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# Combination of the Schirmer I and phenol red thread tests as a rescue strategy for diagnosis of ocular dryness associated with Sjögren's syndrome.

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#### Abstract

**PURPOSE:** To define a combination of the Schirmer I and phenol red thread (PRT) tests that improves the screening of patients with ocular sicca syndrome.

**METHODS:** The PRT test was performed before (PRT1) and after (PRT2) the Schirmer I test, in both eyes of 143 patients complaining of ocular dryness secondary to Sjögren's syndrome or sicca asthenia polyalgia syndrome (SAPS; 72 and 71 patients, respectively), and in 40 control patients. Groups were matched by age and sex. After determining the best cutoff values using the receiver operating characteristic procedure, several combinations of PRT and Schirmer I were assessed to improve the predictive values of the procedure.

**RESULTS:** The best cutoff value for PRT2, estimated at 15 mm, provided a satisfying match between sensitivity and specificity indexes (68% and 90%, respectively), similar to those obtained with the Schirmer I test. If PRT1 alone was ineffective to screen SGS from control patients, the comparison between PRT1 and PRT2 (so-called "DeltaPRT") was found as a good marker to detect patients with persistent tear reflex. Interestingly, the combination of positive Schirmer I, PRT 2, and/or  $\Delta$ PRT tests was found to be highly predictive of severe ocular sicca syndrome.

**CONCLUSIONS:** The combination of the Schirmer I and PRT tests strongly improves the screening procedure to detect patients with ocular dryness related to Sjögren's syndrome or SAPS. It could be more widely used in daily clinical practice, aside from the Schirmer I test, to optimize the work-up of patients presenting with dry-eye subjective signs.

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