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Titel des Beitrags: Prognostic value of bronchial provocation and FENO measurement for asthma diagnosis -- results of a delayed type of diagnostic study.

Abstract: To compare the prognostic value of FENO with bronchoprovocation testing when the clinical course within the first year after assessment was taken into account; to compare the prognostic values with respect to eosinophilic versus non-eosinophilic inflammatory pattern. Cross-sectional diagnostic study with a delayed-type reference standard in 393 patients attending a private practice of pneumologists with complaints suspicious of obstructive airway disease. Index test: FENO measurement. Reference standard: ratio FEV1/VC or airway resistance assessed by body plethysmography, with additional bronchoprovocation or bronchodilator testing, as well as spontaneous sputum (smear slides). This was combined with a follow-up evaluation by a structured interview after 12 months. 302 (76.8%) patients were reached for follow-up. Regarding asthma diagnosis, the area under the curve (AUC) for FENO was 0.603 (95%CI 0.528-0.677) for the whole group. With eosinophilic asthma as target, AUC increased (0.819 (95%CI 0.703-0.934)) and exceeded that of bronchoprovocation (0.711 (95%CI 0.584-0.874)). FENO showed no diagnostic value in non-eosinophilic asthma. In patients reporting wheezing and allergic rhinitis at the initial assessment, its positive predictive value was 90.9% (95%CI 62.3%-98.4) at a cut-off of 45 ppb, and 100% (95%CI 56.6-100%) at
81 ppb. FENO bears limited information when measured non-specifically in primary care, but is useful for diagnosing eosinophilic asthma. If sputum is not available, information on wheezing and rhinitis can narrow down the range of patients in whom FENO is informative. Moreover, the evaluation of the clinical value of FENO benefits from taking into account follow-up data to confirm the diagnosis.