Possible Presence of RANTES in Tears of Patients with Allergic Conjunctivitis

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Dear Sir,

RANTES has been considered to play an important role in various immune and allergic disorders [1], since RANTES is a potent chemoattractant for various important inflammatory cells such as eosinophils [2] as well as memory T cells and monocytes [3], potentially recruiting these cells from the circulation to an inflamed focus. In allergic conjunctivitis, involvement of eosinophils and T cells were also reported [4, 5]. To extend our understanding of the participation of eosinophils and T cells in relation to the possible involvement of RANTES in the pathogenesis of allergic conjunctivitis, we examined the presence of RANTES in tears by a sandwich ELISA. In brief, an ELISA kit (R&D Systems, USA) employing two antibodies to distinguish different epitopes of RANTES was used for the present assay. A 96-well plate was treated with anti-RANTES monoclonal antibody, and then 100 µl of the standard solution or the tested sample was added, followed by 50 µl of horseradish peroxidase-labeled anti-RANTES antibody. The absorbance was determined at 450/540 nm using a Titertek Multiscan MCC/340 spectrophotometer (ICN Co.). A calibration curve was generated using the standard solution, and the RANTES concentration in each sample was determined from this curve. Tears were obtained by micropipette method as previously described [4]. By reason of the scanty amount of tears, diluted tears were applied for ELISA assay (minimum detectable dose = 78.0 pg/ml) in this study.

In this assay condition, RANTES was detectable in the diluted tears of 3 of 6 patients (mean $\pm$ SE, 274.67 $\pm$ 47.96 pg/ml), while no presence of RANTES in the tears of any cases of the 7 normal controls was observed

($p < 0.05$, fig.1). These findings suggest that RANTES might play a key role in the involvement of eosinophils and T cells in allergic conjunctivitis. We recently examined the effect of RANTES on radical oxygen products from eosinophils [6]. RANTES treatment resulted in the enhancement of peak value and integrated value of radical oxygen species generated by

eosinophils determined by luminol-dependent chemiluminescence [6]. Therefore, RANTES might play a major role in the pathogenesis of allergic inflammation, since RANTES not only attracts eosinophils to the inflamed site [3] but also up-regulates the expression of CR3 (Mac-1:CD11b), causes the release of eosinophil cationic proteins, makes eosinophils hypodense [7], and augments the oxygen radical production from eosinophils as we previously reported [6]. In this context, it is of great interest to clarify the source of RANTES production in the pathogenesis of allergic conjunctivitis. The precise mechanism of involvement of RANTES in the pathogenesis of allergic conjunctivitis will be further investigated.

References

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- Fig.1. RANTES was detectable in the diluted tears of 3 of 6 patients with allergic conjunctivitis (AC) (mean $\pm$ SE, 274.67 ± 47.96 pg/ml), while no presence of RANTES in the tears of any of the 7 normal controls (Control) was observed.
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