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The role of MHC peptides in the regulation of lymphocyte apoptosis

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We have worked out a method for the extraction of peptides bound to MHC molecules from the tissues of different parenchyma organs. These peptide complexes were investigated by chromatography and its common structure was determined. The purpose of the study was the influence of MHC peptide complexes from thymus and kidney on apoptosis process in thymocytes, spleenocytes and blood lymphocytes by physiologic conditions, the changing of the basic regulative systems and autoimmune response. The apoptosis of lymphocytes was determined by morphology of cell nuclei, chromatin fragmentation, activity of Ca, Mg-endo-nuclease, characteristic staining by Hoechst 33342, expression of bcl-2, p53 into cells and CD95/Fas on cell surface. It was found out that MHC peptide complex from thymus and kidney blocked the apoptosis in thymocytes, spleenocytes and blood lymphocytes which was induced by dexamethasone, calcium ionophor A23187, 12-O-tetradecanoyl-13-acetat and EDTA. The main difference of these complexes action was an ability of kidney complex to block an apoptosis in intact thymocytes. During experimental autoimmune nephritis treatment by peptide complexes led to the apoptosis of some lymphocyte subpopulations in thymus, spleen and blood. Simultaneously we observed the improvement of kidney morphology and nitrogen excretion. Obtained results display an ability of the using of MHC peptide complexes as potential immunotropic preparations.

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Using of immunomodulators in children with recurrent respiratory viral infection

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One of the most important problems we face is complicated case of recurrent-respiratory viral infection (RV). The aim of the study was to evaluate effect of new

native immunomodulator plaferon LB in children with recurrent bronchoobstructive diseases comparing with placebo. Plaferon LB (injections - 0,5 mg once a day, during 5 days) was used in 40 patients (age under 3 years) with complicated RVI (bronchial obstruction). The following investigations were carried out: cellular (CD3, CD4, CD8) and humoral (IgA, IgG, IgM) immunity, interferon reactions of leukocytes. The significant changes of immunological parameters in-patients with complicated RVI were found (decreased T3 and T4, significant deficiency of Ig A and Ig G, and decreased production of interferon by leukocytes. In contrary to placebo, treatment with Plaferon LB caused an early improvement of clinical signs (wheezing, dyspnea, cough, physical changes in lungs) and immunological indices. Plaferon LB significantly increased total amount of T lymphocytes in blood, restored impaired balance of cell T subpopulations (helper & suppresser cells) and improved production of interferon by leukocytes. Treatment with plaferon does not affect on humoral immunity data. We found that usage of immunomodulator in patients affected with complicated cases of RVI with abnormal immune response plays an important role in their immune rehabilitation.

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Serum and sputum rantes in asthmatic children

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RANTES is a chemokine that induces chemotaxis of inflammatory cells involved in allergic inflammation. This study was designed to evaluate serum and sputum RANTES levels in childhood asthma and its role in monitoring disease severity and activity. Thirty-two asthmatic children with different grades of severity were recruited from the Pediatric Allergy and Immunology Clinic and Emergency Department of Ain-Shams University Children's Hospital. RANTES was measured by quantitative sandwich enzyme immunoassay in serum and spontaneously obtained sputum samples within 24 hr of asthma exacerbation (serum from all and sputum from 12 only) and during steady state asthma (n=17 and 5 respectively), as well as in sera of 20 healthy control children. The mean serum RANTES (pg/ml) was significantly higher

in asthmatic children during asthma exacerbation than in controls (76800.0 ± 28635.2 versus 62500.0 ± 20645.8, p<0.05). This was evident in patients with severe persistent asthma (79727.3 ± 25240.2 pg/ml). During steady state, the mean serum RANTES remained higher though insignificantly different from controls (72527.8 ± 28037.5 pg/ml). No significant differences were observed in RANTES between asthma exacerbations and steady state. Sputum RANTES was however significantly higher during exacerbations and the levels correlated positively with the sputum percent eosinophil count (r=0.53, p=0.05). Steady state serum RANTES tended to be higher the more severe the grade of asthma was: 57500.0 ± 28831.4 pg/ml in mild, 71166.7 ± 29270.3pg/ml in moderate and 82083.3 ± 26852.2 pg/ml in severe asthma in which case the level was significantly higher than controls. These results reflect the importance of RANTES in the late phase allergic response in asthma. Spontaneously obtained sputum can be considered a safe and reliable method for monitoring RANTES levels and for following the inflammatory process in asthmatics.

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Monokine-inducing activity of *Yersinia pestis* lipopolysaccharide and its detoxified derivatives

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Objective of the study was to estimate influence of the *Yersinia pestis* lipopolysaccharide (LPS) detoxification on its monokine-inducing activity. The detoxified derivatives — deacylated LPS (DLPS) and dephosphorylated LPS (LPSP) were obtained respectively by O-deacylation and dephosphorylation by initial LPS preparation. LPS, DLPS and LPSP were used as inducers of monokines that mediate macrophage-neutrophil cooperation. Monokines synthesized by a total population and different subpopulations of intact and immune peritoneal macrophages of experimental animals were obtained. Peritoneal macrophage subpopulations of intact and immune animals were isolated by absorption and elution at different temperatures (2, 10, 25 and 37 °C) and signed A, B, C and D respectively. The relative content of these