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Title: Validity of the forced expiratory flow 25-75 for identification of bronchial hyperresponsiveness in a pulmonary function laboratory

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Body: Objective: To assess the validity of the Forced Expiratory Flow 25-75 (FEF 25-75) for identification of a positive bronchial hyperresponsiveness (BH). Methods: We conducted a prospective, consecutive, observational study. All subjects who underwent a spirometry and methacholine test (MT) for suspicion of BH from January 2009 to November 2010 were included. The cut-off point used for a positive FEF 25-75 was a value <60% (from the theoretical value) and for MT a PC20≤8 mg/ml. We calculated the FEF 25-75 sensitivity (S), specificity (E), positive predictive value (PPV) and negative predictive value (NPV). The data was analyzed by the SPSS 15 statistical program. Results: A total of 343 subjects were included. The mean age was 41,9 years (SD 15,4) and 103 (30 %) were male. The mean height and BMI were 163,7 cms (SD 9,7) and 26,9 Kg/m² (SD 5,1) respectively. Of them, 167 (48,7%) had a positive MT and 66 (19,2%) a positive FEF 25-75 result. We found a strong association between FEF 25-75 and MT (X², p<0,000). The S, E, PPV and NPV were 29,3%, 90,3%, 74,2% and 57,4% respectively. Conclusions: According to our data, there is a strong association between FEF 25-75 and MT. The FEF 25-75 seems to have a high E and PPV for identification of bronchial hyperresponsiveness. The FEF 25-75 might be useful to gauge the MT initial dose.