216 Characterization of Ocular Reactions During Aspirin Challenge in Patients With Aspirin Exacerbated Respiratory Disease

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RATIONALE: Clinical grading of ocular reactions during aspirin challenges has been problematic. We attempted to objectively evaluate these reactions using new methodology.

METHODS: 6 patients with aspirin-exacerbated respiratory disease (AERD) were studied. At baseline and at time of reaction to aspirin patients completed a rating scale of ocular symptoms. Photographs were taken with an Olympus C500 digital camera with ocular macro-settings and measurements with the PR-650 Spectrascan Colorimeter, an instrument which quantifies conjunctival erythema, were obtained. Finally, tears were collected with Schirmer strips. Tear samples were labeled using Prolytica™ (Stragagnge) reagent with either heavy (O18) or light (O16) isotopic tags. LC separation was performed on a laser pulled 100 um ID C18 column. The MS/MS analysis was performed on an Agilent LC/MSD Trap ion trap mass spectrometer.

RESULTS: The oculary rating score showed that from baseline to aspirin reaction symptoms of itching, burning, and tearing were highly variable and independent of each other. Spectrascan measurements in 3 of the 6 patients demonstrated a significant increase in conjunctival injection. Data obtained from mass spectrometry on the tear samples was searched with Mascot using the NCBInr database. This resulted in the identification of 10 proteins such as lacrimal proline rich protein 4, lacritin, lactotransferrin, magmogloblin, and prolactin-inducible protein.

CONCLUSIONS: The ocular reactions during an aspirin challenge in patients with AERD are clinically variable and molecularly complex. Protein profiling is a novel approach for characterization of protein expression in tears.

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217 Objective Evaluation of Allergic Reactions in the Eye Using the EES (Erythema, Edema, Sensation) Method

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RATIONALE: Since allergic reactions in the eye are usually evaluated by subjective techniques, we applied more precise, objective measurements of erythema, edema, and sensation, before and after conjunctival allergen challenge (CAC).

METHODS: Ten allergic subjects were evaluated before and 5 minutes after CAC. Conjunctival erythema was measured objectively with a spectroradiometer, eye lid edema was measured with a millimeter reticule in the eye piece of a slit lamp microscope, and ocular surface sensation was measured with the aesthesiometer of Cochet and Bonnet. Subjective measurements were carried out by observation (erythema and edema), and by questioning the subject (itching).

RESULTS: Objective measurements of conjunctival erythema and eyelid edema increased significantly after CAC (p<0.01, p<0.001, respectively). Subjective measurements of conjunctival erythema, conjunctival edema, and itching also increased significantly after CAC (p<0.001). The objective measurement of ocular surface sensation decreased after CAC, but the change was not statistically significant. After treatment with a vasoconstrictor-antihistamine eyedrop, a significant decrease in conjunctival erythema could be measured both objectively (p=0.005), and subjectively (p<0.001).

CONCLUSIONS: Ocular allergic reactions and the effects of antiallergic treatment can be measured objectively by the EES Method, and subjectively, by observation and questioning the subject.