



Allergologia et immunopathologia

Sociedad Española de Inmunología Clínica,
Alergología y Asma Pediátrica

www.elsevier.es/ai



EDITORIAL

EARLY PROGRAMMING OF ASTHMA AND ALLERGY: IT IS TIME TO SERIOUSLY THINK OF PRIMARY PREVENTION



In the present issue of *Allergologia et Immunopathologia*, two papers (an original and a review) address the issue of early programming of asthma and allergy. This is not, of course, a new topic but deserves some consideration. The paper by Lijuan Quian et al.¹ shows how the separation of newborn mice from mothers immediately after birth is associated with changes in gut microbiota which, in turn, relate to asthma afterwards. The review by Sozańska² includes an updated information of the importance of microbiota, not only in the gut but also in the lungs, in the development of asthma and allergy. There is evidence enough to think that microbiome might determine the fate of the immunologic system to TH2 shifting from the very early stages of development.

The idea of asthma and allergic diseases, and maybe other emerging paediatric conditions such type 1 diabetes³, are “programmed” even in uterus is appealing. This hypothesis, with roots in the paper by Barker in 1989⁴ which showed that blood pressure in the adult age was related to mothers’ height, is crucial to primary prevention. The information obtained from several cohorts indicated that there are several risk and/or protective factors which can interfere with the immunological system and lung development. Preterm birth or smoking of mother during pregnancy are clearly related with later asthma in the offspring. Grandmother smoking in pregnancy, even with mother did not smoke, add a significant risk of asthma in the third generation⁵.

There is considerable and concordant information of what to avoid (tobacco smoke, for example) and what to do (breast feeding, for example), but there is lack of clinical trials which can shed some light as how we can actively prevent -at least in a certain proportion of cases- asthma and allergy. The Global Asthma Report 2018 (www.globalasthmareport.com) states that: “A number of factors may cause exacerbations in people who have asthma but there is no recognised cause, either biological or environmental, for asthma itself”. It is true that no individual cause has been identified as producing asthma or allergy as

it is quite possible that it is the interaction of several factors between each other and with the individual genetic burden at specific times of development which provokes asthma or allergy inception. Maybe this is the time of trying to actively control the environment in the early stages of development, by exposing groups of children to specific potential protective factors comparing them to those non-exposed. The results of a first clinical trial on primary prevention of wheezing called “Oral Bacterial Extract for the Prevention of Wheezing Lower Respiratory Tract Illness (ORBEX)” (<https://clinicaltrials.gov/ct2/show/NCT02148796>) are thus of great interest, as it is very well established that the more frequent and severe wheezing episodes in infancy, the more likelihood of suffering from asthma later in life.

References

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