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**Literature search results**

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**Search details**

Significantly elevated IgE (in isolation) but RAST specific IgE negative particularly with regards to clinical relevance and further investigation

**Resources searched**

NICE Evidence; TRIP Database; Cochrane Library; CINAHL; EMBASE; MEDLINE; Google Scholar

**Database search terms:** (IgE OR "immunoglobulin E"). (elevat* OR high* OR rais* OR increas*). (RAST OR "radioallergosorbent test"). ("allergy screen" OR "allergy test" OR "specific IgE" OR in-vitro OR "in vitro"), negative, ("no atopy" OR "without atopy" OR "non atopic" OR "not atopic")

**Evidence / Google Scholar search string(s):** (IgE OR "immunoglobulin E") (elevated OR raised OR increased OR high) (RAST OR "allergy screening" OR "allergy test" OR "specific IgE")

**Guidelines and Policy**

**American Academy of Allergy, Asthma and Immunology**
Ask the Expert section – Causes of elevated IgE, 2013
Ask the Expert section – Elevated IgE, 2008
**Evidence Reviews**

Nothing found

**Published Research – Databases**

**Total serum immunoglobulin E as a marker for missed antigens on in vitro allergy screening.**
**Author(s)** Hatcher, Jeanne L, Cohen, Samuel D, Mims, J Whit
**Citation:** International forum of allergy & rhinology, Oct 2013, vol. 3, no. 10, p. 782-787 (October 2013)
**Publication Date:** October 2013
**Abstract:** The diagnosis of inhalant allergies involves a medical history, physical exam, and allergen sensitivity testing; allergen sensitivity can be assessed by a specific immunoglobulin E (IgE) screen for inhalant allergens. Some patients with clinical suspicion for inhalant allergies have a negative specific IgE screen, but high total IgE. We theorize that elevated total IgE may indicate a false-negative screen caused by “missed allergens” not initially identified. Study patients with a negative allergy screen and elevated IgE (>116 kU/L) were identified (n = 26). Control patients (n = 26) were defined as having a negative screen and an IgE
**Source:** Medline

**Increased IgE serum levels are unrelated to allergic and parasitic diseases in patients with juvenile systemic lupus erythematosus.**
**Author(s)** Liphaus, Bernadete L, Jesus, Adriana A, Silva, Clovis A, Coutinho, Antonio, Carneiro-Sampaio, Magda
**Citation:** Clinics (São Paulo, Brazil), Nov 2012, vol. 67, no. 11, p. 1275-1280 (November 2012)
**Publication Date:** November 2012
**Abstract:** The aim of this study was to assess the IgE serum levels in juvenile systemic lupus erythematosus patients and to evaluate possible associations with clinical and laboratory features, disease activity and tissue damage. The IgE serum concentrations in 69 consecutive juvenile systemic lupus erythematosus patients were determined by nephelometry. IgG, IgM and IgA concentrations were measured by immunoturbidimetry. All patients were negative for intestinal parasites. Statistical analysis methods included the Mann-Whitney, chi-square and Fisher's exact tests, as well as the Spearman rank correlation coefficient.
Increased IgE concentrations above 100 IU/mL were observed in 31/69 (45%) juvenile systemic lupus erythematosus patients. The mean IgE concentration was 442.0 ± 163.4 IU/ml (range 3.5-9936.0 IU/ml). Fifteen of the 69 patients had atopic disease, nine patients had severe sepsis and 56 patients presented with nephritis. The mean IgE level in 54 juvenile systemic lupus erythematosus patients without atopic manifestations was 271.6 ± 699.5 IU/ml, and only nine of the 31 (29%) patients with high IgE levels had atopic disease. The IgE levels did not statistically differ with respect to the presence of atopic disease, severe sepsis, nephritis, disease activity, or tissue damage. Interestingly, IgE concentrations were inversely correlated with C4 levels (r = -0.25, p = 0.03) and with the SLICC/ACR-DI score (r = -0.34, p = 0.005). The IgE concentration was also found to be directly correlated with IgA levels (r = 0.52, p = 0.03). The present study demonstrated for the first time that juvenile systemic lupus erythematosus patients have increased IgE serum levels. This increase in IgE levels was not related to allergic or parasitic diseases. Our results are in line with the hypothesis that high IgE levels can be considered a marker of immune dysregulation.
**Source:** Medline

**Generalised pruritus and elevated levels of immunoglobulin E acting as biomarkers**
Elevated levels of immunoglobulin E may indicate steroid resistance or relapse in adult primary nephrotic syndrome, especially in minimal change nephrotic syndrome.

Author(s) Tan, Y, Yang, D, Fan, J, Chen, Y

Citation: The Journal of international medical research, Jan 2011, vol. 39, no. 6, p. 2307-2313 (2011)

Publication Date: January 2011

Abstract: Immunoglobulin E (IgE) antibodies may play a role in the development of kidney diseases that are related to hypersensitivity reactions. Patients with idiopathic nephrotic syndrome often exhibit increased serum IgE levels and this may be related to sensitivity to steroid treatment. In the present study, the serum IgE levels in 120 patients with different types of primary nephrotic syndrome (PNS) were analysed and found to be significantly elevated in cases of minimal change nephrotic syndrome (MCNS) compared with membranous nephropathy or membrano-proliferative glomerulonephritis. No difference in serum IgE level was observed between cases of steroid-sensitive nephrotic syndrome (SSNS) or steroid-resistant nephrotic syndrome, although the serum IgE level was significantly elevated in SSNS patients in relapse compared with SSNS patients in remission. In MCNS patients, 73.6% exhibited SSNS regardless of their serum IgE level at diagnosis. It is concluded that elevated levels of IgE may be a feature of steroid resistance or relapse, indicating prognostic significance in adult PNS, particularly in MCNS.

Source: Medline

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Available in fulltext from Journal of International Medical Research at Highwire Press
Available in fulltext from Journal of International Medical Research at Free Access Content
Available in print at Pilgrim Hospital Staff Library
Available in print at Lincoln County Hospital Professional Library

Beneficial effects of treatment with anti-IgE antibodies (Omalizumab) in a patient with severe asthma and negative skin-prick test results.

Author(s) van den Berge, Maarten, Pauw, Ronald G, de Monchy, Jan G R, van Minnen, Cees A, Postma, Dirkje S, Kerstjens, Huib A M

Citation: Chest, Jan 2011, vol. 139, no. 1, p. 190-193 (January 2011)

Publication Date: January 2011

Abstract: It is now well recognized that treatment with anti-IgE antibodies like omalizumab is a valuable option in patients with allergic asthma who remain symptomatic despite optimal treatment. To our knowledge, treatment with omalizumab in patients with nonallergic asthma has not been reported. We present and discuss a patient with severe asthma and elevated total IgE who had a negative radioallergosorbent (RAST) test result and a negative skin-prick test result; the patient showed a dramatic improvement with this treatment strategy.

Source: Medline

Available in fulltext from Chest at Free Access Content
A case of follicular bronchiolitis associated with asthma, eosinophilia, and increased immunoglobulin E.

Author(s) Shimizu, Kaoruko, Konno, Satoshi, Nasuhara, Yasuyuki, Tanino, Mishie, Matsuno, Yoshihiro, Nishimura, Masaharu

Citation: The Journal of Asthma : official journal of the Association for the Care of Asthma, Dec 2010, vol. 47, no. 10, p. 1161-1164 (December 2010)

Publication Date: December 2010

Abstract: A 49-year-old woman, who had been diagnosed with asthma, showed a bilateral diffuse pattern of small centrilobular nodules on CT. Laboratory data revealed peripheral eosinophilia and a marked increase in total serum IgE levels. The nodules detected on CT were initially considered to be associated with bronchiolar infiltration of eosinophils. Pathological findings from thoracoscopy revealed infiltration of eosinophils into the airway lumen and walls, goblet cell hyperplasia, and thickening of the basement membrane in large bronchi, consistent with asthma. However, hyperplastic lymphoid follicles with reactive germinal centers were observed along the bronchioles. The follicles had no evidence of monoclonality suggested by immunohistological analysis, and no remarkable infiltrates of eosinophils, suggesting follicular bronchiolitis (FB). After treatment with prednisolone, the small diffuse nodules improved markedly, and peripheral eosinophilia and total serum IgE levels also decreased. To the best of our knowledge, this is the first documented case report of FB associated with asthma, eosinophilia, and elevated IgE with a definite pathophysiological diagnosis.

Source: Medline

Hodgkin's lymphoma presenting with markedly elevated IgE: a case report.

Author(s) Ellis, Anne K, Waserman, Susan

Citation: Allergy, Asthma, and Clinical Immunology : official journal of the Canadian Society of Allergy and Clinical Immunology, Dec 2009, vol. 5, no. 1, p. 12. (December 2009)

Publication Date: December 2009

Abstract: Markedly elevated IgE as a manifestation of a lymphoproliferative disorder has been only rarely reported. We present the case of a 22 year old female referred to the adult Allergy & Clinical Immunology clinic for an extremely elevated IgE level, eventually diagnosed with Hodgkin's lymphoma. She had no history of atopy, recurrent infections, eczema or periodontal disease; stool was negative for ova & parasites. Chest X-ray revealed large bilateral anterior mediastinal masses that demonstrated prominent uptake on gallium scan. Mediastinal lymph node biopsy was consistent with Hodgkin's lymphoma, nodular sclerosing subtype, grade I/II. Although uncommon, markedly elevated IgE may be a manifestation of a malignant process, most notably both Hodgkin's and Non-Hodgkin's lymphomas. This diagnosis should be considered in evaluating an otherwise unexplained elevation of IgE.

Source: Medline

Available in fulltext from Allergy, Asthma, and Clinical Immunology : Official Journal of the Canadian Society of Allergy and Clinical Immunology at National Library of Medicine

Increased immunoglobulin E response in acute coronary syndromes.

Author(s) Erdogan, Okan, Gul, Cetin, Altun, Armagan, Ozbay, Gultac

Citation: Angiology, Jan 2003, vol. 54, no. 1, p. 73-79, 0003-3197 (January 2003)

Publication Date: January 2003

Abstract: The role of inflammation and mast cell activation has been implicated in atherosclerotic plaque destabilization and rupture. To investigate the role of immunoglobulin E (IgE) in acute coronary syndrome, a prospective clinical study was conducted in patients with acute myocardial infarction (AMI), unstable angina pectoris (UAP), stable angina pectoris (SAP), and healthy controls. IgE levels were
serially measured and compared in consecutive patients with AMI (n = 16) and UAP (n = 14) on days 1, 3, 7, 21 after admission and 3 months later and only once in stable angina pectoris (n = 15) and healthy controls (n = 14). In addition, blood eosinophil and basophil levels on admission were measured in all groups and compared. Initial IgE levels determined at admission in patients with AMI, UAP, and SAP were significantly higher than levels in the control group (p = 0.002). Initial high IgE level in AMI on day 1 increased to a peak by day 7 (p = 0.024), then gradually decreased by day 21 and at 3 months (p = 0.052). High IgE level in UAP persisted by day 7 and gradually decreased by day 21 and 3 months (p = 0.037 and p = 0.018, respectively). Blood eosinophil count on admission was significantly higher in UAP than in the control group (p = 0.005). Basophil levels of both AMI and UAP groups on admission were found to be elevated as opposed to control group (p = 0.02 and p = 0.012, respectively). This study demonstrates that the level of IgE significantly increased during the acute phase of acute coronary syndromes and gradually decreased, supporting the role of acute inflammatory response and mast cell involvement in plaque rupture.

Source: Medline
Available in fulltext from Angiology at EBSCOhost

Clinical characteristics of so called eosinophilic otitis media.
Author(s) Nagamine, Hisayo, Iino, Yukiko, Kojima, Chie, Miyazawa, Tetsuo, lida, Takashi
Citation: Auris, nasus, larynx, Jan 2002, vol. 29, no. 1, p. 19-28, 0385-8146 (January 2002)
Publication Date: January 2002
Abstract: Although "eosinophilic otitis media" is not as uncommon a condition as was previously believed, its cause and pathogenesis are not yet fully understood. The purpose of this study was to describe the clinical characteristics in patients with "eosinophilic otitis media" to clarify its pathogenesis. Seven adult patients with persistent and intractable otitis media with viscous middle ear effusion containing many eosinophils, who were also under treatment for bronchial asthma, were studied. The following examinations were conducted: nasopharyngeal endoscopy, pure-tone audiometry, eustachian tube function test, temporal bone CT scan, blood analysis, bacterial and fungal culture of middle ear effusion, histological study of the middle ear and nasal specimens, and measurement of eosinophilic cationic protein (ECP) in middle ear effusion. Some patients had persistent perforation with papillomatous granulation tissue arising from the mesotympanic mucosa, and all the patients had nasal polyposis. The pure-tone audiometry showed the mixed-type of hearing loss in all the patients, and the hearing level deteriorated progressively during the course in some patients. The eustachian tube function was not always poor but was patulous in some cases. The most severely diseased areas were in the eustachian tube and mesotympanum by temporal bone CT images. All the seven patients had the high levels of total serum IgE, but the RAST scores were negative in three patients and low grade in three patients. The accumulation of eosinophils was observed in middle ear effusion, middle ear mucosa and nasal polyps, and the eosinophils were highly activated with degranulation. High level of ECP was also recovered from middle ear effusion. Active eosinophilic inflammation occurs in the entire respiratory tract, including the middle ear in these patients. From our present investigation, we propose the criteria and clinical characteristics of "eosinophilic otitis media".
Source: Medline

Improved diagnostic procedures in allergic RAST negative rhinitis.
Author(s) Valerio, G, Cassano, P, Attimonelli, R, Salerno, F G
Citation: Allergologia et immunopathologia, Jan 1988, vol. 16, no. 1, p. 17-22, 0301-0546 (1988 Jan-Feb)
Publication Date: January 1988
**Abstract:** Patients affected by cutinegative, RAST negative, chronic hyperreactive rhinitis showed in 15/28 cases positive intradermal tests, nasal provocation test and RAST on nasal fluids. In 13/28 cases high IgE on nasal samples could be observed and seldom were the intradermal tests positive, but in no case were the nasal provocation or nasal RAST positive. Delayed and late positive provocation tests showed different features from early reactions. Criteria of positivity and checks during provocation tests look critical. The occurrence of sinusitis and polyposis can change clinical features. Mediators released from tissues lead to bronchial hyperreactivity.

**Source:** Medline

**Specific IgE antibodies in nasal secretion from patients with allergic rhinitis and with negative or weakly positive RAST on the serum.**

**Author(s)** Deuschl, H, Johansson, S G

**Citation:** Clinical allergy, Mar 1977, vol. 7, no. 2, p. 195-202, 0009-9090 (March 1977)

**Publication Date:** March 1977

**Abstract:** Nasal secretions from eighteen patients with allergic rhinitis with a positive case history, intradermal test and nasal provocation test, but with negative or only weakly positive RAST (radioallergosorbent test) on the serum against a total of thirty-five allergens, were studied. In the RAST an immunosorbent-purified anti-IgE with DE2 specificity was used, which raised the detection limit. Nasal secretion was collected by washing the nasal mucosa with 0.9% and 18% NaCl solution respectively, and the latter secretion was also lyophilized and concentrated. In ten cases RAST was slightly positive on the nasal secretion, and in three of the concentrated secretions the RAST value was higher than on the serum. In none of the serum or nasal secretion samples was RAST positive according to the cut off value for a positive result defined by the reference system used in Phadebas Rast. From these results it is concluded that RAST analyses of nasal secretion from patients with allergic rhinitis is of no appreciable value in routine clinical allergological diagnosis. However, the increased sensitivity of RAST obtained with isotope-labelled anti-DE2 may be useful in the serological diagnosis of patients with low grade allergy having low levels of IgE antibodies in serum.

**Source:** Medline

Available in fulltext from *Clinical Allergy: Journal of the British Allergy Society* at EBSCOhost

**Google Scholar**

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