



Appendix

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Appendix to: Green C, Baker T, Subramaniam A. Predictors of respiratory failure in patients with Guillain–Barré syndrome: a systematic review and meta-analysis. *Med J Aust* 2018; 208: 181-188. doi: 10.5694/mja17.00552.

Appendix: Characteristics of the studies included in the systematic review

Study	N	Inclusion Criteria	Exclusion Criteria	Country	Time period	Mean Age	Male Proportion	Proportion requiring IMV	NOS quality rating
Yamagishi, et al. (2017) ¹	177	Patients with GBS ^a		Japan	2011 – 2015	48.9 (SD = 19.7)	59% (n = 105)	17% (n = 30)	7
Kobori, et al. (2017) ²	4132	Patients with ICD-10 code G61.0 in Japanese Diagnosis Procedure Combination patient database	GBS affinity diseases, including MFS and Bickerstaff's encephalitis; patients receiving IMV on the first day of hospitalisation	Japan	2010 – 2012	Not provided	58.7% (n=2425)	6.8% (n = 281)	9
Fokkink, et al. (2017) ³	174	Patients with GBS ^a included in two clinical trials ^{4,5}	Insufficient stored serum samples for analysis	Netherlands	May 1986 – August 2000	49.6 (SD = 20.1)	56.9% (n = 99)	25.3% (41/162)	7
Sipla, et al. (2017) ⁶	69	Patients with GBS ^b aged ≥ 16 years		Finland	2004 – 2013	54.5 (SD = 17.0)	63.8% (n = 44)	14.5% (n = 10)	9
Toamad, et al. (2015) ⁷	55	Patients with GBS ^a aged ≥ 15 years	Other specific forms of polyneuropathy	Thailand	Jan. 2001 – Dec. 2010	50.2 (SD = 15.8)	50.9% (n = 28)	50.9% (n = 28)	7

Study	N	Inclusion Criteria	Exclusion Criteria	Country	Time period	Mean Age	Male Proportion	Proportion requiring IMV	NOS quality rating
Kalita, et al. (2016) ⁸	102	Patients with GBS ^a admitted to ICU with evidence of respiratory compromise (SBC < 12 and RR > 30/min)	Periodic paralysis; porphyria; viral myositis; polio; non-polio enteroviral disease; diphtheria; botulism; rabies; toxic neuropathy	India	14 years	IMV: 30.5 (SD = 15.9) No IMV: 28 (SD = 21.1)	73.5% (n = 75)	43.1% (n = 44)	9
Wu, et al. (2015) ⁹	541	Patients with GBS ^a aged ≥ 16 years	MFS; CIDP; Bickerstaff encephalitis; CIP/M; porphyric neuropathy; discharge within 3 days of admission	China	2003 – 2014	41.6 (SD not provided)	61.2% (n = 331)	14.8% (n = 80)	9
Hiew, et al. (2016) ¹⁰	48	All patients with GBS ^a	MFS; “incomplete MFS”; CIDP	UK	2007 – 2012	55.7 (SD = 16.1)	66.7% (n = 32)	18.8% (n = 9)	8
Kannan Kanikannan, et al. (2014) ¹¹	a.) 68 b.) 42	Patients with GBS ^a admitted to a neurointensive care unit	Secondary causes of GBS; MFS	India	a.) July 2007 – Dec. 2008 b.) June 2009 – Dec. 2009	a.) IMV: 32.9 (SD = 16.5) no IMV: 37 (SD = 16)	a.) 69.0% (n = 47)	a.) 32.4% (n = 22) b.) 57.1% (n = 24)	9

Study	N	Inclusion Criteria	Exclusion Criteria	Country	Time period	Mean Age	Male Proportion	Proportion requiring IMV	NOS quality rating
Verma, et al. (2013) ¹²	90	Patients with confirmed GBS ^a		India	2010 – 2012	29.3 (SD = 15.2)	62.2% (n = 56)	16.7% (n = 15)	9
Gonzalez-Suarez, et al. (2013) ¹³	106	Patients with GBS ^c		Spain	2000 – 2010	43.7 (SD = 23)	51.9% (n = 55)	17.0% (n = 18)	8
Sharshar, et al. (2012) ¹⁴	110	Adult patients with GBS ^a admitted to ICU; not receiving IMV prior to, or within 24 hours of inclusion	Non-idiopathic GBS; MFS; or either language barrier or cognitive decline precluding understanding of questionnaires	France	2006 – 2010	49.6 (SD = 16.7)	61.8% (n = 68)	23.0% (n = 25)	7
Paul, et al. (2012) ¹⁵	138	Patients with GBS ^a		India	2002 – 2006	IMV: 33.5 (SD = 11.6) No IMV: 34.1 (SD = 12.5)	71.0% (n = 98)	38.4% (n = 53)	9

Study	N	Inclusion Criteria	Exclusion Criteria	Country	Time period	Mean Age	Male Proportion	Proportion requiring IMV	NOS quality rating
Basiri, et al. (2012) ¹⁶	28	Patients with GBS ^d	Predisposing factors for other polyneuropathies (diabetes, hypothyroidism, uraemia, vitamin deficiency, toxicity)	Iran	July 2008 – July 2009	Not Provided	60.7% (n = 17)	14.3% (n = 4)	7
Fourrier, et al. (2011) ¹⁷	61	Patients with GBS ^e referred to ICU (primarily for suspected or established respiratory failure)	Non-idiopathic GBS	France	Jan. 1996 – March 2009	51.9 (SD = 20.5)	54.0% (n = 33)	65.0% (n = 40)	9

Study	N	Inclusion Criteria	Exclusion Criteria	Country	Time period	Mean Age	Male Proportion	Proportion requiring IMV	NOS quality rating
Walgaard, et al. (2010) ¹⁸	a.) 377 ^{4,5,19} b.) 188 ²⁰	Patients with GBS ^a enrolled in five prior studies ^{4,5,19,20} GBS disability score ≥ 3 , and onset of weakness < 2 weeks prior to randomisation	Age < 6 years; previous GBS; known allergic reaction to properly matched blood products; pregnancy; selective IgA deficiency; previous steroid therapy; severe concurrent disease; inability to attend follow up; contraindications to corticosteroid therapy	Netherlands, Germany, and Belgium	1985 – 1991 ⁴ Not Provided ¹⁹ 1994 – 2000 ⁵ 2002 – 2005 ²⁰ 2005 – 2008	Not Provided	a.) 55.4% (n = 209)	a.) 26.3% (n = 99) b.) 15.4% (n = 29)	8
Strauss, et al. (2009) ²¹	93	Adult patients with GBS ^a admitted to ICU	Non-idiopathic GBS; MFS; CIDP; HIV; Vascularitis; Myelitis; Hysteria	France	March 2003 – Dec. 2005	53.0 (SD = 17.0)	54.8% (n = 51)	35.5% (n = 33)	9
Sivadon-Tardy, et al. (2009) ²²	405	Patients with GBS ^a		France	1996 – 2004	Not Provided	Not Provided	Not Provided	6

Study	N	Inclusion Criteria	Exclusion Criteria	Country	Time period	Mean Age	Male Proportion	Proportion requiring IMV	NOS quality rating
Orlikowski, et al. (2009) ²³	16	Patients with GBS ^a admitted to ICU; unable to walk	Patients aged < 18 years; IMV on admission to ICU; mobile teeth or oropharyngeal disease	France	Not Specified	54.6 (SD = 14.1)	56.3% (n = 9)	62.5% (n = 10)	4
Funakoshi, et al. (2009) ²⁴	245	Patients with GBS ^f (n = 100), MFS (n = 100), and GBS/MFS overlap syndrome (n = 45)	Patients with profound limb weakness at onset, or altered consciousness during illness	Japan	April 1994 – Aug. 2006	GBS: median = 52 MFS: median = 43 GBS/MFS: median = 46	GBS: 55% (n = 100) MFS: 54% (n = 54) GBS/MFS: 64.4% (n = 29)	GBS: 10% (n = 10) MFS: 0% GBS/MFS: 2.4% (n = 11)	7
Ito, et al. (2007) ²⁵	15	Patients with GBS ^a who could undergo electrophysiological testing within 14 days of onset	Patients treated with immuno-related therapies (IVIg or Plasma exchange)	Japan	April 1999 – March 2006	45 (SD = 21.7)	53.3% (n = 8)	6.7% (n = 1)	7

Study	N	Inclusion Criteria	Exclusion Criteria	Country	Time period	Mean Age	Male Proportion	Proportion requiring IMV	NOS quality rating
Kaida, et al. (2007) ²⁶	208	Patients with GBS ^a with (n = 38) and without (n = 170) IgG antibodies to at least one GSC	Insufficient clinical data	Japan	Sep. 2001 – Dec. 2002	Anti-GSC+= 43.2 Anti-GSC-= 48.9	61.5% (n = 128)	Anti-GSC+: 22% (n = 8/36) Anti-GSC-: 11% (n = 19)	7
Durand, et al. (2006) ²⁷	154	Patients with GBS ^a admitted to ICU that have undergone electrodiagnostic testing	Patients receiving IMV before or within 24 hours of electrophysiological testing	France	Sep. 1998 – Jan. 2006	52.0 (SD = 19)	49.0% (n = 76)	22.1% (n = 34)	5
Arami, et al. (2006) ²⁸	76	Patients with GBS ^g		Iran	2003	34.4 (SD = 23.9)	59.2% (n = 45)	32.9% (n = 25)	7
Sundar, et al. (2005) ²⁹	46	Patients with GBS ^a		India	6 year period	IMV: Median= 36 No IMV: Median= 46	69.6% (n = 32)	60.9% (n = 28)	9

Study	N	Inclusion Criteria	Exclusion Criteria	Country	Time period	Mean Age	Male Proportion	Proportion requiring IMV	NOS quality rating
Durand, et al. (2005) ³⁰	70	Adult patients with GBS ^a admitted to ICU unventilated	Non-idiopathic GBS; MFS	France	Oct. 2000 – Nov. 2003	48.0 (SD = 19.0)	54.3% (n = 38)	14.3% (n = 10)	7
Cheng, et al. (2004) ³¹	77	Adult patients with GBS ^a		Taiwan	Jan. 1987 – Dec. 2001	IMV: 51.1 (SD = 22.2) No IMV: 49.7 (SD = 18.8)	Not Provided	32.5% (n = 25)	6
Kaida, et al. (2004) ³²	131	Patients with GBS ^a Patients requiring IMV (n = 44) compared to a random sample of GBS patients not requiring IMV (n = 87)		Japan	Jan. 1998 – Sep. 2000	IMV: median = 42 (36–48) No IMV: median = 41 (38–45)	64.1% (n = 84)	33.6% (n = 44)	7

Study	N	Inclusion Criteria	Exclusion Criteria	Country	Time period	Mean Age	Male Proportion	Proportion requiring IMV	NOS quality rating
Dourado, et al. (2003) ³³	41	Patients with GBS ^a		Brazil	June 1994 – Nov. 1999	Not Provided	Not Provided	Not Provided	7
Sharshar, et al. (2003) ³⁴	722	Patients with GBS ^a enrolled in two RCTs ^{35,36}		France	1981 – 1985; Jan. 1986 – March 1993	Not Provided	Not Provided	43.4% (n = 313)	8
Durand, et al. (2003) ³⁷	60	Patients with GBS ^a admitted to ICU; GBS onset within the last month; not receiving IMV	Age < 16 years; atypical GBS; serious pre-existing disease; unwillingness to undergo electrodiagnostic testing	France	Nov. 1998 – May 2000	52.3 (SD = 18.4)	43.3% (n = 26)	33.3% (n = 20)	7
Lawn, et al. (2001) ³⁸	114	Patients with GBS ^a admitted to ICU		USA	Jan. 1976 – Dec. 1996	IMV: median= 59 No IMV: median= 56	60.5% (n = 69)	52.6% (n = 60)	9
Zifko, et al. (1996) ³⁹	40	Patients with GBS ^e		Canada	Jan 1991 – Jan. 1995	51.0 (SD Not Provided)	60.0% (n = 24)	40.0% (n = 16)	6

Study	N	Inclusion Criteria	Exclusion Criteria	Country	Time period	Mean Age	Male Proportion	Proportion requiring IMV	NOS quality rating
Gourie-Devi & Ganapathy (1985) ⁴⁰	28	Patients with GBS ^d		India	One year period	Not Provided	82.1% (n = 23)	53.6% (n = 15)	6

MFS = Miller-Fisher Syndrome; GBS = Guillain-Barre Syndrome; IMV = invasive mechanical ventilation; ICU = intensive care unit; CIDP = Chronic Inflammatory Demyelinating Polyneuropathy; CIP/M = Chronic Inflammatory Polyneuropathy/Myopathy; SBC = Single Breath Count; RR = Respiratory Rate; GSC = Ganglioside Complexes.

Diagnostic Criteria for GBS: a) Asbury & Cornblath diagnostic criteria⁴¹; b) modified Swiss Neurological Society criteria for GBS⁴²; c) Levels 1, 2, or 3 diagnostic certainty for GBS/MFS described by Sejvar et al⁴³; d) Masucci & Kurtzke diagnostic criteria⁴⁴; e) unspecified/clinical diagnosis; f) criteria b, plus tetraparesis and a monophasic course²⁴; g) National Institute of Neurological and Communicative Disorders and Stroke criteria⁴⁵

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