

## New drugs

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### Atezolizumab

**Approved indication: non-small cell lung cancer**  
**Tecentriq (Roche)**  
**vials containing 1200 mg/20 mL as concentrate**  
**Australian Medicines Handbook section 14.2.1**

The immune checkpoint inhibitors such as nivolumab and pembrolizumab are being increasingly used to treat non-small cell lung cancer. Atezolizumab is a checkpoint inhibitor that binds to programmed death ligand-1 to prevent it interacting with its receptors. This stops the suppression of the immune response to tumour cells which is a feature of some cancers. Atezolizumab is expected to enhance the response of T-lymphocytes against non-small cell lung cancer.

The drug should be diluted then slowly infused intravenously. Infusions are given every three weeks with a steady state being reached in 6–9 weeks. As atezolizumab is a monoclonal antibody it is likely to be catabolised. There have been no pharmacokinetic studies in patients with hepatic or renal impairment. The elimination half-life is 27 days.

A phase II trial enrolled 287 patients with locally advanced or metastatic non-small cell lung cancer which had progressed after platinum-based chemotherapy. They were randomised to 1200 mg atezolizumab or docetaxel (75 mg/m<sup>2</sup>) every three weeks. The median follow-up was approximately 15 months. Progression-free survival was similar for atezolizumab and docetaxel (2.7 vs 3 months), but there was a significant difference in overall survival. Patients given atezolizumab lived for a median of 12.6 months compared with 9.7 months for the docetaxel group.<sup>1</sup>

A similar phase III trial randomised 1225 patients to the same regimen of atezolizumab and docetaxel. The primary efficacy analysis was limited to the first 850 patients. After a median follow-up of 21 months, 569 patients had died. Median overall survival was 13.8 months with atezolizumab and 9.6 months with docetaxel. This advantage was independent of tumour histology (squamous vs non-squamous) and the expression of the programmed death ligand.<sup>2</sup>

Infusing an antibody that affects the immune response has some predictable adverse reactions. In addition to infusion reactions, these include a risk of pneumonitis, hepatitis, colitis, neuropathy, meningoencephalitis, myocarditis and pancreatitis.

Some of these immune-related reactions to atezolizumab can be fatal. In the phase III trial, treatment-related adverse events were less frequent than with docetaxel (64% vs 86%). Common complaints included fatigue, nausea, diarrhoea and musculoskeletal pain. Adverse events led to a change in dose for 25% of the atezolizumab group (36% with docetaxel) and 8% withdrew from treatment (19% with docetaxel).<sup>2</sup>

Although atezolizumab has an advantage in overall survival, compared to docetaxel, experience with the drug is limited. The median duration of treatment in the phase III trial was 3.4 months. Most patients do not respond as the objective response rate was only 14% for atezolizumab and 13% for docetaxel.<sup>2</sup> There will need to be more research into predicting which patients will benefit and which will not. For example, atezolizumab may be less favourable for patients with certain mutations, such as an epidermal growth factor receptor mutation.<sup>2</sup> The relative effectiveness of the drugs in the class is currently unclear. Like other immune checkpoint inhibitors, atezolizumab will be studied at different stages of the disease and in other cancers, such as urothelial carcinoma.

**T T** [manufacturer provided additional useful information](#)

### REFERENCES

1. Fehrenbacher L, Spira A, Ballinger M, Kowanzet M, Vansteenkiste J, Mazieres J, et al; POPLAR Study Group. Atezolizumab versus docetaxel for patients with previously treated non-small-cell lung cancer (POPLAR): a multicentre, open-label, phase 2 randomised controlled trial. *Lancet* 2016;387:1837–46. [https://doi.org/10.1016/S0140-6736\(16\)00587-0](https://doi.org/10.1016/S0140-6736(16)00587-0)
2. Rittmeyer A, Barlesi F, Waterkamp D, Park K, Ciardiello F, von Pawel J, et al; OAK Study Group. Atezolizumab versus docetaxel in patients with previously treated non-small-cell lung cancer (OAK): a phase 3, open-label, multicentre randomised controlled trial. *Lancet* 2017;389:255–65. [https://doi.org/10.1016/S0140-6736\(16\)32517-X](https://doi.org/10.1016/S0140-6736(16)32517-X)

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 and the [European Medicines Agency](#).



Some of the views expressed in the following notes 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.