

**SMALL AIRWAY OBSTRUCTION IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE - POTENTIAL PARAMETERS FOR EARLY DETECTION**

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The impulse oscillometry IOS is recognized as a complementary method to spirometry in diagnosis of obstructive pulmonary disorders. This study aimed to evaluate the usefulness of FEF<sub>25-75</sub> - FEV<sub>1</sub>/FVC and R<sub>50</sub>-R<sub>90</sub> in the assessment of small airway obstruction in Chronic obstructive pulmonary disease (COPD) patients. One hundred forty nine patients were investigated. Control group: stable COPD group. Anthropometrical measurements were obtained. Spirometry and IOS method were used to assess pulmonary function. Sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) were evaluated. Most of the patients were men aged over 40, characterized by overweight. Prevalence of small airway obstruction detected by FEV<sub>1</sub>/FVC, FEF<sub>25-75</sub> and R<sub>50</sub>-R<sub>90</sub> was statistically different between analyzed groups. Significant decrease in FEV<sub>1</sub>/FVC ratio, FEF<sub>25-75</sub> and increase of R<sub>50</sub>-R<sub>90</sub> depends on airway obstruction severity. Sensitivity of R<sub>50</sub>-R<sub>90</sub> with regards to FEF<sub>25-75</sub> was 0.85, specificity was 0.85, PPV was 0.85 and NPV was 0.85. In conclusion, FEV<sub>1</sub>/FVC ratio and R<sub>50</sub>-R<sub>90</sub> are useful parameters in the assessment of small bronchi obstruction and in early detection of airway obstruction. Specifically, R<sub>50</sub>-R<sub>90</sub> can be used for detection of mild lung injury and FEV<sub>1</sub>/FVC ratio to confirm obstruction.