ABSTRACTS
UPDATING ATOPIC DERMATITIS

1. Induction of atopic dermatitis by inhalation of house dust mite.

Author(s): Tupker-RA; De-Monchy -JG; Coenraads-PJ; Homan-A; van-der-Meer-JB.

Source: J-Allergy-Clin-Immunol. 1996 May; 97(5): 1064-70

ABSTRACT:.....RESULTS:

In nine of 20 patients with atopic dermatitis bronchial challenge with house dust mite induced unequivocal skin symptoms after 1.5 to 17 hours. Pruritic erythematous lesions on noninvolved sites patients had an exacerbation only, and three other patients had new lesions only. In eight of nine patients with house dust mite inhalation-induced dermatitis, skin symptoms were preceded by an early bronchial reaction. All patients with house dust mite-induced dermatitis had a history of asthma, and as a group they had a higher mean blood total IgE level compared with the "negative skin responders". One patient had pruritic erythema on the placebo challenge day, without a preceding bronchoconstrictive reaction. The number of patients who had a skin response on the house dust mite challenge day was significantly higher than the number of patients who had a skin response on the placebo day ($p = 0.011$ [Prescott's test]). CONCLUSIONS: The respiratory route may be relevant in the induction and exacerbation of dermatitis in a subset of patients with atopic dermatitis who have early bronchial reactions after house dust mite inhalation, a history of asthma, and an elevated blood total IgE level. Furthermore, these findings suggest a possible causal relationship between bronchial reactions and skin reactions.

2. Intravenous immune globulin: an alternative therapy in steroid-dependent allergic diseases.

Author(s): Gelfand-EW; Landwehr-LP; Esterl-B; Mazer-B

Source: Clin-Exp-Immunol.1996 May; 104 Suppl.1: 61-6

ABSTRACT:

A fundamental feature of asthma is abnormal airway function, now recognized to result from both acute and chronic inflammatory changes. Central to the development of these inflammatory changes may be the activation of T cells and the release of pro-inflammatory cytokines. In the skin, a similar cascade of events may underlie the pathogenesis of atopic dermatitis. Asthma and atopic dermatitis often share several features that may be important in thier pathogenesis: T-cell infiltration of the tissues, elevated IgE levels, and a history of known triggers associated with positive immediate skin-test reaction. In both diseases, administtation of intravenous immune globulin (IVIG) on a regular basis appears to reduce the need for systemic corticosteroids, reduce symptoms and for asthmatic, reduce hospitalization costs. Although the mechanism of action of IVIG in these disorders remains to be defined, it may be exhibiting significant anti-inflammatory activity. IVIG may be a potent alternative in the treatment of severe, steroid-dependent allergic disorders, reducing steroid dependency.

3. Analysis of familial aggregation of atopic eczema and other atopic diseases by odds ratio regression models.

Author(s): Diepgen-TL; Blettner-M

Source: J-Invest-Dermatol. 1996 May; 106(5): 977-81

ABSTRACT:

In order to determine the relative importance of genetics and the environment on the occurrence of atopic diseases, we investigated the familial aggregation of atopic eczema, allergic rhinitis, and allergic asthma in the relatives of 426 patients with atopic eczema and 628 subjects with no history of eczema (5,136 family members in total). Analyses were performed by regression models for odds ratios (OR) allowing us to estimate OR for the familial aggregation and simultaneously to adjust for other covariates. Three models were analyzed assuming that the OR i) is the same among any two members of a family, ii) depends on different familial constellations, i.e.,whether the pars are siblings, parents, or parent/sibling pairs, and iii) is not the same between the father and the children and between the mother and the children. The OR of familial aggregation for atopic eczema was 2.16 (95% confidence interval (95%-CI 1.58-2.96) if no distinction was made between the degree of relationship. Further analyses within the members of the family showed a h igh OR among siblings (OR = 3.86; 95%-CI 2.10-7.09), while the OR between parents and siblings was only 1.90 (95%-CI 1.31-2.97). Only for atopic eczema was the familial aggregation between fathers and siblings (ms: OR = 2.66; fs: OR = 1.29). This can be explained by stronger maternal heritability, shared physical environment of mother and child, or environmental events that affect the fetus in utero. Since for all atopic diseases a stronger correlation was found between siblings than between siblings and parents, our study indicates that environmental factors, especially during childhood, seem to explain the recenlty observed increased frequencies of atopic diseases.

4. Abnormal IL-4 gene expression by atopic dermatitis T lymphocytes is reflected in altered nuclear protein interations with IL-4 transcriptional regulatory element.

Author(s): Chan-SC; Brown-MA; Willcos-TM; Li-SH; Stevens-SR; Tara-D; Hanifin-JM.

Source: J-Invest-Dermatol. 1996 May; 106(5): 1131-6

ABSTRACT:

Among the atopic disease, atopic dermatitis is characterized by the highest levels of serum IgE and by increased peripheral blood T-cell interleukin-4 (IL-4) production. IL-4 promotes IgE synthesis by B cells and stimulates the growth of IL-4-producing T cells and may contribute to the pathogenesis of this disease. In this study, in situ hybridization established that atopic dermatitis patients have a higher frequency of IL-4-producing peripheral blood T-cell when compared to normal subjects. These in vivo-

derived T-cels were used to examine the signaling requirements of IL-4 production and the nuclear factors that associated with a critical IL-4 transcriptional regulatory element between -88 and -60 relative to the IL-4 transcption initiation site, the activation responsive element. We demonstrate that, as in T-cell lines, proteins belonging to the NF-AT and AP-1 family of transcription factors are present in stimulated cell extracts and specifically associate with the activation responsive element. Dysregulated IL-4 production is reflected in the nuclear proteins that associated with element. Using gel shift assays, we found that 12 of 12 nuclear extracts from stimulated atopic T cells formed the activation-dependent protein-DNA complex, compared to only 2 of 12 normal T-cell extracts. Activation complex formation correlated with the relative level of IL-4 mRNA and protein produced in stimulated T-cells, suggesting that abnormal IL-4 gene expression in atopic disease may be linked to alterations in nuclear protein interactions with these promoter elements.

5- Retrospective survey of surgical outcomes on rhegmatogenous retinal detachments associated with atopic dermatitis.

Author(s): Azuma-N; Hida-T; Katsura-H; Takeuchi-S; Danjo-S; Tano-Y.

Source: Arch-Ophthalmol. 1996 Mar; 114(3): 281-5

ABSTRACT: OBJECTIVE:

To determine the clinical features and surgical outcomes of retinal detachment associated with atopic dermatitis. METHODS: One hundred twentyone eyes of 98 patients with atopic dermatitis and rhegmatogenous retinal detachment were surgically treated and followed up for 1 year or longer. Fundus examination data on retinal breaks and detachment, and follow data on anatomic reattachment were obtained and compared between phakic and aphakic eyes using the chi 2 test. RESULTS: Breaks were often multiple and located at the ora serrata (72%) and in the ciliary epithelium (15%). Irregularly shaped breaks (13.5%) and giant breaks (16%) also were seen. Most detachments (71%) were localized and shallow. No significant difference was identified with or without a history of cataract surgery. The prognosis after the initial surgery (reattachment rate, 72%) was unfavorable because of new break formation, but the results of reoperation (reattachment rate 93%) were as successful. CONCLUSIONS: Patients with atopic dermatitis may have an abnormality in the anterior retina and ciliary epithelium that predisposes to retinal detachment. Findings suggest a possible traumatic trigger and the need to perform an encircling scleral buckle procedure with widespread retinopexy initially in these patients.

6- Combined skin prick and patch testing enhances identification of food allergy in infants with atopic dermatitis.

Author(s): Isolauri-E; Turjanmaa-K

Source: J-Allergy-Clin-Immunol. 1996 Jan; 97 (1Pt 1): 9-15

ABSTRACT:..... RESULTS:

The oral cow milk challenges were interpreted as positive in 54% of both challenge types. Positive challenge rapidly elicited pruritus, urticaria, and/or exanthema in 49% of cases and delayed-onset eczematous lesions in 51%. The skin prick and patch tests gave markedly discrepant results; prick tests were positive in 67% of the cases with acute-onset reaction to milk challenge, whereas patch tests tended to be negative. Patch tests were positive in 89% of those with delayed-onset reactions, although prick tests were frequently negative. CONCLUSIONS: The observations indicate that IgE and T cell-mediated responses to cow milk can be distinguished in atopic dermatitis. Parallel skin testing with combined prick and patch tests can significantly enhance the accuracy in diagnosis of specific dietary allergies in patients with atopic dermatitis.

7- Prostaglandin E2 control of T cell cytokine production is functionally related to the reduced lymphocyte proliferation in atopic dermatitis.

Author(s): Chan-S; Henderson-WR Jr; Li-SH; Hanifin-JM

Source: J-Allergy-Clin-Immunol.1996 Jan; 97 (1 Pt 1): 85-94

ABSTRACT:

Past studies of peripheral blood mononuclear cells (PBMC) from patients with atopic dermatitis (AD) have demonstrated reduced proliferation. We have studied phytohemagglutinin-induced lymphocyte proliferation in the context of interleukin-4 (IL-4), interferum-gamma (IFN-gamma), and prostaglandin E2 (PGE2) production in cultures of PBMC from patients wihout and with AD. The proliferation index was found to correlate proportionally to IFN-gamma production and inversely to T-cell IL-4 and monocyte PGE2 production. Assays in parallel cultures showed significantly increased PGE2 production. Assays in parallel cultures showed significantly increased PGE2 production by purified AD monocytes. The proliferation index in PBMC from persons with AD was significantly reduced compared with normal PBMC. This difference was normalized in the presence of extrinsic IFN-gamma but exaggerated when IL-4 was added. Increased AD monocyte production of inflammatory factors (e.g., PGE2) and cytokines appears to increase IL-4 production by Th2 while suppressing IFN-gamma production by TH1. Restoration of the normal proliferation of PBMC by the addition of IFN-gamma may represent one mechanism for the clinical efficacy of IFN-gamma treatment of AD.

8- Production of interleukin-5 and the suppressive effect of cyclosporin A in chilhood severe atopic dermatitis.

Author(s): Ishii-E; Yamamoto-S; Sakai-R; Hamasaki-Y; Miyazaki-S

Source: J-Pediatr. 1996 Jan; 128(1); 152-5.

ABSTRACT:

A child with severe atopic dermatitis had marked improvement with oral cyclosporin A (CyA) therapy. The function of activated T lymphocytes and serum interleukin-5 concentrations were reduced. The expression and production of interleukin-5 were high, but were suppressed during CyA therapy and by CyA in vitro. Oral CyA therapy may be useful for severe atopic dermatitis.

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