

63.

Effect of interferon gamma stimulation on expression of intercellular adhesion molecule 1 (ICAM-1) on alveolar macrophages in patients with non-small cell lung cancer

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Background: An impairment of in vitro cytotoxicity and tumoricidal function of alveolar macrophages (AMs) in patients with lung cancer was reported in number of studies. Modulation of ICAM-1 expression may influence the interaction between AMs and lymphocytes T and may participate in the deterioration of AMs function. Aim of the study was to evaluate expression of ICAM-1 on AMs after stimulation with IFN γ in patients with non-small cell lung cancer (NSCLC). **Material and Methods:** The study was performed in 13 patients with NSCLC, 6 patients with various non-malignant pulmonary diseases and 6 healthy volunteers. In patients BAL was performed during diagnostic bronchofiberscopy. AMs were isolated by adherence and then cultured with/without IFN γ for 24 hours. An expression of ICAM-1 on AMs was analyzed by flow cytometry. Degree of the increase of ICAM-1 expression on AMs after stimulation with IFN γ was estimated as reactivity ratio (RR) : median of fluorescence intensity after IFN γ stimulation /median of fluorescence intensity in control culture. **Results:** Stimulation with IFN γ resulted in an increased expression of ICAM-1 on AMs in all studied groups ($p < 0.05$). The mean value of RR was 1.12 ± 1.16 in patients with NSCLC and 1.49 ± 0.35 or 1.65 ± 0.45 in patients with other lung diseases and healthy volunteers respectively. Reactivity ratio was significantly lower in patients with NSCLC as compared to healthy volunteers ($p = 0.002$) or the other patients ($p = 0.022$). **Conclusion:** The results of the current study suggest that the impairment of AMs reactivity to IFN γ stimulation in lung cancer patient involves lower expression of ICAM-1 as compared to healthy subjects and patients with other, non-malignant lung diseases.

64.

Clinical application of immunocorrective effects of low frequency homogenous magnetic field

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Children with recurrent respiratory infections (N=60, age 4-18 years) were treated routinely (N=20) or additionally received (N= 40) 10 daily expositions to low frequency magnetic field (Viofor JPS generator, programme M1P2, frequency 180 Hz, magnetic induction B=3.2 μ T, ring applicator around the chest). Clinical and immunological evaluation performed before and after the treatment showed significant clinical improvement (reduction of the number, severity and duration of infective episodes) in the exposed group, in which, in contrast to the routine group, also normalization of T lymphocyte features (mitogenic response, IL-2 receptor saturation, immunoregulatory suppressive activity) and monocyte activity (IL-1 β versus IL-1ra production) was observed in the microcultures of mononuclear cells (PBMC) isolated from the blood. Additionally, the in vitro effects of exposition of PBMC to magnetostimulation was tested. The PBMC microcultures

set up before the treatment were exposed twice (at the first and the second day of culturing) for Viofor JPS M1P2 programme, using "S" (B=4.5 μ T) or "M" (B=13.5 μ T) spools placed inside the incubator. Only the exposition to the "M" spool resulted in the significant increase of T cell response to PHA, T cell suppressive activity and monocyte activity (IL-1 β production). The results show that homogenous magnetic field may exert immunocorrective influence improving the defensive functions of immune system.

65.

Antineutrophil cytoplasmic antibodies (ANCA) and antinuclear antibodies (ANA) in cystic fibrosis patients

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Cystic fibrosis is most frequent genetic disorder in caucasian population caused by CTRF gen mutation. CTRF protein defect leads to increased susceptibility to infections and induce chronic local and systemic inflammatory reaction. Chronic inflammation is connected to autoimmunological phenomena. The aim of the study was to evaluate the presence and the level of ANCA and ANA autoantibodies in sera of CF patients. Sera from 15 patients were examined. Indirect immunofluorescence on granulocyte smear fixed with ethanol or formalin (ANCA) or Hep-2 cell (ANA) was estimated. Presence of atypic ANCA was detected in 5 patients. In 2 cases both cANCA (antiPR3) and pANCA (antiMPO) were detected. 12 patients presented ANA antibodies or anticytoplasmic antibodies. In most cases antibodies detected titres were low (1:100). In 3 cases antibody titer very was high (1:3200). In most cases coarse granular pattern was detected. The result demonstrate that autoimmunological phenomena exist in CF patients and may play role in the pathogenesis of the disease.

66.

Humoral immune response to mycobacterial antigens in different forms of tuberculosis in children (chtb)

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It is widely accepted that immunopathology of TB is largely regulated by cell-mediated immune response, although the knowledge of antimycobacterial antibody production at various stages of infection and disease may help to elucidate the complex host - pathogen interaction. The aim of our study was to evaluate humoral immune response against mycobacterial antigens in chtb. 183 serum samples were examined: (112 with chtb - 81 primary, 31 postprimary cases) and 71 control samples (asthma, non-specific pulmonary infections, healthy children). ELISA based assays detecting IgG, IgA and IgM antibodies against antigens: 38 kDa and 16 kDa, 38kDa and lipoarabinomannan, and A-60 were used. Mean IgG level was significantly higher in chtb compared to controls ($p < 0.001$). IgG production was very low in primary TB compared to postprimary ($p < 0.0001$). IgM level did not differ between all examined groups For cut of established at 0.5 OD index (ROC curve), quantified level of sensitivity of 38kDa based tests



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