Trientine dihydrochloride

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Approved indication: Wilson's disease

Trientine Waymade (Waymade)
250 mg capsules

Wilson's disease is an autosomal recessive disorder. This genetic defect affects the transport of copper. Free copper is toxic so it causes cell damage as it accumulates, firstly in the liver and then in the brain. The disease is therefore also known as hepatolenticular degeneration.

The treatment of Wilson's disease aims to keep copper concentrations low. This can include using zinc, to reduce the absorption of copper from the gut, and chelating agents, such as penicillamine, to increase excretion. Treatment is lifelong but, in the absence of advanced liver disease, life expectancy can be normal.

Trientine dihydrochloride is a chelating agent which forms a complex with copper. It is taken orally, but is not well absorbed and should not be taken with food. The absorbed portion of the dose is widely distributed. The molecule is metabolised and its main metabolites can also chelate copper. Absorbed trientine has a half-life of 13.5 hours and is excreted with its metabolites in the urine. The dose is determined by the serum concentration of free copper.

Various forms of trientine have been available for a number of years. The approval of trientine dihydrochloride in Australia appears to be mainly based on a retrospective observational study. This used data from 405 children and adults with Wilson's disease who had been followed for an average of 13.3 years. As patients could change treatment, the analysis involved 326 treatments with penicillamine and 141 with trientine. Most patients took trientine as a second-line therapy. In second-line therapy stable liver disease was achieved with 25% of penicillamine treatments and 22.2% of trientine treatments. The corresponding figures for stable neurological disease were 69.2% and 33.3%.[1]

During the study 28.8% of the treatments with penicillamine were stopped because of adverse events, compared with 7.1% for trientine. The adverse effects of trientine include nausea, arthralgia and rashes. Neurological symptoms may get worse at the start of treatment. Trientine can reduce serum iron so some patients may develop anaemia. As trientine and zinc may interact, they should not be used together. Trientine is teratogenic.

The approved indication for trientine dihydrochloride in Australia is for adults and children with Wilson's disease who are unable to tolerate penicillamine.

[X] manufacturer did not respond to request for data

REFERENCE

1. Weiss KH, Thurik F, Gotthardt DN, Schäfer M, Teufel U, Wiegand F, et al. Efficacy and safety of oral chelators in treatment of patients with Wilson disease. Clin Gastroenterol Hepatol 2013;11:1028-35.e2. https://doi.org/10.1016/j.cgh.2013.03.012

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 European Medicines Agency and the Therapeutic Goods Administration.