

imipenem prophylaxis in experimental endophthalmitis.

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Abstract:

PURPOSE: To determine the effect of prophylactic intravenous imipenem on experimental Staphylococcus aureus endophthalmitis. **METHODS:** The right eyes of 36 New Zealand albino rabbits received an intraocular injection of 100, 1,000, or 10,000 colony-forming units (CFU) of *S. aureus*. Each of these three groups was subdivided into a control group (no antibiotic prophylaxis) and a prophylactic group, which received 37.5 mg/kg imipenem 8 h prior to inoculation of bacteria, 30 min prior to inoculation of bacteria, and 8 h after inoculation of bacteria. Eyes were observed daily by slit-lamp examination and funduscopy. The eyes were enucleated after 5 and 9 days for the control and prophylactic groups, respectively. Vitreous samples were cultured for bacteria, and the eyes were prepared for histologic evaluation. **RESULTS:** All eyes that received imipenem demonstrated significantly less inflammation (two-way analysis of variance; $P < 0.001$) on clinical examinations than did control eyes. The prophylactic groups that had received 100 CFU and 1,000 CFU of bacteria also had significantly fewer positive vitreous cultures than the corresponding controls (chi(2) test; $P < 0.001$ and $P < 0.01$, respectively). Histologically, the prophylactic groups injected with 100 CFU and 1,000 CFU of bacteria had significantly less inflammation than the control groups (Student's t-test; $P < 0.00001$ and $P < 0.0001$, respectively). There was no significant difference in the number of positive vitreous cultures or histologically between the control and prophylactic groups that received 10,000 CFU of bacteria. **CONCLUSIONS:** Prophylactic intravenous imipenem can prevent or significantly reduce the severity of experimental endophthalmitis