Mucosal inflammation syndrome in allergic disease

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INTRODUCTION

It is common to find allergic patients with simultaneous clinical signs or symptoms of the respiratory and/or gastrointestinal and/or genitourinary mucosal membranes. In the present study the common denominator was allergic rhinitis. Simultaneous clinical involvement, circumscribed to the aforementioned mucosal tissues (mucosae) clearly suggests common physiopathological factors in allergic disease; accordingly, alterations of one type of membrane affect the others, or alterations of two or more mucosae may be explained on the basis of a common mechanism.

Hypothesis. Allergic disease can give rise to simultaneous clinical manifestations of the respiratory, gastrointestinal and genitourinary mucosal membranes.

Objective. To determine whether allergic disease can give rise to simultaneous clinical manifestations of these mucosae.

Summary. Patients who have allergies can have simultaneous respiratory, digestive and genitourinary mucosal disease. I performed a retrospective study in 30 patients; 24 children and 6 women. The children were between 5 and 9 years old, and the women were between 26 to 40 years old. All of them suffer from allergic diseases.

Results. 100% had clinical respiratory diseases like rhinitis, asthma, arithenoids or vocal cord inflammation, tonsillectomy, and/or frequent respiratory viral infections. 100% of the patients had clinical digestive diseases such as gastro-esophageal reflux, gastro-duodenitis, constipation and diarrhea. 87% of the female patients had clinical genitourinary diseases such as vulvovaginitis and urinary infections.

The results of this study are very important because they provide information regarding the clinical behaviour of allergic diseases, which can be systemic. According to this concept, its treatment should be holistic and individual because each patient can have one or more mucosae involved. The most recent articles of medical literature refer to rhinitis and asthma only as a like process.

MATERIALS AND METHODS

A retrospective analysis was made of 30 deliberately selected allergic patients with clinical manifestations of allergic rhinitis that coincided with clinical manifestations of the respiratory and/or gastrointestinal and/or genitourinary mucosal membranes. These clinical manifestations were: asthma, sinusitis, otitis media, acute and recurrent viral respiratory infections, adenotonsillar hypertrophy, inflammation of the vocal cords and arytenoiditis, esophagitis, gastroesophageal reflux (GERD), gastritis, duodenitis, diarrhea, constipation, vaginitis and urinary infections.

The study series comprised 24 children and 6 adult women. Of the pediatric patients, 10 were girls and 14 were boys. The patient age varied from 5-9 years among the children and from 26-40 years in the case of the adults. Three of the women were nulliparous. The study period was from April 30, 2002 to April 30, 2003.

Allergic patient classification was based on an evident clinical history of rhinitis, with or without simultaneous asthma and/or total immunoglobulin E (IgE) levels above normal or specific IgE positivity for a given antigen. Clinical antecedents of adenoid removal or tonsillectomy in a large proportion of cases contributed to establish the diagnosis. Thus, the sum of these clinical events undoubtedly would classify these patients as allergic subjects.

The definition of rhinitis was based on a clinical history of abnormally increased and chronic nasal itching, marked sneezing particularly in the morning, nasal congestion and rhinorrhea of variable intensity according to the severity of the clinical process. Almost all these patients had previously used local steroids applied to the nasal mucosa, prescribed by a physician unrelated to the present study.

Asthmatic patients in turn were defined as those with two or more asthmatic episodes a year on average, in the previous three years, with frequent beta-2-adrenergic and/or inhalatory steroid use.

Esophago- and/or gastro- and/or duodenitis were diagnosed in the presence of endoscopic and histological findings corresponding to such disorders.

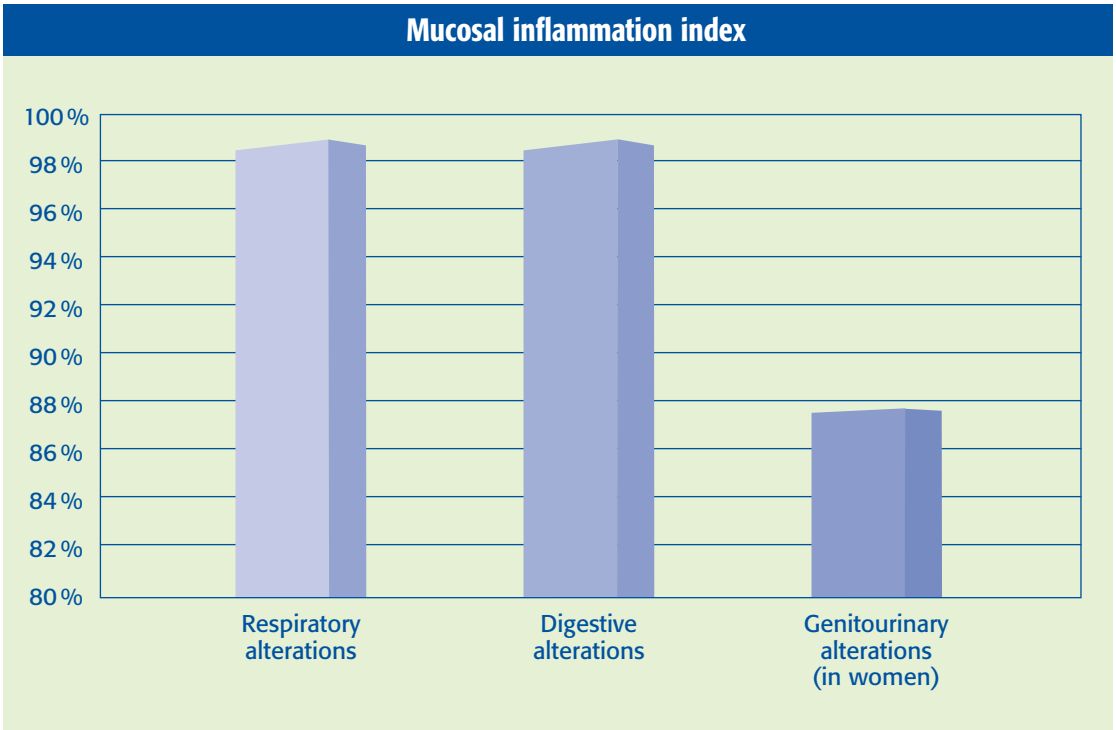
Recurrent acute viral respiratory infection (ARI) was diagnosed when the patient suffered one or more infections a month.

Clinical gastritis in turn was defined by clinical signs of acute gastritis – the latter being established by acute epigastric pain accompanied or not by vomiting and relief following antacid administration.

Chronic cough was defined as cough persisting for more than 20 days in different episodes, with a cause not different from allergy of the upper airways.

Gastroesophageal reflux (GERD) in turn was diagnosed by gammagraphy or a history of chronic vomiting in a child, or – in the case of adults – chronic heartburn.

Arytenoiditis and inflammation of the vocal cords was accepted when laryngoscopy confirmed inflammation of these structures.



Chronic diarrhea was defined as two or more daily depositions, with diarrheic consistency on one or more occasions – all with colic type abdominal pain.

Constipation was defined as an absence of bowel movement for over 48 hours, with hard stools and a large fecal bolus.

Vulvovaginitis was described as an episode of vaginal secretion, itching or inflammation of the skin of the vulva and vaginal mucosa.

Urinary infection in turn was considered for those patients presenting at least one episode of clinical signs and symptoms of urinary infection and positive urine culture for a microorganism known to cause such disorders (bacterial count: 100,000 CFUs or more).

Likewise, 100% had clinical manifestations of the gastrointestinal mucosa. These manifestations may or may not correspond to allergic physiopathological processes of the membranes. Many of these patients presented clinical signs and symptoms of gastritis in the presence of acute respiratory infection (ARI); 5 of them presented gastric ulcer as established at endoscopy, coinciding with an acute episode of viral respiratory infection.

On the other hand, 61.9% of the female patients, regardless of age, showed clinical alterations of these mucosae, manifesting as vulvovaginitis and/or urinary infection.

CONCLUSION

The selected allergic patients with clinical manifestations of the respiratory tract were seen to possibly present simultaneous alterations of the gastrointestinal and/or genitourinary mucosal membranes.

DISCUSSION

The following syndromic manifestations simultaneously affect the mucosal membranes of the respiratory and/or gastrointestinal and/or genitourinary tracts, and partially or completely confirm the different clinical manifestations of **MUCOSAL INFLAMMATION SYNDROME**, as described for the first time in the present article. These observations were made in allergic outpatients or allergic individuals admitted to hospital, and their detection merits attention and sensitivity on the part of the supervising physician.

1. Girls with sinusitis and/or allergic rhinitis and/or pharyngitis, with concomitant vaginitis. Eventual ascending urinary tract infection.
2. Nursing infant (age under 3 months) with gastroesophageal reflux (GERD) (or underlying gastroenteritis) and nasal congestion (noisy nasal breathing) – this latter symptom often being observed before manifestations of GERD become apparent.

3. Rhinitis, sinusitis and asthma.
4. Upper respiratory tract allergy and esophago-gastroduodenitis.
5. Acute viral respiratory tract infection and gastritis and/or exacerbation of gastritis.
6. Immediate recurrence of GERD (or underlying gastroenteritis), associated with acute viral respiratory infections.
7. Sinusitis and soft stools with mucus and sometimes of a foul-smelling nature, in children under three years of age.
8. Acute viral respiratory tract infections with soft stools, and sometimes diarrhea.
9. Concurrence of tonsillitis with right iliac fossa pain simulating appendicitis or diffuse abdominal pain.
10. Viral respiratory infections and so-called mesenteric adenitis (diffuse abdominal pain concomitant to viral respiratory infection).
11. GERD (or underlying gastroenteritis) and chronic cough and/or asthma.
12. GERD and recurrent airway infections.
13. Geographic tongue and manifestations of upper respiratory allergy and/or gastroduodenitis.
14. Reappearance of geographic tongue with acute viral respiratory infections.
15. Posterior laryngitis (edema, leveling and erythema of the inter-arytenoid mucosa) and edema of Reinke (vocal cord edema), associated with GERD.
16. Urinary infection and/or vulvovaginitis associated with constipation.
17. Urinary infection and/or vulvovaginitis associated with allergic enteropathy.
18. Endometriosis in allergic women and allergic enteropathy and/or constipation.
19. While GERD of the nursing infant (generally under 6 months of age) reflects gastrointestinal mucosal disorders, it has been seen to exacerbate if the mother consumes dairy products, suffers inflammatory enteric disease (constipation, diarrhea), asthma crises, or acute viral respiratory infections.

The medical literature reports the partial concurrence of these manifestations:

- 77% of the adult asthmatic population experience symptoms of GERD.[1]
- 43% of asthmatic patients subjected to digestive tract endoscopy present esophagitis or Barrett's esophagus.[2]
- 20% of children with rhinitis develop asthma.[3]
- 50% of children with asthma develop rhinitis.[4]
- Marked association of sinusitis, asthma, laryngitis, pneumonia and bronchiectasia in patients with GERD (patients aged 2-18 years).[5]
- Clinical association of tonsillitis and right iliac fossa pain simulating acute appendicitis (involving patients needlessly subjected to appendectomy).[6] The importance of focusing attention on the global involvement of the mucosal membranes in a given patient is that the diagnostic and management approach should be holistic and individualized.

A lack of response to treatment on the part of pathology related to a given mucosal membrane in the context of allergic disease is seen on a daily basis in medical practice when necessary attention is not focused on other simultaneously affected mucosal membranes. The following may serve as examples:

1. A lack of surgical intervention to correct important adenoid hypertrophy implies frequent respiratory infections (viral, otitis, sinusitis).
2. Torpid course of asthma in patients with uncontrolled GERD (or underlying gastroenteritis).
3. Acute respiratory infections and the presence of GERD (or underlying gastroenteritis).
4. A lack of response in allergic patients with uncontrolled rhinitis.
5. Persistent asthma due to undiagnosed bacterial sinusitis.
6. Persistence of vaginal secretion and/or urinary infections in patients with constipation or allergic enteropathy.

In order to begin to modify old paradigms, allergic disease seen from this perspective would not be exclusive to the different sub-specialties, determined by the affected body organ. In effect, such conditions could be treated by all physicians, regardless of their specialty, provided thorough knowledge is gained in all spheres where allergy as a systemic disorder produces its devastating effects. Neglect in this context would be a sign of incompetence.

As an example, an ear, nose and throat (ENT) specialist could not treat rhinitis if the intestinal alterations are not first dealt with. Gynecologists or urologists likewise would not be able to treat a large percentage of cases of vulvovaginitis and urinary tract infections without first treating the respiratory allergies and intestinal disorders. In turn, pneumologists would not diagnose gastritis if not intentionally explored. The same considerations apply to the other medical specialties that deal with allergic processes.

This clinical approach involving physiopathological dependency of the mucosae in allergic disease would fully reorientate the current treatment established by conventional medicine; each mucosal membrane deals with somewhat different immunological information, though with crossed immune data among different membranes. As an example, a food allergen can produce digestive tract and respiratory symptoms at the same time.[7]

Food allergies can coincide with allergy produced by aeroallergens in up to 70% of cases[8], which increases the possibility of cross-reactions between foods with aeroallergens. This data implicates the intestine as an important antigen generating source – a fact that must be taken into account when treating an allergic patient, regardless of where the allergic process manifests. It is our experience that once a patient starts a correct diet, with good intestinal hygiene and environmental control, allergic processes largely disappear.

Another mistake in medical practice is to consider these symptoms as a disease. Such manifestations are actually symptoms or signs of allergic disease, and the correct diagnosis of an allergic patient should be based on the following premises: allergic disease with manifestations of esophagitis, gastritis, rhinitis, asthma, vulvovaginitis, etc. The practice of considering an organ isolatedly from the rest of the organism fails to take into account that the mucosal membranes share immunological information, and that alterations of one membrane can affect others.

Lastly, another aspect that deserves mention on the basis of the findings of the present study is that ascending urinary tract infection and vulvovaginitis may be related to alterations of nearby mucosal membranes – such as constipation or allergic enteropathy – or more distant mucosae, such as in the case of allergic rhinosinusitis. A number of studies already mention allergic disease as a cause of vulvovaginitis[9], and even establish a relation to dust mite allergy.[10] In my opinion, this problem is very common, though the medical literature does not yet report the situation as such.

It is hoped that the present study may serve as motivation for investigators to clarify the prevalence of this syndrome in allergic disease, to establish a new definition for the latter, and to explore the association between allergic pathology and other mucosal disorders such as GERD in the adult, vesicoureteral reflux, interstitial cystitis in the adult, constipation and endometriosis.

As a general conclusion, I am of the opinion that a clinical syndrome exists in allergic disease, which from the physiopathological perspective may partially or fully implicate the respiratory, gastrointestinal and genitourinary tracts, and that the medical literature has not yet recognized its relevance.

The scientific bases explaining the physiopathology of mucosal inflammation syndrome in allergic disease are based on the new concept of modern psycho-neuro-endocrino-immunology, which we hope to develop in the following issue pending publication.

The latest publications referring to allergies only view rhinitis and asthma as manifestations of one same process. The corroboration by other investigators of the simultaneous involvement of the mucosal membranes in the allergic patient would help confirm a new definition of allergic disease, and thus also promote a new approach to management.

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