EDITORIAL

IS THERE A PARALLEL RELATION BETWEEN THE INCREASED INCIDENCE OF OBESITY AND ASTHMA?

Obesity is a common problem in the industrialized world and it has a variety of effects on the cardiovascular and respiratory systems. Obese subjects have a diminished respiratory capacity, possibly due to different mechanisms. On the one hand, fat accumulation compresses the lungs, which effects diaphragmatic and thoracic mobility. On the other hand, obesity affects alveolar diffusion capacity (D_{LCO}). De Lorenzo et al (1) evaluated the accumulation and distribution of fat tissue, fat-free body mass (FFBM), and respiratory function in a group of obese adults who underwent a controlled low-calorie diet that had a composition similar to that of the so-called "Mediterranean diet". Tests made before beginning the diet and three months later confirmed the loss of fatty tissue, especially on the trunk, without loss of FFBM, as well as a significant improvement in respiratory function. Respiratory function parameters (VC, ERV, MVV, PEF, FEV_1) had been lower than normal before the diet. In obese non-asthmatic children, Inselman et al (2) confirmed that, in relation with theoretical values for sex, age, and height, the expiratory reserve volume, FEV_1, FEF_{25-75}, MVV, and absolute and corrected D_{LCO} were reduced. The authors associated this abnormality in alveolar diffusion with possible structural alterations of the lung interstice by lipid deposition and/or a reduction in alveolar surface area. However, in adults, Bring et al (3) confirmed similar changes in spirometric parameters but found no changes in D_{LCO} values, which may mean that obesity affects adults and children differently.

The bronchial obstruction observed in these studies as a result of reduced FEV_1 and FEF_{25-75}, which remitted with bronchodilator inhalation, denotes enhanced broncholability in some patients in spite of the absence of obstructive disease.

In obese asthmatics, excess weight has been observed to have a negative effect on the evolution of respiratory disease. Excess weight in newborns has been associated with obesity at the pubertal and adult ages, and with a greater incidence of asthma. This relation is closer in females (4).

The prevalence of obesity has been shown to have increased in industrialized countries. In the last 30 years in the US the number of obese adolescents has doubled to the current percentage of 11%, and is even higher among persons of Mexican origin (14.6%) and African Americans (from 16% to 29.9% in three decades) (5). Similarly, in Sweden, a typical industrialized European country, a study of 18 year-old males has shown a similar increase (2.4%) and a range of 6.9% in the 1960s to 16.3% at present (6).

In the study by Del Río-Navarro et al (7) that appears in this issue of Allergologia et Immunopathologia, the coincidence between the increased percentage of obese young people and the increased frequency of asthma is examined. Both trends are observed in industrialized countries and they coincide with other factors suspected to contribute to the increase in asthma, such as air pollution and other vehicular and industrial irritants. Nonetheless, the increased numbers of patients diagnosed as asthmatics may also be influenced by recent changes in the concept of this disease (8).

It is obvious that obesity should be considered as a disease that can contribute to other serious processes, such as cardiovascular disease, diabetes (9), or asthma. There is no doubt that the prevention of these diseases could begin by preventing obesity, which has become a social and economic problem with severe effects on the economy, estimated at 99 billion dollars in the US in 1995 (5). Therefore, the prevention of obesity should be a goal of health care in the countries where it is increasing. Campaigns to inform the public of the benefits of moderating eating habits and to promote the consumption of products that prevent obesity could be useful. Moreover, diet can help to prevent respiratory disease, as suggested by the work of Tabak et al (10), who found that respiratory function improves with the consumption of food rich in antioxidants (vitamins C and E and β-carotenes), such as fruits and vegetables.

Consequently, the question of whether the increase in number of obese persons in industrialized countries could be one of the reasons why an almost parallel increase is being observed in the number of cases of asthma diagnosed annually is one that merits attention.

F. Muñoz-López

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