

Early diagnosis of occupational asthma is important especially for the prognosis of this disease. The confirmation of the diagnosis of occupational asthma is sometimes difficult using diagnostic methods available nowadays. That is why searching new methods is very important.

Analysis of exhaled breath condensate (EBC) by liquid chromatography combined with mass spectrometry enables the separate detection of cysteinyl leukotrienes (LT) - LTC₄, LTD₄, LTE₄; LTB₄ and 8-isoprostane. If patients with occupational asthma and controls were compared, only LTC₄ was significantly higher among all EBC parameters studied in asthmatics (despite corticosteroid treatment). This marker could be used in the future diagnostics. Monitoring of 24-hours variability of EBC parameters in patients, in whom occupational asthma is suspected, showed relatively high intraindividual and interindividual variation. It is evident therefore, that if only one daily measurement in asthmatics would be possible (which is common in articles of several authors), it should be collected in the same period of day in all persons. In negative bronchoprovocation tests significant changes of EBC parameters were not found. The evaluation of positive bronchoprovocation tests was limited by small number of patients, however in five persons from six, the elevation of LTC₄ after application of the allergen was seen.

Analysis of the induced sputum confirmed its importance for the diagnosis of allergic inflammation in the respiratory tract and especially of bronchial asthma. If non-selected sputum method was used, the elevation of eosinophils after the positive bronchoprovocation test was not found. On the other hand, using the selected sputum method, a significant average elevation of eosinophils was found after the positive bronchoprovocation test. In two patients the elevation of eosinophils (higher than 2 %) was found after the negative bronchoprovocation test too. Analysis of induced sputum could represent a more sensitive marker that might indicate subjects, in whom a positive reaction could develop after a prolonged or repeated exposure to the allergen.

In patients with previously diagnosed occupational asthma,

the elevated eosinophils in sputum were found in 25 % of analysed samples. In these asthma patients, in spite of 6.5 years withdrawal from the occupational allergen the eosinophilic inflammation in the airways was proved by this method and confirmed the persistence of the disease.