NEW DRUGS

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The new drug commentaries in *Australian Prescriber* are prepared by the Editorial Executive Committee. Some of the views expressed on newly approved products should be regarded as preliminary, as there may be limited published data at the time of publication, and little experience in Australia of their safety or efficacy. However, the Editorial Executive Committee believes that comments made in good faith at an early stage may still be of value. Before new drugs are prescribed, the Committee believes it is important that more detailed information is obtained from the manufacturer's approved product information, a drug information centre or some other appropriate source.

Satralizumab

Approved indication: neuromyelitis optica spectrum disorder

Enspryng (Roche)
pre-filled syringes containing 120 mg/mL

Neuromyelitis optic spectrum disorder is an autoimmune disease that causes inflammation and demyelination in the central nervous system. It is distinct from multiple sclerosis and can cause permanent disability. Symptoms include loss of vision, paralysis, pain and bladder dysfunction. The treatments for multiple sclerosis are ineffective so acute management includes intravenous corticosteroids and plasma exchange. There is therefore interest in finding therapies to prevent attacks.

Many of the patients who have neuromyelitis optica spectrum disorder have AQP4 autoantibodies. Interleukin-6 has a role in the production of these autoantibodies and also aids their penetration of the blood–brain barrier by increasing its permeability. One strategy to prevent this process is to block the interleukin-6 signalling pathways. Satralizumab is a monoclonal antibody that has been genetically engineered to reduce the activity of interleukin-6 by binding to its receptors.

Satralizumab has to be given as a subcutaneous injection. The regimen begins with loading doses, followed by a monthly maintenance dose. Satralizumab has a half-life of about 30 days and is mainly cleared by catabolism.

There have been two randomised, double-blind, placebo-controlled, phase III trials of satralizumab.[1,2] The patients had experienced at least one relapse of neuromyelitis optica in the previous year. One trial[1] allowed the 83 participants to continue any immunosuppressive therapy, while the other did not.[2] In both trials the primary end point was the occurrence of a relapse. There were fewer relapses in the patients randomised to inject satralizumab. After 48 weeks, 76% and 89% of these patients had not had a relapse compared with 62% and 66% of the placebo groups (see Table).[1,2] Across both studies the hazard ratio was 0.42 (95% confidence interval 0.25, 0.71) representing a 58% reduction in the risk of relapse for patients injecting satralizumab. Patients who were seropositive for AQP4 autoantibodies tended to have more benefit from satralizumab.[1,2]

Injecting a monoclonal antibody can cause injection-site and hypersensitivity reactions. Patients should rotate where they inject between the abdomen and thighs. In the clinical trials adverse reactions that were more frequent with satralizumab than with placebo included headache, arthralgia and rashes.[1,2] Neutrophil numbers may decrease so the white blood cell count should be monitored. It may be necessary to withhold satralizumab, particularly if an infection develops. Treatment may also need to be halted if liver enzymes increase.

Satralizumab reduces relapses in patients with neuromyelitis optica spectrum disorder, but it is a rare disease so data are limited. A benefit on outcomes such as pain and fatigue was not seen in the trials.[1,2] There were few adolescents in the trials so efficacy and safety in patients younger than 18 years old is uncertain. Its safety in pregnancy is also unknown. The Australian approval of satralizumab is restricted to adults who are seropositive for the AQP4 autoantibody.

T manufacturer provided the product information

REFERENCES

1. Yamamura T, Kleiter I, Fujihara K, Palace J, Greenberg B, Zakrzewska-Pniewska B, et al. Trial of satralizumab in neuromyelitis optica spectrum disorder. N Eng J Med 2019;381;2114-24. https://doi.org/10.1056/NEJMoa1901747
2. Traboulsee A, Greenberg BM, Bennett JL, Szczechowski L, Fox E, Shkrobot S, et al. Safety and efficacy of satralizumab monotherapy in neuromyelitis optica spectrum disorder: a randomised, double-blind, multicentre, placebo-controlled phase 3 trial. Lancet Neurol 2020;19:402-12. https://doi.org/10.1016/S1474-4422(20)30078-8

The Transparency Score is explained in New drugs: transparency, Vol 37 No 1, Aust Prescr 2014;37:27.

At the time the comment was prepared, information about this drug was available on the websites of the Food and Drug Administration in the USA, the European Medicines Agency and the Therapeutic Goods Administration.

Table **Efficacy of satralizumab in phase III trials**

	Number of patients	Median duration of treatment	Patients with relapse	Annualised relapse rate	Proportion of patients free of relapse	
					48 weeks	96 weeks
Trial 1[1]	Satralizumab 41	107.4 weeks	8 (20%)	0.11	89%	78%
	Placebo 42	32.5 weeks	18 (43%)	0.32	66%	59%
Trial 2[2]	Satralizumab 63	92.3 weeks	19 (30%)	0.17	76%	72%
	Placebo 32	54.6 weeks	16 (50%)	0.41	62%	51%