EDITORIAL

PREVENTION IN PREGNANCY

Disease prevention has always been one of the challenges faced by medicine and the advances made are evident in more than a few chapters of pathology, especially those concerning infectious diseases. Hygiene measures and the development of vaccines have enabled many serious ailments to be eradicated and have reduced the incidence of many others.

The marked increase in the incidence of allergic diseases in the last few years has stimulated interest in establishing measures to reduce the number of allergic patients. However, prevention in allergology is difficult because the development of these processes involves two factors that are difficult to avoid – genetic predisposition and the participation of common exogenous elements, such as foods, aeroallergens and medication – in addition to environmental contaminants, which play a major role in the etiopathogenesis of respiratory disease. As most of these processes begin in childhood, it is on this period of life that most studies on prevention have focussed.

While still in the womb, the fetus already comes into contact with allergens, whether those ingested by the mother or environmental aeroallergens, which are abundant in the home. These aeroallergens pass through the placenta and come into contact with the fetus which produces IgE from as early as the 11th week. The probability that the fetus will become sensitized to these allergens, in what form, and the possible consequences remain to be elucidated, since the possibility that these allergens play a protective role, contributing to the normal development of immunity, has been suggested[1]. Nevertheless, the possibility of prevention in pregnancy has not been ruled out, although little has been achieved to date.

Years ago, preventive measures centered on a milk- and egg-free diet in the third trimester of pregnancy in atopic women with offspring at high risk for allergy. The incidence of allergic diseases in the children of women who followed this diet was no lower than those with mothers who did not, suggesting that genetic factors might have a greater influence than food antigens that can pass through the placenta. Consequently, this type of prevention was abandoned after the first few experiences[2,3].

More hopeful are the results of a recently published original study, based on the administration of fish oil, which is rich in n-3 polyunsaturated fatty acids (n-3 PUFAs) in the last few months of pregnancy[4]. The expectant mothers ingested 4 g/day of fish oil, while the control group took an equal quantity of olive oil (n-6). At delivery, the content of both fatty acids in the erythrocyte membrane was evaluated in umbilical cord blood. Levels of n-3 were found to be significantly higher in the first group of neonates than in the control group while n-6 levels were higher in the control group. In the supernatant obtained after stimulation of mononuclear cells (T lymphocytes) with PHA and several allergens (house dust mite, ovalbumin, cat epithelium), lower cytokine levels (IL-5, IL-13, IL-10 and IFNγ) and a lower response to PHA were found in the n-3 group than in the control group, although the level of significance was not high. The authors evaluated the clinical status of these children at one year of age and found a higher incidence of allergic disease (food allergy, asthma, atopic dermatitis, anaphylaxis, angioedema) in the n-3 group as well as a lower number of positive skin prick tests to common allergens. The authors stress the antiinflammatory properties of n-3 fatty acids, unlike those of n-6 fatty acids, which are proinflammatory. The results of this pioneer study should be confirmed, possibly with different doses of fish oil or earlier intake.

Other studies have aimed to determine the effect of reducing common aeroallergens in the environment of pregnant women. Although primary sensitization of the fetus to allergens inhaled by the mother has been demonstrated[5], it seems that maternal exposure to these allergens in pregnancy is less likely to cause sensitization in offspring than exposure to these allergens in the first few years of life[6].

Lastly, smoking during pregnancy has been shown to cause alterations in fetal lung development, leading to deterioration in lung function, which is aggravated if the mother continues to smoke after delivery[7,8]. Consequently, the need for pregnant women to quit smoking for the sake of the child must be stressed, and even more so if the unborn child is at risk for atopy.

In conclusion, one of the challenges of allergology undoubtedly lies in the earliest prevention possible of processes that, once established, are irreversible, especially when they affect the respiratory system. Any attempts at prevention in pregnancy should be welcomed and thoroughly investigated.

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