The value of a phenol red impregnated thread for differentiating between the aqueous and non-aqueous deficient dry eye.

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Abstract
To determine the clinical viability of a phenol red impregnated cotton thread in differentiating between normal, aqueous deficient and non-aqueous deficient dry eyes. Subjects were recruited on the basis of subjective symptoms, tear stability, rose bengal staining, Schirmer test, conjunctival hyperaemia, patency and number of meibomian glands, presence of mucin strands, appearance of lower tear meniscus. Based on the outcome of the tests, subjects were categorised as either aqueous deficient dry eyes, non-aqueous dry eyes or normals. Subjects were randomised and a thread was applied by inserting into the lower fornix of the right eye and leaving the thread in place for 120 sec. All data was collected under similar ambient conditions. After gathering all the data, the codes were broken. Mean (+/- S.D.) thread wetting values were, all dry eyes (n = 59) 18.4 mm (5.9). Aqueous deficient dry eyes (n = 35), 15.5 mm (4.6). Non-aqueous deficient dry eyes [n = 24], 22.7 mm (5.0). For the normals (n = 38), 19.4 mm (5.0). Differences between (i) normals and aqueous deficient dry eyes and (ii) aqueous deficient and non-aqueous deficient dry eyes were significant (p = 0.01). Difference between all dry eyes and normals was not significant. For the aqueous deficient and non-aqueous deficient dry eyes only, using a cut-off value of 20 mm the calculated sensitivity and specificity values were 86% and 83% respectively. This cotton thread test can effectively differentiate between aqueous deficient and non-aqueous deficient dry eye.

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