LETTERS TO THE EDITOR

Serum eosinophil cationic protein measurements in monitoring pulmonary inflammation in asthma

EDITOR,—Based on their findings that serum eosinophil cationic protein (ECP) concentrations are increased in asthmatics compared with controls, and that ECP concentrations are related to disease activity, Koller and coworkers propose that ECP may be used for monitoring inflammatory activity in asthma.

Following the same line of reasoning, the level of airways hyper-responsiveness was advanced as a putative marker of disease activity in asthma in 1984.1 In cross-sectional epidemiological studies, however, it was shown later that airway responsiveness, averaging more hyper-responsiveness than do normal subjects, the amount of overlap of airway responsiveness levels between the groups was large.2 In long term prospective studies of patients with asthma, the degree of airways responsiveness showed hardly any relationship to disease activity in the individual patient.3 Thus, a statistically significant relationship of a putative marker to disease activity in selected groups of patients does not imply that the variable under study is a useful marker of disease activity in the individual patient in clinical practice.4 The same may apply to ECP concentrations as a marker of asthma activity. The interesting findings of Koller and coworkers, in my opinion, do not allow the conclusion that ECP is useful as a marker of disease activity in asthma. Before such a conclusion can be drawn more information is needed (a) the distribution of ECP concentrations in unslected, larger groups of patients, and healthy subjects, preferably in an epidemiological study, and (b) the relationship of serum ECP concentrations to other markers of disease activity (for example, symptoms, lung function, peak expiratory flow, airway hyper-responsiveness) in a large number of patients followed up prospectively for a prolonged period of time.

Obviously, it would be Wonderful if serum ECP concentrations were a reflection of inflammatory activity in the airways in the individual patient. It is unlikely, however, that the concentration of a single mediator from a single effector cell, measured in peripheral blood, would accurately reflect the overall severity of the complex atsmatic inflammatory response in the airways.

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Drs Koller and Eicher comment:

We agree with Dr Brand that epidemiological studies for a prolonged period of time are required to emphasise the importance of ECP measurements in monitoring asthma activity. Since 1985 bronchial biopsies have been undertaken in patients with asthma demonstrating the importance of eosinophils in asthma.5 These data are of importance in the understanding of bronchial inflammation, but they reveal abnormalities of the bronchi only and cannot properly quantitate the inflammation. In 1986, studies have been performed to evaluate the use of mediators in bronchoalveolar fluid (BALF), which is assumed to reflect cell activity such as ECP for eosinophil activation, to assess inflammation in both in vivo and in vitro assays. These studies demonstrated that ECP in BALF was correlated with asthma severity.6 In addition, other investigators demonstrated that serum measurements of ECP were related to eosinophil activity in the bronchial system.7 and thus to disease activity.

Of course the eosinophil is not the only (pro)inflammatory cell in the asthmatic lung but it plays a very important part in asthma by releasing highly cytotoxic proteins which are assumed to be causative for many histomorphological and functional changes in the asthmatic lung. These findings are having an effect on management and anti-inflammatory treatment has become first line treatment in asthma. But so far no variable is available in routine assessment to determine the efficacy of suppressing eosinophil inflammation. The measurement of activity markers of other inflammatory cells in asthma, such as lymphocytes, neutrophils or mast cells, failed to correlate with disease activity as the measurement of ECP.8 Thus, assessment of ECP in serum especially in children provides the potential to assess inflammation in asthma based on its relation to asthma activity, which we are able to demonstrate in cross sectional studies in a large number of children (n=175).9 In addition, longitudinal investigations showed that ECP concentrations were decreased by the administration of inhaled corticosteroids associated with improvement of lung function.10 These data are encouraging and a longitudinal follow up study is now under way.


8. Blumenthal IVAN
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Dr Hobbs, Wynne, and Thomas comment:

We agree with Dr Blumenthal that photographic recording of genital and anal findings is valuable in child sexual abuse evaluation. Contrary to Dr Blumenthal’s information, photographs were taken of many Cleveland children including those independently reviewed by the second opinion panel. Photographs were taken for all cases in our study. A report of some of these cases was reviewed by the second opinion panel from many of our cases.1 Incomplete legal and clinical data, disregard for healing and timing of examination (70% seen 15 days after assault), and the use of colposcope pictures of the condition of the examination did not detract from its validity and is potentially misleading. Unless photography becomes a routine part of the investigation of child sexual abuse we will have learned nothing from the Cleveland experience.

Dr Dis Child: first published as 10.1136/adc.75.1.88-b on 1 July 1996. Downloaded from http://adc.bmj.com/