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## Matrix therapy agent for the treatment of neurotrophic herpetic corneal ulcer in children

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### Abstract

**Purpose :** To evaluate the efficacy of a matrix therapy agent for the treatment of neurotrophic herpetic corneal ulcer in children.

**Methods :** Six eyes of six children affected by neurotrophic corneal ulcer resistant to treatment were included in the study. All eyes had previous treatment with systemic acyclovir, topical antibiotic ointment (tid), and preservative-free artificial tears. In presence of a resistant ulcer, failing to heal (or to improve) despite at least 1 month of treatment, with corneal anesthesia/hypoesthesia, a matrix therapy agent [Poly(Carboxymethylglucose Sulfate), ReGeneraTing Agent, RGTA] was prescribed, with one application in the evening, as the last eye drop, on alternate days. Systemic acyclovir, chloramphenicol/tetracycline ointment (tid), and preservative-free artificial tears were continued. Controls were performed weekly. The area of corneal ulcer, as detected in anterior segment photographs, and measured by Image J software, and the depth of ulcer as detected by anterior segment OCT were evaluated. Corneal sensitivity at baseline was assessed with a Cochet-Bonnet esthesiometer.

**Results :** Six eyes of six patients (2 m, 4 f, age 5-11 years, median 8 years) received RGTA treatment. At baseline the area of the corneal ulcers ranged from 6 to 18% of the corneal surface (median 11%); in all eyes small neovessels can be seen in the area of ulcer; all patients had a reduced corneal sensitivity in the affected eye (median 2 cm vs. 6 cm in fellow eyes,  $P=0.001$ ). In all eyes corneal ulcer healed, after 3-7 weeks (median 5 weeks) of treatment. Compared to baseline, a significant reduction of the area of corneal ulcer was seen at week 2 ( $P=0.018$ ), and at the following time points ( $P<0.001$ ). Anterior segment OCT showed, after the healing of the ulcer, a progressive thickening of the corneal epithelium, with partial regularization of the corneal surface profile.

**Conclusions :** Topical treatment with matrix therapy agent RGTA can be useful in treatment of neurotrophic herpetic corneal ulcers in children, improving the healing of the lesion.

This is an abstract that was submitted for the 2016 ARVO Annual Meeting, held in Seattle, Wash., May 1-5, 2016.