Title: Endothelial dysfunction and arterial rigidity in patients with bronchial asthma out of an exacerbation

Body: Objective: to study interrelation of endothelial dysfunction and arterial rigidity in patients with the bronchial asthma (BA). Indicators of arterial rigidity of an aorta estimated by means of an indirect arteriography. Vasomotor function of an endothelium investigated on the ultrasonic device VividTM-S6. Assessment of neutrophil elastase (NE) in peripheral blood plasma was performed by ELISA. 126 patients with BA out of a disease exacerbation have been surveyed. The 1st group included 29 patients with mild BA, the 2nd group-32 persons with middle BA, the 3rd group-40 people with severe non-steroid BA. 25 patients are included in the 4th group with steroid BA. The group of control-27 healthy volunteers. Elevation of NE levels in the peripheral blood was associated with increased severity of the disease. The highest rates were registered in the 4th group–451.7[208.6;676.2]. Changes in vessel tone regulating function of endothelium in assay with a reactive hyperemia in the form of depression of endotelium-dependent vasodilatation (EDV) was lower by 10%, and changes as well as alterations of mechanical properties of aorta become to be more prominent along with disease progression. The highest values of PWVao were found in the group of patients with steroid BA. Correlations between the levels of NE in the peripheral blood and EDV(r=-0.62) were revealed. Also, interrelations between the following parameters have been confirmed: PWVao and EDV(r=-0.53); EDV and AIx(r=-0.47). Results of multiple linear regression showed that the most significant predictors in development of the increased arterial rigidity are the age and duration of BA (their contribution is 45%), and decrease of EDV (21%).