Polymyxin B

Chen et al. investigated the clinical effect of ventricular polymyxin B supplemented by continuous external ventricular drainage in the treatment of intracranial infection with multidrug-resistant (MDR) or extensively drug-resistant (XDR) Gram negative (G-) bacilli following neurosurgery.

A retrospective analysis was performed on 28 patients who had G-bacilli intracranial infection following neurosurgery between January 2017 and December 2019. The patients were treated with intraventricular polymyxin B supplemented by continuous external ventricular drainage. The clinical characteristics, treatment process, cerebrospinal-fluid-related indicators, results and prognosis were analysed.

All of 28 patients developed an infection subsequent to neurosurgery, and cerebrospinal fluid (CSF) cultures demonstrated MDR/XDR G- bacilli, including Acinetobacter baumannii in 14 cases, Klebsiella pneumoniae in 9 cases, Pseudomonas aeruginosa in 3 cases, and Enterobacter cloacae in 2 cases. The ventricular drainage tube remained unobstructed in all patients during treatment, and intraventricular polymyxin B combined with intravenous antibiotics were administered each day. The duration of treatment with intraventricular polymyxin B was 14.96±4.28 days, and the time required to obtain a negative CSF culture was 8.23±4.02 days. The bacterial clearance rate from cerebrospinal fluid was 92.9% (26/28), and the clinical cure rate was 82.1% (23/28). Among them, 18 patients underwent ventriculoperitoneal shunt insertion for hydrocephalus 82.5 (59.5,114.75) days after the infection was cured, and the mortality rate was 17.6% (5/28). There was no significant change in patient blood creatinine levels before and after treatment. Cured patients were followed up for 4 months to 3 years, and no recurrences were observed.

Treatment of intracranial infection with MDR/XDR G- bacilli using early intraventricular polymyxin B supplemented by continuous external ventricular drainage treatment may be a safe and effective treatment strategy ¹⁾.

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Chen H, Guo X, Xie D, Dong X, Niu J, Chen G. A Clinical Study on the Use of Intraventricular Polymyxin B Supplemented by Continuous External Ventricular Drainage in the Treatment of Drug-Resistant Gram-Negative Bacilli Intracranial Infection. Infect Drug Resist. 2020;13:2963-2970. Published 2020 Aug 24. doi:10.2147/IDR.S261510

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