

Tigecycline

Tigecycline is an [antibiotic](#) used to treat a number of [bacterial infections](#).

It is a glycylcycline that is administered intravenously. It was developed in response to the growing rate of antibiotic resistance in bacteria such as [Staphylococcus aureus](#), [Acinetobacter baumannii](#), and [Escherichia coli](#).

As a tetracycline derivative antibiotic, its structural modifications has expanded its therapeutic activity to include Gram-positive and Gram-negative organisms, including those of multi-drug resistance.

Tigecycline is marketed by Pfizer under the brand name Tygacil. It was given a U.S. Food and Drug Administration (FDA) fast-track approval and was approved on June 17, 2005.

Case reports

2017

It can only be used intravenously which is also difficult to pass [blood brain barrier](#) (BBB). So, it will be a breakthrough if [intraventricular](#) (IVT) tigecycline is used in the clinical therapy.

Fang et al. described a case of a 50-year-old male worker whose clinical features were high [fever](#) and cerebral rigidity after neurosurgery.

The patient was treated with IVT tigecycline.

The symptoms of intracranial infection disappeared. The temperature of this patient decreased to normal and cerebral rigidity disappeared. The cerebrospinal fluid culture became negative, with normal levels of white blood cell, glucose and chloride.

IVT tigecycline therapy maybe effective to intracranial infection with XDR *A. baumannii*. However, more studies will further demonstrate the therapeutic values of IVT tigecycline to intracranial infection, and not only restricted to *A. baumannii* infections ¹⁾.

2016

Shrestha et al report a case of MDR *Acinetobacter* ventriculitis treated with intravenous and intraventricular colistin together with intravenous [tigecycline](#). The patient developed nephrotoxicity and poor neurological outcome despite microbiological cure. Careful implementation of bundle of measures to minimize EVD-associated ventriculitis is valuable ²⁾.

2010

A case of a 42-year-old male patient affected by low-grade ependymoma who developed AB-MDR post-neurosurgical ventriculitis. Initially, because of in vitro susceptibility, De Pascale et al used a

combination of intravenous colistin and [tigecycline](#). This treatment resulted in the improvement of the patient's initial condition. However, soon after, the infection relapsed; tigecycline was stopped and treatment with intrathecal colistin was initiated. Cure was achieved by continuing this treatment for approximately three weeks, without adverse effects ³⁾.

1)

Fang YQ, Zhan RC, Jia W, Zhang BQ, Wang JJ. A case report of intraventricular tigecycline therapy for intracranial infection with extremely drug resistant *Acinetobacter baumannii*. *Medicine (Baltimore)*. 2017 Aug;96(31):e7703. doi: 10.1097/MD.00000000000007703. PubMed PMID: 28767605.

2)

Shrestha GS, Tamang S, Paneru HR, Shrestha PS, Keyal N, Acharya SP, Marhatta MN, Shilpakar S. Colistin and tigecycline for management of external ventricular device-related ventriculitis due to multidrug-resistant *Acinetobacter baumannii*. *J Neurosci Rural Pract*. 2016 Jul-Sep;7(3):450-2. doi: 10.4103/0976-3147.176194. PubMed PMID: 27365967; PubMed Central PMCID: PMC4898118.

3)

De Pascale G, Pompucci A, Maviglia R, Spanu T, Bello G, Mangiola A, Scoppettuolo G. Successful treatment of multidrug-resistant *Acinetobacter baumannii* ventriculitis with intrathecal and intravenous colistin. *Minerva Anestesiol*. 2010 Nov;76(11):957-60. Epub 2010 May 6. PubMed PMID: 20445494.

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