



POSTER PRESENTATION

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# Serum imbalance between the extracellular matrix metalloproteinases (MMP-2 and MMP-9) and their tissue inhibitor (TIMP-1) in patients with food and airborne allergy

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## Background

Comparison of the concentration of MMP-2 and MMP-9 and TIMP-1 in patients with food and airborne allergy as compared to patients without allergy.

## Methods

The study was performed in 80 individuals: 60 patients with exacerbation of allergic disease (30 with food allergy and 30 with airborne allergies) and 20 healthy subjects. We examined the serum concentrations of soluble forms of MMP-2, MMP-9 and TIMP-1. Determination of these parameters was performed by ELISA. For MMP-9 and TIMP-1 was used kit from Bender MedSystems, for MMP-2 of RayBiotech. A statistical study results was performed using the computer program STATISTICA 9.1.

## Results

The concentrations of sMMP-2 and -9 in the groups of patients with food and airborne allergy and control groups were, respectively,  $153,8 \pm 97,1$  and  $198,8 \pm 51,4$  ng/ml;  $136,3 \pm 41,2$  and  $184,9 \pm 38,8$  ng/ml, and  $119,5 \pm 12,5$  and  $121,6 \pm 25,5$  ng/ml. sMMP-2 demonstrated statistically significant differences between the group with food allergies and the control group ( $p = 0.0309$ ), no significant differences between the group of airborne allergy and the control group, as well as between groups of airborne and food allergies (for  $p = 0.4225$  and  $p = 0.1473$ ). Differences of sMMP-9 levels were significantly higher in the group of airborne and food allergies than in the control group

(both  $P = 0.0000$ ). There was no significant difference between the group of patients with airborne and food allergy ( $p = 0.3952$ ). The concentrations of sTIMP-1 in groups of patients with food allergy and airborne were significantly higher than those in the control group (respectively  $p = 0.0000$  and  $p = 0.0003$ ) and were in the group with food allergies  $164.3 \pm 59.2$  ng/ml; airborne allergy  $\pm 145.4$   $50.1$  ng/ml, whereas in the control group  $92.4 \pm 26.7$  ng/ml. There was no statistically significant difference sTIMP-1 concentrations between the group of patients with airborne and food allergy ( $p = 0.2458$ ).

## Conclusion

MMP-2 and MMP-9 and TIMP-1 were significantly higher in patients with food allergy than in the control group. A similar observation (except for concentrations sMMP-2) also applies to a group of patients with airborne allergy. The results of this study suggest an important role of MMPs and TIMPs in the pathogenesis of allergic inflammation.

## Disclosure of interest

None declared.

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