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| **Oscillometry complements spirometry in detecting reversible asthmatic airways obstruction (ATLANTIS)** |
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| **Introduction/Aim:**  Spirometry with reversibility testing is the guideline-recommended first line test for asthma diagnosis. Oscillometry could provide an easier method with potentially equivalent sensitivity. The objective was to compare changes in impulse oscillometry X5 and R5, and FEV1 after administration of a bronchodilator in the Assessment of Small Airways Involvement in Asthma (ATLANTIS) study.  **Methods:**  Spirometry and oscillometry data from 520 patients with a clinical diagnosis of asthma in the ATLANTIS study was used in whom bronchodilator reversibility testing was performed at baseline. Reversibility was defined as an increase of ≥200 ml and ≥12% in FEV1. Oscillometry reversibility was defined as an increase in X5 ≥44% and/or a decrease in R5 ≥32% (according to revised ERS recommendations). Pearson correlations were calculated between absolute changes in spirometry and oscillometry measures.  **Results:**  177 (34%) patients had spirometry-defined reversibility. Of the 520 patients, 82 (15.8%) and 66 (12.7%) had X5-and R5-defined reversibility, respectively, and 111 (21.3%) had oscillometry-defined reversibility. 54 (10.4%) patients showed reversibility in both oscillometry and spirometry, 234 (45%) had reversibility in at least one of the tests and 286 (55%) showed reversibility in neither test. There were weak but statistically significant correlations between changes in FEV1, and X5 and R5 (0.36 and -0.36 respectively, p<0.01).  **Conclusions:**  Oscillometry in the ATLANTIS study identified reversible airways obstruction in approximately one in five patients, with only modest concordance with spirometry. Oscillometry could be used alongside spirometry in detecting reversible airways obstruction in asthma.  **Grant Support:**  The ATLANTIS study was funded by Chiesi Farmaceutici SpA.  **Declaration of Interest statement:**  Dave Singh has received personal fees from Aerogen, AstraZeneca, Boehringer Ingelheim, Chiesi, Cipla, CSL Behring, Epiendo, Genentech, GlaxoSmithKline, Glenmark, Gossamerbio, Kinaset, Menarini, Novartis, Pulmatrix, Sanofi, Teva, Theravance and Verona. |