Effect of hypotonic 0.4% hyaluronic acid drops in dry eye patients: a cross-over study

Pasquale Troiano ¹, Gaspare Monaco

Affiliations
PMID: 19034126 DOI: 10.1097/ICO.0b013e318180e55c

Abstract

**Purpose:** The aim of the study is to evaluate the short-term effects of 2 kinds of artificial tears, both containing 0.4% hyaluronic acid in an aqueous solution yet having different osmolarity, on the typical symptoms of patients suffering from dry eye and on the vitality of corneal and conjunctival epithelial cells.

**Methods:** A cross-over, randomized, balanced, single-blind study involving 28 patients was divided into 2 treatment groups: group A (unpreserved 0.4% hyaluronic acid eye drops 300 mOsm/L) and group B (unpreserved 0.4% hyaluronic acid eye drops 150 mOsm/L). Both treatments were administered for 7 days, being dosed as a 1 solution drop 4 times daily. After a 1-day wash-out period, the patients in group A passed over to group B and vice versa.

**Results:** Treatment with hypotonic solution gave better results in relieving symptoms, along with a statistically significant improvement (P < 0.001) in the state of the comeoconjunctival epithelium, than the isotonic solution. At the end of the study, 60.7% of the patients declared that they preferred hypotonic solution and only 10.7% preferred isotonic solution; the remaining 28.6% did not notice any difference between the 2 treatments.

**Conclusions:** By reducing the osmolarity of tear film, the hypotonic solution not only improves the characteristics of tear film and the vitality of the epithelial cells of the cornea and conjunctiva but also proves to be effective in reducing dry eye symptoms.

Related information

MedGen
PubChem Compound (MeSH Keyword)

LinkOut - more resources

Full Text Sources
Ovid Technologies, Inc.
Wolters Kluwer

Other Literature Sources
The Lens - Patent Citations