USE OF TOPICAL VORICONAZOLE IN ALTERNARIA KERATITIS

USO DE VORICONAZOL TÓPICO EN QUERATITIS POR ALTERNARIA

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ABSTRACT

Clinical case: A 38-year-old man with fungal Alternaria keratitis was referred from another hospital 25 days after post-traumatic penetrating keratoplasty surgery on his right eye. We commenced treatment with topical voriconazole and the condition resolved.

Discussion: Fungal Alternaria keratitis is rare, and treatment is difficult because the clinical response does not correlate well with the antibiotic in vitro sensitivity of the fungus. Clinical cases need to be diagnosed and treated quickly if visual loss is to be avoided. The combination of topical and systemic voriconazole has been shown to be an effective treatment for this condition (Arch Soc Esp Oftalmol 2008; 83: 493-496).

Key words: Fungal keratitis, resistant keratitis, topical voriconazole, Alternaria, penetrating keratoplasty.

RESUMEN

Caso clínico: Hombre de 38 años remitido de otro centro por presentar queratitis fúngica por Alternaria 25 días después de realizarle una queratoplastia penetrante postraumática en ojo derecho. Se instauró tratamiento con voriconazol tópico y oral con buena evolución posterior.

Discusión: Las queratitis fúngicas por Alternaria son poco frecuentes. Su tratamiento es difícil porque la evolución clínica no se correlaciona con la susceptibilidad in vitro del hongo. Producen cuadros clínicos que requieren un rápido diagnóstico y tratamiento, para evitar la pérdida de visión. La combinación de voriconazol tópico y sistémico puede ser una buena alternativa en caso de hongos resistentes al tratamiento convencional.

Palabras clave: Queratitis fúngicas, queratitis resistentes, voriconazol tópico, Alternaria, queratoplastia penetrante.
INTRODUCTION

Fungal keratitis is a rare cause of corneal infection in industrialized countries, but a major public health issue in tropical countries, where a majority of the local population lives in rural areas.

The species involved vary as a function of geographical location. Filamentous fungi are typical of the tropics, whilst moulds are more closely related to external risk factors.

The ophthalmological relevance of this disease is linked to its diagnostic and therapeutic difficulties, which account for the poor patient prognosis. Besides, incidence has increased in mild weather countries, due to the use and abuse of topical corticoids and antibiotics, the growth in corneal surgery, or the tourist visits to tropical regions. The onset of this type of keratitis is induced by failure of corneal defensive mechanisms, due to either systemic or local immunosupression.

The degree of virulence of fungi may be due to their ability to withstand host’s defences, to penetrate an intact Descemet membrane, and to induce necrosis through the production of enzymes, thus contributing to an inflammatory reaction of the host towards the damage to the ocular tissue.

These facts justify the interest of ophthalmologists about predisposing factors and clinical characteristics which may facilitate a quick diagnosis and the search for new more efficient less crude therapeutic alternatives.

CASE REPORT

Thirty eight year old patient, with a history of hepatitis, referred from E&R to the Anterior Segment Unit in our hospital, with a suspected infectious keratitis of the right eye. Post traumatic penetrating keratoplasty had been performed on the patient 25 days earlier. A central epithelial defect was found for the graft under ophthalmological examination, together with anterior stromal edema. Samples were collected for a microbiological culture by corneal scraping, and topical antibiotics and oral voriconazole were prescribed as a treatment (6 mg/kg every 12 hours). The corticoid dose was reduced in view of the suspected fungal infection. The culture showed growth of Alternaria, and 1% voriconazole collierum was added hourly to the treatment. A clear reduction was noticed of the anterior inflammation (Fig. 1).

A new keratoplasty was performed three months later, with an intracamerular amphotericin B injection. Post surgical evolution was good (Fig. 2).

DISCUSSION

Fungi are eukaryotic organisms which cannot penetrate normal corneal epithelium. Some species of Alternaria produce slowly evolving corneal ulcers (I). Most of these are found in rural environments, and receive antibiotics and corticoids before reaching ophthalmologists.

Some studies have shown that trauma is the most common risk factor, followed by systemic disease, and earlier local surgery. Trauma involving plants accounts for 60.5% of all traumas.
In our case a young patient was affected by a perforating trauma, requiring keratoplasty. Fungal keratitis was visible after surgery. Some of the most severe complications derived from penetrating keratoplasty include post surgical ocular infections. Fungal contamination of the donor button may be the cause for further infections. This could explain the fungal keratitis in our patient. In experimental models, immunosuppression of ocular tissues induced by systemic administration of methylprednisolone leads to more severe infections, and favours a longer presence of fungi in the cornea (2). Earlier studies have shown that voriconazole is an effective treatment for fungal keratitis (3,4). Systemic and topical 1% voriconazole was used in our case, with a clear improvement in corneal inflammation. Voriconazole is a synthetic derivative of fluconazole, and has a wide spectrum, including yeasts and filamentous fungi. It may be used as a systemic treatment (oral/intravenous), or as a topical treatment (1%, as a drug for compassionate use). Side effects may include increased photosensitivity or facial reddening after one month (5).

Additional studies will be needed, but a combination of topical and systemic voriconazole may be a good alternative for fungal keratitis unresponsive to conventional treatments.

REFERENCES