

**THE EVALUATION OF SPIROMETRY TESTS DURING FORCED  
EXPIRATION AFTER THE APPLICATION OF SALBUTAMOL IN  
RELATION TO  $\beta$ 2 ADRENERGIC RECEPTOR GENE  
POLYMORPHISM**

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**Introduction:** We have observed a very faint bronchial innervation by the sympathetic system, although, a significant simultaneous expression of adrenergic receptors, in particular  $\beta$ 2, is present in the whole airways. This explains a very important role of  $\beta$ 2 agonist in treatment of bronchi constriction, they are the strongest bronchodilatation medicine. We have been finding information about the relationship between  $\beta$ 2ADR gene polymorphism and the answer treatment after the use of  $\beta$ 2agonists. This means, that the function of  $\beta$ 2 ADR depends on its isoforms. We can find relationship objectively in vivo, estimating the spirometric value before and after the use of the salbutamol in reference to variant of  $\beta$ 2ADR gene polymorphisms.**Methods:** The study involved 148 healthy male volunteers. After the examination of the gene polymorphism of  $\beta$ 2-adrenergic receptor ( $\beta$ 2-ADR) at nucleotide position 46 and 79 (g.46 and g.79) in all subjects we performed the spirometry testing. The pulmonary function we checked twice a day; before and 15 min after the administration of salbutamol.**Results:** All subjects had normal the basic value of spirometry. The use of salbutamol in healthy people significantly increased spirometric values in all groups determined of  $\beta$ 2ADR gene polymorphisms . Analysis of the values of spirometry, conducted in the particular groups shown significant increase only of PEF (g.46AA and g.79CC).**Conclusions:** We think that our results have shown the important but not the only way to understand the answer to the treatment of  $\beta$ 2agonist. Perhaps affirmed significant increase of PEF also depends from the basic values of spirometry tests.