

Publication

What defines airflow obstruction in asthma?

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Asthma guidelines from the Global Initiative for Asthma (GINA) and from the National Heart, Lung, and Blood Institute provide conflicting definitions of airflow obstruction, suggesting a fixed forced expiratory volume in 1 s (FEV₁)/forced vital capacity (FVC) cut-off point and the lower limit of normality (LLN), respectively. The LLN was recommended by the recent American Thoracic Society/European Respiratory Society guidelines on lung function testing. The problem in using fixed cut-off points is that they are set regardless of age and sex in an attempt to simplify diagnosis at the expense of misclassification. The sensitivity and specificity of fixed FEV₁/FVC ratios of 0.70, 0.75 and 0.80 versus the LLN were evaluated in 815 subjects (aged 20-44 yrs) with a diagnosis of asthma within the framework of the European Community Respiratory Health Survey. In males, the 0.70 ratio showed 76.5% sensitivity and 100.0% specificity, the 0.75 ratio 100.0% sensitivity and 92.4% specificity, and the 0.80 ratio 100.0% sensitivity but 58.1% specificity. In females, the 0.70 ratio showed 57.3% sensitivity and 100.0% specificity, the 0.75 ratio 91.5% sensitivity and 95.9% specificity, and the 0.80 ratio 100.0% sensitivity but 72.9% specificity. The fixed cut-off points cause a lot of misidentification of airflow obstruction in young adults, with overestimation with the 0.80 ratio and underestimation with the 0.70 ratio. In conclusion, the GINA guidelines should change their criteria for defining airflow obstruction.

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