Injected Disease Modifying Therapies

Brand Name	Avonex	Betaseron Extavia	Copaxone	Rebif
Generic Name	Interferon beta-1a	Interferon beta-1b	Glatiramer acetate	Interferon beta-1a
Year Marketed	1996	1993 (Betaseron) 2009 (Extavia)	1996	2002
How Given	Intramuscular injection	Subcutaneous injection	Subcutaneous injection	Subcutaneous injection
Frequency	Once a week	Every other day	Daily	Three times a week
Injection Site Reactions	Rare	Yes	Yes	Yes
Flu-like Symptoms	Yes	Yes	No	Yes
Systemic Reaction (chest pain, short of breath)	No	No	Yes	No
Autoinjector	Yes	Yes	Yes	Yes
Premixed?	Both	No	Premixed	Premixed
Allow at Room Temperature for:	1 week	1 month	1 week	1 month
Blood Tests Required	Yes	Yes	No	Yes
Pregnant Category	C	C	B	C
Patient support and financial assistance Programs	Avonex Services 1-800-456-2255	MS Pathways 1-800-788-1467 Extavia 1-866-925-2333	Shared Solutions 1-800-887-8100	MS Lifelines 1-877-447-3243
Website	www.Avonex.com	www.Betaseron.com www.Extavia.com	www.Copaxone.com	www.Rebif.com
Billing codes for insurance	J1825, Q3025	J1830	J1595	J3490

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Oral Medications

Brand Name	**Gilenya**	**Aubagio**	**Tecfidera**
Generic Name	fingolimod	teriflunomide	dimethyl fumarate
Year Marketed	2010	2012	2013
How Given	Oral	Oral, 7 or 14 mg	Oral, 240 mg
Frequency	once a day	once a day	twice a day
Side effects	First dose effect (2%)	Hair thinning (12%)	Flushing (40%); less so if taken with food
	Diarrhea (12% vs 7 % in placebo)	Diarrhea (17% vs 9% plc)	GI side effects Pain (18%), diarrhea (14%), nausea (12%), vomiting (9%), dyspepsia (5%)
	Liver monitoring	Liver monitoring monthly x 6	Itching (8%)
	Macular edema (0.7%) RF: DM, h/o uveitis	Peripheral neuropathy (1.5%) RF: 60+, DM, other meds	
	Shortness of breath	Mild BP increase	
	Mild BP increase	Acute urate nephropathy (1.2%), with hyperkalemia	
Infectious risk	Lower respiratory tract, herpetic infections	Lower resp tract Screen for latent TB	Not seen in trials Monitor WBC
Time to elimination	Avg 45 days	Up to 2 years; may be accelerated by 11-day protocol	5-24 hrs
Tests required prior to starting	OCT, ECG, VZV IgG, MRI, CBC, LFT	CBC, LFT, PPD, hep panel, pregnancy test	CBC
Pregnancy Category	C	X Must avoid pregnancy Men to use protection	C
Patient support and financial assistance Programs	Gilenya Support Program 1-877-408-4974	Aubagio MS One2One (855) 676-6326	MS ActiveSource (800) 456-2255
Website	www.Gilenya.com	www.Aubagio.com	www.Tecfidera.com

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Intravenous medications

Brand Name	Tysabri	Novantrone
Generic name	Natalizumab	Mitoxantrone
Year Marketed	2004	2000
How Given	Intravenously	Intravenously
Frequency	Every 4 weeks	Every 3 months
Time of infusion	1 hour + 1 hour observation	30 minutes
Allergic reactions	Hives 2%, Wheezing 0.8%	None
PML risk	Yes	No
Leukemia	No	About 2%
Cardiac damage	No	Yes
Nausea	No	Yes
Blood tests required	Baseline only	Yes
Pregnancy Category	C	D
Patient support and financial assistance programs	MS Active Source 1-800-456-2255	MSLifeline℠ 1-877-447-3243
Website	www.MSActiveSource.com www.Tysabri.com	www.novantrone.com
Insurance billing code	J2323, CPT 96413 +96415	J9293

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