Precision of conjunctival provocation tests in right and left eyes

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Background: *Conjunctival provocation tests (CPTs) are used for assessing the efficacy of antiallergic treatments, but their reproducibility is not well characterized. A study was carried out to assess the reproducibility of CPTs and the release of mediators during CPTs.*
Methods: *Both eyes of 30 grass-pollen–allergic patients were challenged with threefold increasing concentrations of a standardized orchard grass pollen extract. The positivity of the CPT was assessed by a cumulative symptom score. The release of mediators was examined by means of histamine (radioimmunoassay), prostaglandin D_2 and leukotrienes C_4 and D_4 (enzyme immunoassay).*
Results: *There was a significant correlation between the concentrations of allergen inducing a positive CPT in both eyes ($p < 0.0001$, Spearman). All but one patient had a significant release of at least one mediator. After allergen CPT there was a significant release in both eyes in 13 of 20 patients for prostaglandin D_2, 11 of 19 for leukotrienes C_4 and D_4 and 15 of 18 for histamine. The correlations between the levels of mediators released during diluent and allergen challenges in both eyes were significant for prostaglandin D_2 (diluent and allergen challenges) and leukotrienes C_4 and D_4 (allergen challenge).*
Conclusion: *Considering the whole group of patients, CPT is reproducible in both eyes, but the results are less satisfactory when patients are examined individually. (J ALLERGY CLIN IMMUNOL 1993;92:49-55.)*

Key words: *Conjunctival challenge, allergen, histamine, PGD_2, LTC_4*

Conjunctival provocation tests (CPTs) are being used to assess the efficacy of various antiallergic treatments including H_1-blockers and specific immunotherapy.[1-8] The positivity of the challenge may be assessed by symptom and/or medication scores,[9, 10] and more recently, by the measurement of inflammatory mediators released in tears[11, 12]; the enumeration of cells should be usually obtained by scraping.[13, 14] It has been shown that CPTs are highly reproducible when symptom scores are examined,[9] but the reproducibility of the doses inducing a positive CPT result or of the release of mediators during CPT has never been published.

Abbreviations used
CPT: Conjunctival provocation test
IR: Index of reactivity
LT: Leukotriene
PGD_2: Prostaglandin D_2

A study was carried out in 20 patients allergic to grass pollens to assess the reproducibility of symptoms and mediators released during CPTs with grass pollen extracts.

METHODS

Patients

Twenty patients allergic to grass pollens who ranged in age from 21 to 31 years (13 men) were studied after informed consent and approval by the ethical committee of the hospital were obtained. Subjects were selected on the following criteria. All had symptoms of rhinoconjunctivitis between April and July during the grass pollen season. The duration of symptoms ranged from 2 to 14 years. All patients had a positive prick test result to a 100 index of reactivity (IR) per milliliter of

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