Supplementary Online Content


**eAppendix 1.** Criteria for Guillain-Barré Syndrome and Clinical Variants

**eAppendix 2.** Criteria for Electrophysiologic Variants of Guillain-Barré Syndrome

This supplementary material has been provided by the authors to give readers additional information about their work.
eAppendix 1. Criteria for Guillain-Barré Syndrome and Clinical Variants

**Guillain-Barré syndrome (GBS)**

Required features

- Progressive weakness in both arms and legs
- Areflexia (or hyporeflexia).

Features supportive of diagnosis

- Progression of symptoms over days to 4 weeks
- Relative symmetry
- Mild sensory signs or symptoms
- Cranial nerve involvement, especially bilateral facial weakness
- Recovery beginning 2 to 4 weeks after progression ceases
- Autonomic dysfunction
- Absence of fever at onset
- Typical cerebrospinal fluid (CSF) and electromyographic (EMG)/nerve conduction studies (NCS) features.

Features casting doubt on the diagnosis

- Asymmetrical weakness
- Persistent bladder and bowel dysfunction
- Bladder or bowel dysfunction at onset
- >50 mononuclear leukocytes/mm³ or presence of polymorphonuclear leukocytes in CSF
- Distinct sensory level.

For the diagnosis of this condition, the following should be excluded: acute spinal cord disease, carcinomatous or lymphomatous meningitis, myasthenia gravis, botulism, critical illness neuropathy, thiamine deficiency, periodic paralysis, corticosteroid-induced myopathy, toxins (such as neurotoxic shellfish poisoning), acute hypophosphataemia, prolonged use of neuromuscular junction blocking drugs, tick paralysis, West Nile poliomyelitis, recent diphtheria, lead intoxication, acute intermittent porphyria, functional paralysis.

Adapted from: ¹,²

**Pure motor GBS**

Same as criteria for GBS, but with absence of sensory symptoms.

**Miller-Fisher syndrome (MFS)**

Features required for diagnosis
- Bilateral ophthalmoparesis or ophthalmoplegia
- Ataxia
- Areflexia (or decreased tendon reflexes)

Features supportive of diagnosis

- Progression of symptoms over days to 4 weeks
- Relative symmetry of symptoms
- Mild limb weakness (in case of prominent limb weakness, consider GBS-MFS overlap syndrome)
- Mild sensory symptoms or signs (in case of prominent sensory symptoms or signs, consider GBS-MFS overlap syndrome)
- Facial palsy and/or bulbar palsy
- Presence of serum IgG antibodies against ganglioside GQ1b
- Nerve conduction studies: no changes in extremities
- High concentration of protein in CSF, albumino cytologic dissociation

Features that should raise doubt about the diagnosis

- Alterations in consciousness
- Corticospinal tract signs
- Fever at onset
- Marked persistent asymmetry of weakness

For the diagnosis of this condition, the following should be excluded: brainstem stroke, myasthenia gravis, Wernicke encephalopathy, botulism, brainstem encephalitis, diphtheria, tick paralysis.

Adapted from: 1,3,4

**GBS-MFS overlap syndrome**

Same as criteria for MFS, but with presence of prominent limb weakness and/or prominent sensory symptoms or signs

**Bickerstaff’s brainstem encephalitis (BBE)**

Features required for diagnosis

- Acute ophthal moplegia
- Ataxia
- Disturbed consciousness or hyperreflexia

Features supportive of diagnosis

- Progression of symptoms over days to 4 weeks
- Mild limb weakness (in case of prominent limb weakness, consider GBS-BBE overlap syndrome)
- Mild sensory symptoms or signs (in case of prominent sensory symptoms or signs, consider GBS-BBE overlap syndrome)
- Facial palsy and/or bulbar palsy

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Abnormal lesions on brain MRI
• EEG showing abnormal slow-wave activity
• Presence of serum IgG antibodies against ganglioside GQ1b
• Nerve conduction studies: no changes in extremities
• High concentration of protein in CSF, albuminocytologic dissociation

Features that should raise doubt about the diagnosis

• Fever at onset (consider infectious rhombencephalitis)

Adapted from: 1

_Acute Ataxic Neuropathy (AAN)_

Features required for diagnosis

• Ataxia with or without Rombergism
• Absence of ophthalmoparesis
• Areflexia (or decreased tendon reflexes)

Features supportive of diagnosis

• Progression of symptoms over days to 4 weeks
• Relative symmetry of symptoms
• Distal paresthesias
• Absence of weakness
• Presence of serum IgG antibodies against ganglioside GQ1b (or GD1b)
• Nerve conduction studies: normal or lower sensory nerve action potentials and/or lower sensory nerve conduction velocities (mostly in patients with rombergism)
• High concentration of protein in CSF, albuminocytologic dissociation

Features that should raise doubt about the diagnosis

• Alterations in consciousness
• Prominent limb weakness (< 4 on Medical Research Council scale)
• Corticospinal tract signs
• Fever at onset
• Marked persistent asymmetry of weakness

Adapted from: 1,5,6

_Bifacial weakness with distal paresthesia_

Features required for diagnosis

• Acute onset and rapidly progressive bilateral facial weakness
• No or minimal involvement of other cranial nerves, limb weakness, or ataxia
• Paresthesias in the distal dominant limbs
• Decreased or absent muscle stretch reflexes
• The nadir within four weeks and subsequent recovery

Features supportive of diagnosis

• History of antecedent infectious symptoms in the 4 weeks before neurological onset
• Evidence of recent cytomegalovirus infection
• CSF albuminocytologic dissociation
• Electrophysiological findings indicative of demyelinating neuropathy in the limbs

For the diagnosis of this condition, the following must be excluded: Lyme and sarcoidosis.

Adapted from: ¹,⁷

*Acute multiple cranial neuropathies*

Features required for diagnosis

• Unilateral or bilateral oculomotor (cranial nerves III, IV or VI) AND oropharyngeal weakness (cranial nerves IX, X, XI or XII). The clinical severity of each component may vary from partial to complete. The involvement of other cranial nerves (VII, V, VIII) may also be present. Typically, cranial nerves I and II are spared.
• Absence of ataxia
• Absence of disturbed consciousness
• Absence of prominent limb weakness
• Monophasic illness pattern I
• Interval between onset and nadir of cranial nerve involvement between 12 h and 28 days, with subsequent clinical plateau

Features supportive of the diagnosis

• Antecedent infectious symptoms
• Hyporeflexia
• Cerebrospinal fluid albuminocytologic dissociation (cerebrospinal fluid with total white cell count < 50 cells/µL and protein above the normal laboratory range)
• Neurophysiological evidence of neuropathy
• Presence of anti-GQ1b or anti-GT1a IgG antibodies

For the diagnosis of this condition, the following must be excluded: brainstem ischemia, myasthenia gravis, botulism and other causes of cranial polyneuropathy.

Adapted from: ⁸

*Pharyngeal - cervical - brachial variant*

Features required for diagnosis

• Relatively symmetric oropharyngeal weakness AND neck weakness AND arm weakness AND arm areflexia/hyporeflexia (The clinical severity of each component may vary from partial to complete).
• Absence of ataxia AND disturbed consciousness AND prominent leg weakness (the presence of additional features indicates overlap with other GBS variants)
• Monophasic illness pattern AND interval between onset and nadir of oropharyngeal or arm weakness between 12 h and 28 days AND subsequent clinical plateau

Features supportive of the diagnosis

• Antecedent infectious symptoms
• Cerebrospinal fluid albuminocytologic dissociation (Cerebrospinal fluid with total white cell count <50 cells/μL and protein above the normal laboratory range.
• Neurophysiological evidence of neuropathy
• Presence of IgG anti-GT1a or anti-GQ1b antibodies

For the diagnosis of this condition, the following must be excluded: botulism, diphtheria, brainstem tumor, neuro-Behçet disease, multiple sclerosis, polymyositis, myasthenia gravis, Wernicke encephalopathy, toxic or metabolic neuropathy, acute disseminated encephalomyelitis, and vascular disease involving the brainstem.

Adapted from: 1,9
**eAppendix 2. Criteria for Electrophysiologic Variants of Guillain-Barré Syndrome**

At least 3 sensory nerves and 3 motor nerves with multi-site stimulation F waves, and bilateral tibial H reflexes, need to be evaluated.

**AIDP**

At least 1 of the following in each of at least 2 nerves, or at least 2 of the following in 1 nerve if all others inexcitable and distal compound muscle action potential (dCMAP) >10% lower limit of normal (LLN):

- Motor conduction velocity <90% LLN (85% if dCMAP <50% LLN)
- Distal motor latency >110% upper limit of normal (ULN) (>120% if dCMAP <100% LLN)
- pCMAP/dCMAP ratio <0.5 and dCMAP >20% LLN
- F-response latency >120% ULN.

**Demyelinating**

Having some of the demyelinating features of AIDP, but not fulfilling above mentioned criteria.

**AMSAN**

- None of the features of AIDP except 1 demyelinating feature allowed in 1 nerve if dCMAP <10% LLN
- Sensory action potential amplitudes less than LLN.

**AMAN**

- None of the features of AIDP except 1 demyelinating feature allowed in 1 nerve if dCMAP <10% LLN
- Sensory action potential amplitudes normal.

**Inexcitable**

- dCMAP absent in all nerves or present in only 1 nerve with dCMAP <10%.

Adapted from: 10
References