

EDITORIAL

Asthma: relationships and mechanismsMaría G. Campos¹ and Blanca Bazán-Perkins²

It is not a coincidence that in the present issue of *Boletín Médico del Hospital Infantil de México* there are two articles published on asthma: Review Article “Relationship of obesity to asthma and lung function”¹ and the Biomedical Research paper “Evaluation of the expression of transcription factor Yin-Yang-1 and its association with TGF- β in a murine model of allergic lung inflammation with varying degrees of severity”².

The reason for the interest of researchers in asthma dates back centuries and, in a more formal manner, such interest has been documented since the studies of the late 19th century of Salter and Osler who described a peculiar paroxysmal dyspnea with intervals of normal breathing between attacks.³ Currently there are several causes that continue to motivate asthma research: its prevalence and complex pathophysiology as well the partial knowledge of its relationship with genetics, pharmacogenetics, gender, concomitant diseases and environmental and social risk factors.

The importance of asthma research is underscored by its prevalence, incidence, and comorbidity. Currently, asthma is the most common chronic disease among children in Western countries.⁴ Although the prevalence of asthma varies between 2 and 25% worldwide, in different cities of Mexico it ranges from 5 to ~12% in cities such as Mexico City and Merida, Yucatan, respectively. The incidence of asthma is higher in children and decreases during adolescence.⁵

Previous data on asthma combined with the increasing prevalence of obesity, particularly in Mexican children,⁶ make the asthma–obesity association a salient entity in pediatric practice. It is in this context that the review of Del Rio et al. with 102 references including those from the year 2010 is an excellent example for updating two of the most common diseases in children and whose association, as the authors report, is also epidemiologically documented in adults.¹

On the other hand, “the mechanisms involved in the pathogenesis of asthma remain unclear.” Those of us who have studied this disease have read this sentence in countless articles and try to keep up with the plethora of new proteins that are interwoven with some of the links in the complex pathophysiology of asthma. Díaz-Elizondo et al. took a multifunctional cytokine, transforming growth factor-beta (TGF- β) and an ubiquitous transcription factor, Yin Yang 1 (YY1) as a target of their investigation in search of their relationship, as well as the severity of allergic pulmonary inflammation.² Using a mouse model, they constructed a tissue microarray and identified the factors with immunohistochemistry. Of course, the choice of these two factors respects their link with asthma. TGF- β is

¹ Unidad Médica de Alta Especialidad, Hospital de Especialidades, Centro Médico Nacional Siglo XXI, Instituto Mexicano del Seguro Social, Mexico, D.F., Mexico

² Unidad de Investigación, Instituto Nacional de Enfermedades Respiratorias, México, D.F., Mexico

Correspondence: Dr. Blanca Bazán Perkins
Unidad de Investigación
Instituto Nacional de Enfermedades Respiratorias
México, D.F., Mexico
E-mail: blancaperkins@gmail.com

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increased in asthmatic individuals and more so in patients with status asthmaticus.⁷ Meanwhile, YY1, among many other actions, regulates cytokine gene expression in T cells as well as in allergic immune responses.⁸

Every effort made to further elucidate the intricate relationship between bronchoconstriction–inflammation–hypertissue remodeling–genetics–environment with the airways will always be welcome.

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