Is there a role for automated eosinophil count in asthma severity assessment?

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Abstract

Advances in asthma clinical assessment help in categorizing patients based on their clinical severity. Eosinophilia is a common laboratory finding in asthmatics. This paper explores the correlation between the clinical severity of asthmatic children and the degree of total peripheral eosinophil count (TPEC). Eighty asthmatic children referred to pediatric and allergy clinics were selected. Their clinical severity levels were assessed using the recent Global Strategy for Asthma Management and Prevention guidelines. Absolute TPEC was performed for all cases by the Cell-Dyne 3500 automated hematology counter. Correlation between clinical severity and TPEC was measured and their means in each severity group were compared for any significant association. Asthmatic children aged between 6 months and 15 years (mean = 5.9 years; 67.5% male) were studied. The clinical severity of their bronchial asthma was divided into four groups: intermittent (6, or 7.5%), mild-persistent (48, or 60%), moderate persistent (20, or 25%), and severe-persistent (6, or 7.5%). TPEC for the groups ranged between 10 and 2100 cells/mm3 (mean = 581.7 cells) and showed a very significant positive correlation with increased asthma severity (R = 0.61, p<0.001). A high linear trend of TPEC within each clinical group was found (F = 51.3, p<0.0001), and the means among each group also showed a significant increase as asthma severity level increased (F = 19.98, p<0.001). The study documents a significant positive correlation between the clinical severity of bronchial asthma and eosinophil counts. The authors advocate the use of this simple and sensitive laboratory test as a significant adjunct objective technique in the assessment of asthma severity and management