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Appendix 1

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Appendix to: Broadley SA, Barnett MH, Boggild M, et al. A new era in the treatment of multiple sclerosis. *Med J Aust* 2015; 203: 139-141. doi: 10.5694/mja14.01218.

Appendix 1. Comparison of regulatory approval status, administration, efficacy and practicalities of currently available and emerging therapies for MS. Therapies have been grouped into broad bands of global efficacy, denoted by the thicker vertical lines.

Drug	β-interferon 1a	Laquinimod	Azathioprine	Glatiramer acetate	Glatiramer acetate*	β-interferon 1b	β-interferon 1a	Peginterferon beta 1a[†]	Teriflunomide	Fingolimod	Dimethyl fumarate	Natalizumab	Alemtuzumab[‡]
Route of Administration	IM	Oral	Oral	S/C	S/C	S/C	S/C	S/C	Oral	Oral	Oral	IV	IV
Dose	30 µg	0.6 mg	2 - 4.4 mg/kg	20 mg	40 mg	250 µg	44 µg	125 µg	14 mg	0.5 mg	240 mg	300 mg	12 mg/day
Frequency	Weekly	OD	OD	OD	3x/wk	Alt days	3x/wk	2 weekly	OD	OD	BD	Monthly	x2 courses
TGA Approval	Y			Y		Y	Y	Y	Y	Y	Y	Y	Y
PBAC Approval	Y			Y		Y	Y	Y	Y	Y	Y	Y	
Mechanism of Action	Immune modulation via γ-receptors	Quinolone-3-carboxamide	Immuno-suppression	Tolerance?	Tolerance?	Immune modulation via γ-receptors	Immune modulation via γ-receptors	Immune modulation via γ-receptors	Dihydroorotate dehydrogenase inhibitor	S-1-P1 receptor blockade	Reduces oxidative stress	VLA4 antibody	Lytic CD52 antibody
Pregnancy Category	D	Unk	D	B1	B1	D	D	D	X	D	B1	C	C
Relapses (ARR) RRR	**18%**	**23%**	**23%**	**29%**	**34%**	**34%**	**32%**	**37%**	**32%**	**55%**	**53%**	**68%**	**67%**
Disability (SDP 3m) RRR	**37%**	**36%**	42%	12%	-17%	25%	29%	**33%**	**30%**	**30%**	**38%**	**54%**	**52%**
New Gad Lesions RRR	**52%**	**37%**		**33%**	**45%**	**43%**	**88%**	**86%**	**80%**	**82%**	**90%**	**92%**	**94%**
New T2 Lesions RRR	**33%**	**30%**		**31%**	**35%**	**63%**	**78%**	**67%**	**77%**	**75%**	**85%**	**83%**	**83%**
Brain Atrophy (BPF) RRR	18%	**30%**		11%[†]	9%	**21%**[‡]	**32%**		25%	**36%**	**21%**[#]	2%	**57%**
Monitoring	FBC LFT	LFT	FBC LFT	None Routine	None Routine	FBC LFT	FBC LFT	FBC LFT	FBC LFT	FBC LFT	FBC Urinalysis	LFT JCV Ab	FBC EUC TFT Urinalysis
Adverse Effects	Lymphopenia Flu-like symptoms	LFT derangement	Lymphopenia LFT derangement Malignancy	Injection site reactions Post-injections reactions	Injection site reactions Post-injections reactions	Lymphopenia Flu-like symptoms Injection site reactions	Lymphopenia Flu-like symptoms Injection site reactions	Lymphopenia Flu-like symptoms Injection site reactions	Lymphopenia LFT derangement Peripheral neuropathy Alopecia	Lymphopenia LFT derangement Bradycardia Macular	Lymphopenia GI disturbance Flushing PML	PML	Lymphopenia Autoimmune thyroid disease ITP Anti-GBM

		LFT derangement	LFT derangement	LFT derangement	Rash	oedema PML		disease

IM = intramuscular; S/C = subcutaneous; OD = once daily; BD = twice daily; TGA = therapeutic goods agency; PBAC = pharmaceutical benefits advisory committee; wk = week; Y = yes; S-1-P = sphingosine-1- phosphate; CD = cluster of differentiation; FBC = full blood count; EUC = electrolyte, urea and creatinine; LFT = liver function tests; TFT = thyroid function tests; JCV = JC virus; Unk = unknown; PML = progressive multifocal leukoencephalopathy.

* data for 12 months only; † comparator was treatment delayed for 12 months; ‡data adjusted to comparison versus placebo

Figures in **bold** indicate $p < 0.05$

Adapted from Broadley et al 2014, (9) Broadley et al 2014 (10) and Broadley et al 2014 (11) with permission.

Key