the current product information sheet for further information on dose, administration and contraindications.

Bibliography

Association of British Neurologists 2005, *Guidelines for the use of intravenous immunoglobulin in neurological diseases*, The Association, London. Available from: http://www.theabn.org/media/docs/ABN%20publications/IVIg-guidelines-final-July05.pdf

Biotext 2004, 'Summary data on conditions and papers', in *A systematic literature review and report on the efficacy of intravenous immunoglobulin therapy and its risks*, commissioned by the National Blood Authority on behalf of all Australian Governments, pp.149–50. Available from: https://www.blood.gov.au/system/files/A-systematic-literature-review-and-report-on-the-efficacy-of-IVIg-therapy-and-its-risks.pdf

Frommer, M & Madronio, C 2006, *The use of intravenous immunoglobulin in Australia*. A report for the National Blood Authority, Part B: systematic literature review, Sydney Health Projects Group, University of Sydney, Sydney, pp. 32–4.

Hughes, RA, Newsom-Davis, JM, Perkin, GD, et al 1978, 'Controlled trial of prednisolone in acute polyneuropathy', *Lancet,* vol. *2, no. 8093*, pp. 750-3.

Hughes, RAC, Raphaël, J-C, Swan, AV, et al 2006, 'Intravenous immunoglobulin for Guillain– Barré syndrome (Cochrane Review)', in *The Cochrane Library*, Issue 1, John Wiley & Sons, Ltd, Chichester, United Kingdom.

Hughes, RAC, Swan, AV & van Doorn, PA 2014, 'Intravenous immunoglobulin for Guillain Barré syndrome', The Cochrane database of systematic reviews, vol. 19, no. 9, pp. CD002063.

Kleyweg, RP, van der Meché, FG, Schmitz, PI 1991, 'Interobserver agreement in the assessment of muscle strength and functional abilities in Guillain-Barré syndrome', *Muscle Nerve*, vol. 14, no. 11. pp. 1103–9.

Korinthenberg, R, Schessl, J, Kirschner, J, et al 2005, 'Intravenously administered immunoglobulin in the treatment of childhood Guillain–Barré syndrome: a randomized trial', *Paediatrics*, vol. 116, no. 1, pp. 8–14.

Kornberg, AJ, for the Asia–Pacific IVIg Advisory Board 2004, *Bringing consensus to the use of IVIg in neurology. Expert consensus statements on the use of IVIg in neurology*, 1st edn, Asia–Pacific IVIg Advisory Board, Melbourne, pp. 14–20.

Medical Research Council. Aids to the examination of the peripheral nervous system, Memorandum no. 45, Her Majesty's Stationery Office, London, 1981. Available from: https://mrc.ukri.org/research/facilities-and-resources-for-researchers/mrc-scales/mrc-muscle-scale/

van Koningsveld, R, Steyerberg, EW, Hughes, RAC, et al 2007, 'A clinical prognostic scoring system for Guillain-Barré syndrome', *The Lancet. Neurology,* vol. 6, no. 7, pp.589-94.

Verboon, C, van Doorn, PA, & Jacobs, BC 2017, 'Treatment dilemmas in Guillain-Barré syndrome', *Journal of neurology, neurosurgery, and psychiatry*, vol. 88, no. 4, pp. 346-352.

Generated on: 1 April 2019