EXHALED BREATH 8-ISOPROSTANE AS A MARKER OF ASTHMA SEVERITY

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Bronchial asthma is an inflammatory disease, characterized by reversible bronchial obstruction.In about 10% of patients, however, asthma remains uncontrolled, despite intensive pharmacological treatment and good patients' compliance. In difficult-to-treat asthma uncontrolled inflammation may lead to remodelling of the bronchial wall and irreversible narrowing of the bronchial lumen. Oxidative stress is a non-specific feature of inflammation, including the one present in the airways of asthmatics. Measurement of different biomarkers in exhaled breath condensate (EBC) is a relatively new method which has raised the hope of easy, non-invasive and reliable monitoring of inflammation in the airways. This study was designed to evaluate the usefulness of EBC 8-isoprostane as a marker of severity and control of severe asthma.Twenty five severe never-smoking asthmatics (age 51.7+/-9.6 years, 17 women) were included.There were two control groups: 11 healthy never-smokers consisted a healthy controls group (age 46.6+/-12.3 years, 5 women). 16 newly-diagnosed and never-treated, non-smoking mild asthmatics consisted a never-treated asthma control group (age 32.0+/-8.5 years, 9 women). Concentrations of 8-isoprostane in EBC were measured by a specific enzyme immonoassay. There were no differences between severe asthma (SA) and healthy control (HC) or never-treated asthma (NTA) groups in concentrations of EBC 8-isoprostane (median and interquartile range: 4.67; 2.50-27.92 vs 6.93; 2.5-12.98 vs. 3.80; 2.50-10.73, respectively, Fig.2). Also there were no differences between patients with reversible and irreversible obstruction within the SA group, however the tendency was noticed to higher concentrations of eicosanoids in irreversible asthma. We found a correlation between EBC LTB4 and 8-isoprostane (r=0.75, p=0.0001). Although our results do not neglect the possibility of increased concentrations of eicosanoids in asthma in general, the fact that they are not increased in severe and symptomatic asthma, uncontrolled despite optimal treatment, disqualifies the measurements of EBC 8-IP for asthma monitoring