Correlation of Nasal Smear Eosinophilia with Class of Allergic Rhinitis

We correlated the grade of nasal smear eosinophilia with severity of allergic rhinitis, in 50 children in a cross sectional study conducted at a tertiary care referral hospital, between August 2007 to July 2009. The grade of nasal smear eosinophilia correlated well with increasing severity of allergic rhinitis (P<0.001)(r=0.83).

Key words: Allergic rhinitis, IgE level, Nasal smear eosinophilia.

Allergic rhinitis is most prevalent during school age, affecting up to 15% of 6 to 7 year olds and 40% of 13 to 14 year olds [1]. Nasal smear eosinophilia can be graded cytologically [2]. It does not specify any allergen but can be a cost effective screening test to determine the presence or absence of allergic rhinitis [3,4]. We attempted to correlate its grade with increasing severity of allergic rhinitis.

Children with allergic rhinitis (n=50), aged 5 to 18 years from August 2007 to July 2009 were included in the study. Children with conditions mimicking allergic rhinitis like foreign body, gustatory rhinitis, drug induced rhinitis, chemical and irritant induced rhinitis, hormonal induced rhinitis, cerebrospinal rhinorrhea, and granulomatous rhinitis were excluded. Allergic rhinitis cases were diagnosed and classified on Allergic Rhinitis and its Impact on Asthma (ARIA) guidelines [5]. The nasal smear eosinophilia was carried out on the same day after informed parental consent and graded as per standard guideline based on cytology, in grades I-V [2]. ***Table* I** shows that the grade of nasal smear eosinophilia increases with severeity of allergic rhinitis.

The correlation between the class of allergic rhinitis and grade of nasal smear eosinophilia, obtained using Spearman correlation, was significant (r=0.82, P<0.001).

We noted that there was an increase in nasal smear eosinophilia with the increasing severity of allergic rhinitis. The limitation of the study lies in the inability to comment on the sensitivity and specificity of the nasal smear eosinophilia due to inadequacy of the sample size. The cases were not followed up to see the response of nasal eosinophilia after treatment, thus making the reproducibility of the test questionable.

TABLE I GRADE OF NASAL SMEAR EASIONOPHILIA AND CLASS OF ALLERGIC RHINITIS

Grade of nasal smear eosinophils	*Class of allergic rhinitis*							
	Mild Intermittent		Mild Persistent		Moderate to severe intermittent		Moderate to severe persistent	
	n	%	*n*	%	*n*	%	*n*	%
II (*n*=7)	5	71.4	2	28.6	–	–	–	–
III (*n*=13)	4	30.8	7	53.8	1	7.7	1	7.7
IV (*n*=13)	–	–	2	15.4	11	84.6	–	–
V (*n*=16)	–	–	2	12.5	1	6.3	13	81.3
VI (*n*=1)	–	–	–	–	–	–	1	100.0

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High Sensitivity C-Reactive Protein in Classical Kawasaki Disease

We recruited 20 children of classical Kawasaki disease (KD) in follow up of atleast six months since diagnosis, from the pediatric rheumatology clinic at our hospital in August and September 2007. Twenty healthy age and sex matched children served as controls. Venous blood for the measurement of serum high sensitivity C-reactive protein (hs-CRP) concentrations was collected after an overnight fast and measured with a particle enhanced immunoturbidometric assay consisting of an anti-monoclonal antibody coupled to latex microparticles (Quantia CRP-US). The presence of hs-CRP resulted in an insoluble complex formation giving rise to turbidity, which was measured at wavelength between 505-578 nm and had a functional sensitivity of 0.015 mg/dL. The institutional ethics committee approved the study. Written informed consent was taken from either of the parent.

There were 13 boys with mean age of 4.5 years (range 1-12) and 7 girls with mean age of 2 years (range 0.5-3). Cardiac involvement (coronary dilatation-2, coronary aneurysm-3) was seen in 25% children in the acute phase which resolved on follow up. Intravenous immunoglobulin was received by 75% of the children and all received aspirin. Mean CRP values during acute phase of disease were 90.85 (range 7.4- 384 mg/dL; SD - 80.20); hs-CRP in patients ranged from 0.019- 0.510; SD- 0.226. After 6 months of disease onset, mean hs-CRP value in patients was significantly higher than controls (0.275 mg/dL and 0.085 mg/dL, respectively, P=0.002). There was no significant difference comparing the hs-CRP in boys and girls; children with and without history of cardiac involvement; and with and without immunoglobulin therapy in the acute phase of illness.

Increased CRP is characteristic during the acute phase of KD. Persistent elevation after the convalescent phase of KD validates the possibility of smouldering vasculitis playing a part in altering arterial function [1,2]. Mitani, *et al.* [3] observed that levels of CRP was elevated in KD patients with coronary artery lesions (CAL) compared to controls and other KD groups with normal coronary arteries or with regressed aneurysms. In our limited study, hs-CRP values were not different in the small number of patients with cardiac involvement in the acute phase as compared to those without. We did not have a case with residual CAL. There was no correlation between the CRP in the acute phase and hs-CRP in the follow up. Suppression of this chronic inflammatory process may be a new target for intervention, to improve arterial function. Significant reduction in serum hs-CRP levels after short-term statin treatment has been demonstrated [4].