

## THE IMMEDIATE EFFECT OF A PRESERVATIVE HYALURONIC ACID AND CARBOXYMETHYLCELLULOSE SODIUM EYE DROP ON TEAR FILM ASSESSMENT AND SUBJECTIVE RESPONSE

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### ABSTRACT

**Aims:** The purpose of the study is to evaluate the short-term effect usage of a preservative HA and CMC eye drop on tear film quality and participants' responses in terms of symptoms and clinical signs before and after the instillation of the eye drop.

**Methodology:** 30 participants were recruited and randomly instilled with preservative HA and CMC eye drops on both of the eyes and the TBUT, tear ferning pattern and conjunctival redness were recorded together with the response from Ocular Surface Disease Index (OSDI) and Ora Calibra™ Drop Comfort Scale and Ora Calibra™ Ocular Discomfort, and 4-Symptom questionnaire of the participants.

**Results:** From the study, the mean of tear breakup time (TBUT) was  $4.30 \pm 1.54$  and  $4.13 \pm 1.53$  (baseline) for HA and CMC respectively. After 60 minutes, the mean was  $4.80 \pm 1.30$  ( $P=0.003$ ) and  $4.60 \pm 1.45$  ( $P=0.006$ ) for both HA and CMC respectively. When comparing to each based from baseline with 5,15 and 60 minutes after instillation, both HA and CMC show no significant difference ( $P>0.005$ ). Other parameters, conjunctival redness and subjective response does give any significant difference.

**Conclusion:** Both preservative HA and CMC eye drops able to provide immediate TBUT while comfort are approximately good for both eye drops.

**Keywords:** eye drops, preservative, hyaluronic acid, carboxymethylcellulose sodium, tear film quality

