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Title: Monitoring of airway resistance (Raw) in exacerbation of asthma

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Body: Background. While clinicians and researchers often use spirometry data in asthma exacerbation evaluation, it is our perception that plethysmography data is not given the right importance. Aim. The aim of this study was to show that in exacerbation of asthma besides decreasing of spirometric value (FVC, FEV1, FEF50, PEF) increasing of airway resistance (Raw) is also found. Methods. The research included 35 patients with asthma, (age range 23-80) in exacerbation phase of disease. In all patients we measured spirometry and plethysmography, and also included proportioned therapy. After one month, spirometry and plethysmography tests were repeated. All patients reported about symptom reduction at the end of one month. Results. After inclusion of therapy all spirometry values were significantly higher: FVC ($p<.01$), FEV1 ($p<.01$), FEF50 ($p<.01$), PEF ($p<.01$). We also found significant change in reduction of airway resistance Raw ($p<.05$). Also, there was significant negative correlation between FEV1 and Raw values r(FEV1,Raw) = -. 403, that was even higher after one month use of therapy r(FEV1,Raw)= -. 641. After implemented therapy 85,71 % of patients reported feeling better. Conclusion. With expected increase of spirometry values (objective parameters) and subjective enhance after implemented therapy, results show that in asthma there is a negative correlation between airway resistance (Raw) and level of obstruction. When obstruction is higher (FEV1 is lower), resistance is higher. Results also suggest that Raw is a variable value, and that adequate therapy affects its decrease.