

IMIPENEM-CILASTATIN FORTIFIED EYE DROPS FOR THE TREATMENT OF CORNEAL ULCERS CAUSED BY CONTACT LENSES: DEVELOPMENT AND CHARACTERISATION

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AIM AND OBJECTIVES

1. Describe the elaboration of 0.5% imipenem-cilastatin eye drops.
2. Evaluate the effectiveness and safety of this master formula.

MATERIAL AND METHODS

A 41-year-old woman goes to the Emergency Department for severe pain in the right eye. Commercial eye drops (0.3% tobramycin and 0.5% moxifloxacin) were being applied.

The Ophthalmology Department diagnoses infiltrated corneal ulcer with epithelial defect. In the microbiological culture of the contact lenses: *Enterococcus faecalis* and *Achromobacter xylosoxidans* are isolated. The antibiogram revealed sensitivity to B-lactams and resistance to tobramycin and quinolones. A corneal scraping was also carried out where growth of *Fusarium spp* was found.



Fortified eye drops:
5% ceftazidime
0.5% imipenem



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The therapy was completed with 1% voriconazole and 5% natamycin for *Fusarium*.

RESULTS

We used the imipenem-cilastatin vial for intravenous use and water for injection, working in a horizontal laminar flow cabinet and following the standardized work procedure. A 0.22 micron filter was used. We established stability at 2-8°C for two days protected from light. It was verified that a completely transparent liquid with pH 7 had been obtained.

CONCLUSIONS

0.5% imipenem-cilastatin eye drops have proven to be a **novel alternative** in the treatment of corneal ulcers caused by *Enterococcus faecalis* and *Achromobacter xylosoxidans*. It shows a **rapid and intense antibiotic effect** that led to an eye inflammation reduction. It is also **easy to apply**, which facilitated therapeutic compliance and contributed to a shorter hospital stay. **Its safety and tolerance profile was adequate.**

References: Spanish Society of Hospital Pharmacy : <https://www.sefh.es/>
Cordovés Dorta LM et al. Arch. Soc. Canar. Oftal., 1986-1998; 9: 55-57



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