COMPOUNDING AN EYE DROP FORMULATION OF TOPICAL INSULIN FOR CORNEAL DEFECTS REFRACTORY TO PREVIOUS TREATMENT: EXPERIENCE IN REAL CLINICAL PRACTICE

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BACKGROUND AND IMPORTANCE:

Recent studies suggest the use of topic insulin on the ocular surface to accelerate cicatrization of the corneal lesions in diverse ocular pathologies. However, its use is not extended in real clinical practice.

AIM AND OBJECTIVES:

To describe an eye drop formulation of insulin 1UI/mL for the use in corneal defects refractory to previous treatment and to evaluate its possible application in the regular practice.

MATERIAL AND METHODS:

A bibliographical research was performed in pubmed using the following keywords: topical insulin, corneal ulcers and epithelial defects refractory, obtaining 9 results. Five references were selected with the most recent publication dates (2017-2020).

The Pharmacy and Ophthalmology departments reached an agreement to compound and eye drop formulation of topic insulin 1 UI/mL. The elaboration was carried out in the Pharmacy department in a horizontal laminar flow cabin following an aseptic compounding technic using regular insulin (100UI/mL) and artificial tears with a polyethylene glycol base. The dilution obtained was then filtered and packaged in light protected eye drops bottles.

The risk matrix of sterile preparations of the “Sociedad Española de Farmacia Hospitalaria” was applied obtaining a low level of risk, which establishes a validity period of 14 days refrigerated or 48 hours at room temperature.

RESULTS:

The formulation obtained is a transparent liquid, sterile, adequate for ocular use. A visual control was performed during the validity period, observing no physical alterations of the product.

Currently, 9 patients with neurotrophic corneal ulcers or epithelial defects, refractory to medical and/or surgical standard treatment were treated. The mean days of treatment was 21±7 days. Improvement of the pain was observed in every patient and total healing of the lesion was reported in 66% of the patients. No adverse reactions were reported.

CONCLUSIONS:

The topic insulin compounded is adequate for its ocular use, with no alterations observed during the validity period determined. The acceptance of the patients has been good, achieving quick relief of the pain in every patient and total healing of the cornea in most of them.
This preparation can be used as a treatment option in coneal defects refractory to previous treatment.