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### Do eosinophil counts correlate differently with asthma severity by symptoms versus peak flow rate?

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#### Abstract

**BACKGROUND:** Discrepancy in asthmatic assessment by symptoms and peak flow rate (PFR) is a frequent dilemma. Currently, total peripheral eosinophil count (TPEC) is under study for asthma evaluation.

**OBJECTIVES:** To explore the correlation between TPEC and asthma severity assessed by symptoms alone versus symptoms and PFR.

**METHOD:** Adults asthmatics were selected from the Asthma Clinic. Severity assessment was based on two methods: symptoms alone or symptoms and PFR. Expiratory PFR was recorded by a Wright peak flow meter. Severity levels included mild intermittent, mild persistent, moderate persistent, and severe persistent. Total peripheral eosinophil count was performed on a Celldyn-3500 counter. Data was analyzed for statistical significance.

**RESULTS:** Sixty asthmatics aged 15 to 70 years (mean = 34 years), of which 68.3% were female, were studied. Severity levels differed between the two assessment methods in 45% of the cases and showed a predominance of the moderate persistent type. Total peripheral eosinophil count ranged between 22 and 2470 cells/mm<sup>3</sup> (mean = 520 +/- SD = 393) and eosinophilia was found in 50% of the cases. Total peripheral eosinophil count showed a high positive correlation with increased asthma severity level assessed by history alone ( $r = 0.460$ ,  $P < .001$ ); more than by history and PFR ( $r = 0.328$ ,  $P < .05$ ).

**CONCLUSION:** The discrepancy between symptoms and PFR is confirmed by these results. A reliable objective parameter in asthma assessment is a continuous challenge. This study advocates the possible supplementation of TPEC as another objective parameter that might help in selecting the appropriate severity level in asthmatics