The role of enzymes matrix metalloproteinases 2 and 9 in the pathogenesis of food allergies

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Aims: Interactions between immune and inflammatory responses may play a crucial role in the development and progression of allergic diseases, autoimmune and chronic progressive inflammatory disease. The matrix metalloproteinases (MMPs) play a key role in angiogenesis together with migration and/or invasion of endothelial cells in surrounding stroma and tissues. MMPs are involved in degrading of extracellular matrix (ECM), which consequently lead to facilitate invading of endothelial cells and in the same time stimulate the releasing of extracellular matrix-sequestered proangiogenic factors (ECM-sequestered proangiogenic factors), integrins, adhesion receptors and different growth factors and receptors. The members of the matrix metalloproteinase (MMP) family are involved in angiogenesis and vascular remodeling, consequently leading to the progression of numerous vascular diseases such as atherosclerosis, varicose veins, hypertension, abdominal aortic aneurysm, preeclampsia, etc. The aim of this study was to examine the values of enzyme matrix metalloproteinase-2 and 9 in urine from children with described food allergies.

Methods: We analyzed 30 patients with children with described food allergies. The method of enzyme immunoassay (ELISA) was used to determine enzymes expression of matrix metalloproteinase-2 and 9 (MMP-2 and 9).

Results: The children with described food allergies had a statistically significantly increased level of MMP-2 and 9 in the urine in comparison with healthy volunteers.

Discussion: Matrix metalloproteinases (MMPs) play a key role in the physiology of connective tissue development, in morphogenesis and in wound healing and their unregulated activity has been implicated in numerous disease processes including arthritis, tumor cell metastasis and atherosclerosis.

Conclusion: Our data has showed a large increase in the enzyme MMP-2 and 9 in the urine of children with described food allergies, which may be an easy marker for the monitoring of the development of food allergies in children.

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