Efficacy and safety of sodium hyaluronate 0.18% (VISMED®) vs sodium chloride 0.9% in patients with bilateral moderate dry eye

Baeyens V,1 Fiorentini R,1 Baudouin C,2 Dorsey P3 and The French VISMED® Study Group

1Research & Development Department, TRB Chemedica International, Geneva, Switzerland; 2Ophthalmology Department, XV–XX Hospital, Paris, France; 3US Biometric Consultant, Franklin, ME, USA.

Introduction
Dry eye is a disorder of the tear film that is caused by tear deficiency or excessive tear evaporation. It is associated with symptoms of ocular discomfort, dryness, scratchiness, burning, soreness and grittiness. Several authors1,2 have obtained excellent results in the symptomatic treatment of this pathology with sodium hyaluronate. Sodium hyaluronate was chosen as the active compound in VISMED® because of its unique viscoelastic properties, which lubricate and protect the ocular surface. In addition, sodium hyaluronate exhibits water entrapping and mucoadhesive properties, which delay the evaporation of the product from the eye surface.

VISMED® is a unique formulation that contains ions naturally present in the tear fluid, namely calcium, magnesium, potassium, sodium and chloride, which maintain the physiology of the cornea. It has been formulated to be hypotonic, in order to compensate for the hypertonicity of tears in patients experiencing dry eye syndrome.

Study objective
The aim of this study was to assess the efficacy and safety of sodium hyaluronate 0.18% (VISMED®) compared with that of sodium chloride 0.9% (saline) solution in patients with bilateral moderate dry eye syndrome.

Methods

Study design
A randomized [1:1] double-masked, parallel-group, controlled, phase III trial performed in 18 centres in France. A total of 151 patients were randomized and received the double-blind medication (safety population). The ITT population consisted of 150 patients. The baseline demographic characteristics of patients are summarized in Table 2.

Safety
A total of 20 patients experienced adverse events (AEs) during the study. 11 (14.9%) in the VISMED® group and 9 (11.7%) in the saline group. Of these, 1 patient (1.3%) and 3 patients (4%) were considered to have experienced AEs that were possibly or probably related to the test product in the VISMED® and saline groups, respectively.

Most of the AEs reported were ophthalmic disorders (9 patients, 6%), followed by general disorders (5 patients, 3.3%). By treatment group, the most common AE reported was burning in the VISMED® group (2 patients, 2.7%) and headache in the saline group (2 patients, 2.6%).

Efficacy

Primary analysis
Patients receiving VISMED® exhibited a greater per cent change from baseline for symptoms intensity on VAS than those in the saline group at Day 7 (p = 0.0103) and Day 28 (p = 0.0007) (Figure 3). The difference between VISMED® and saline was almost statistically significant at Day 7 (p = 0.0137) and not at Day 28 (p = 0.1357).

Secondary analysis
At Day 28, VISMED® produced a significantly (p = 0.0222) better reduction in the composite index of symptoms intensity and frequency compared with saline [62.5% and 54%, respectively] (Figure 4). The score for lissamine green staining indicated a significant difference between groups in favour of VISMED® at Day 7 (p = 0.0013) and Day 28 (p = 0.0007) (Figure 5). The effect of symptoms on the activities of daily life was significantly lower in the VISMED® group and 9 (11.7%) in the saline group at Day 7 (-27.03% and -19.85%, respectively) and Day 28 (-43.44% and -33.98%, respectively) (Figure 3). The difference between VISMED® and saline was statistically significant at Day 7 (p = 0.0546) and Day 28 (p = 0.0279).

Conclusions
Treatment with VISMED® resulted in a lower incidence of AEs and was well tolerated. VISMED®, administered topically to the eye three or four times daily (i.e. every 4–5 h) or as needed for 28 days, was effective in reducing subjective symptoms intensity on VAS and objective corneal staining with fluorescein. VISMED® was efficient in improving scores of symptoms frequency, composite index of symptoms intensity on VAS and frequency effect of symptoms on activities of daily life, comfort of the eye drops and staining with lissamine green.

References