



Will Research on COVID-19 Stimulate the Identification of Immunological Mechanisms Underlying Some Protective Effects?

To the Editor:

The study by Broadhurst and colleagues appears to be of the utmost importance in indicating new models of investigation to identify risk factors for the development of given diseases. Actually, the findings of the study suggest that asthma prevalence in patients hospitalized with coronavirus disease (COVID-19) is comparable to general asthma prevalence and that asthma does not appear to be an independent risk factor for intubation in patients with COVID-19. The authors hypothesize that this may be related to the distribution of the ACE2 receptor in the respiratory airway epithelium, which is involved, especially in allergic asthma, with viral entry (1). Of interest, in the guideline for asthma diagnosis from the UK National Institute for Health and Care Excellence, it has been stated that allergic asthma, that is, associated with atopy, with IgE production toward common environmental allergens, is by far more common than nonallergic asthma, with a prevalence of about 80% (2).

In 1998, Del Prete introduced the concept that the subset of T-helper 2 (Th2) lymphocytes through their particular cytokine production pattern, which is dominant in allergic subjects, can exert a preventive effect on other diseases. In fact, in experimental studies, it was observed that switching the immune response from the Th1 to Th2 pattern could prevent the development of a number of pathologies (3). The most clinically investigated disease is cancer. In limiting interest to more recent studies, Bożek and colleagues, by studying a group of 11,101 women suffering from different types of breast cancer, found that patients with breast cancer had a significantly lower incidence of IgE-mediated allergic diseases than the control subjects. Also, mean serum concentrations of total IgE antibodies were significantly lower in women with breast cancer than in the control group. The authors concluded that the incidence of allergies is lesser in patients with certain types of cancer, though further studies are needed to confirm such observation (4). This need was met by a position paper from the European Academy of Allergy and Clinical Immunology published on July 2020. This document reviewed the available data on the risk of malignancies related to IgE levels, concluding that very low IgE levels may hamper antitumor surveillance. In particular, ultra-low IgE is likely to be an unexpected biomarker for cancer risk.

Even in this study, the authors suggest the need for in-depth mechanistic studies and cancer risk stratification based on demographic and immunological characteristics and possible clinical cofactors (5).

The observation by Broadhurst and colleagues of a low risk of COVID-19 disease and particularly of its respiratory complications suggest the need to expand the investigation on a potential protective role of allergy. For example, studies comparing the severity of COVID-19 in patients with allergic and nonallergic asthma or stratifying the risk of COVID-19 in allergic patients according to IgE level may have the potential to recognize crucial prognostic indications.

Author disclosures are available with the text of this letter at www.atsjournals.org.

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