

Publication

Revisiting systemic treatment of bacterial endophthalmitis: a review of intravitreal penetration of systemic antibiotics

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Adjunctive systemic antibiotic therapy for treatment of bacterial endophthalmitis is controversial but common practice due to the severity of the disease. In absence of guidance documents, several antibiotic regimens are being used without applying evidence-based prescribing, thus leading to inappropriate treatment of this serious eye condition.; To summarize available data on intravitreal penetration of systemically administered antibiotics and to discuss their usefulness from a microbiological and pharmacological point of view.; We performed a systematic PubMed search of studies investigating antibiotic concentrations in the vitreous after systemic administration in humans, and selected animal models.; The best-documented agents achieving therapeutic levels in the vitreous are meropenem, linezolid and moxifloxacin. Vancomycin, cefazoline, ceftriaxone, ceftazidime, imipenem and trimethoprim-sulfamethoxazole reach levels justifying their use in specific situations. Available data do not support the use of ciprofloxacin, levofloxacin, aminoglycosides, aminopenicillins, piperacillin, cefepime, and clarithromycin. With very limited but available promising data, the use of daptomycin and rifampicin deserves further investigation.; The choice of the adjunctive systemic antibiotic agent - in situations where considered relevant for treatment - must to date be made on an individual base, considering microbiological aspects as well as operative status and inflammation of the eye. This review gives a systematic overview of antibiotic options and provides guidance to the clinician striving for optimal systemic antibiotic treatment of bacterial endophthalmitis.

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