

Clinical study on the role of combined action of hydrocortisone and artificial tears in the management of inflammatory dry eye disease, based on MMP-9 detection

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Introduction

- Dry eye disease (DED) is a highly prevalent ocular condition with a significant burden on affected patients.
- DED is often accompanied by increased osmolarity of the tear film and inflammation of the ocular surface. Research shows MMP-9 is elevated in the tears of dry eye patients.
- We investigated the effect of combined action of hydrocortisone and artificial tears in the management of inflammatory dry eye disease, following a protocol based on identification of MMP-9

Methods

- A total of 30 patients with chronic DED were included.
- InflammDry (Rapid Pathogen Screening), a single-use, non-invasive test to detect MMP-9 was performed in all our patients.
- Patients who had a positive test, received preservative-free hydrocortisone 0.335% (Softacort, Laboratories Thea, France) and were randomized to receive either Sodium hyaluronate 0,15% (Wet therapy / Group 1) or Sodium hyaluronate 0,15% and trehalose 3% (Thealoz Duo / Group 2) three times daily for 28 days.
- Ocular redness was assessed at baseline and day 28. InflammDry test, tear film break-up time (TBUT) and corneal staining were performed to assess signs of DED.
- All patients filled a Speed questionnaire for evaluation of subjective symptoms at baseline and on day 28.

Results

Clinical Characteristics of the Study Population

Number of patients	30
Age (mean {range})	59 {22 - 74}
Number of patients receiving Softacort & Wet therapy (Group 1) vs Softacort & Thealoz Duo (Group 2)	12 vs 18

		Pre-Treatment	Post-Treatment	<i>p-Value(of difference)</i>
TBUT (in sec)	Group 1	8	19	0.020
	Group 2	5	18	
Presence of Corneal Staining (n of patients)	Group 1	12	1	<0.001
	Group 2	18	2	

Results

- Speed questionnaire for evaluation of subjective symptoms was performed at baseline and on day 28.
- Dryness/Itchiness, Pain/Irritation, Epiphora and Visual Fatigue were compared in Group 1 & 2 before and after treatment, on a scale from 0 to 4.

Speed Questionnaire Results								
	Dryness / Itchiness		Epiphora		Pain / Irritation		Visual Fatigue	
	Pre-Treatment	Post-Treatment	Pre-Treatment	Post-Treatment	Pre-Treatment	Post-Treatment	Pre-Treatment	Post-Treatment
Group 1	2.50	0.57	2.29	1.25	2.45	1.15	1.50	0.9
Group 2	2.83	0.67	3.17	1.75	3.25	1.75	2.25	1.2

*Values represent average of questionnaire score values in each group

Conclusion



- Inflammadry Test was useful in identifying the patients with inflammatory DED in terms of targeting the cause and guiding their treatment with low dose hydrocortisone, which also had a good safety profile.
- Combination of hydrocortisone and artificial tears had greater impact on subjective and objective improvement of DED, with no difference in the impact of the different artificial tears.