

# The psychopathological scenario in asthma

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<http://dx.doi.org/10.1590/1806-9282.66.10.1>

Dear Editor,

According to recently published data in Portugal, respiratory diseases are the 5<sup>th</sup> leading cause of hospitalization, the 1<sup>st</sup> leading cause of intra-hospital mortality, and the 3<sup>rd</sup> leading cause of mortality (preceded by cardiovascular and oncological diseases)<sup>1</sup>.

Asthma is a respiratory disease characterized by chronic and heterogeneous airway inflammation, defined by a constellation of respiratory symptoms such as wheezing, dyspnea, chest tightness, and coughing. The symptoms are diverse in their frequency and intensity and are associated with a variable limitation of expiratory flow<sup>2</sup>. The prevalence of asthma is high, particularly in pediatric and young adult patients.

As a potentially disabling chronic disease with high expression at a young age, the importance of early intervention is highlighted to guarantee symptomatic control. This involves a complex process of adaptation and implies adherence to a therapeutic plan that includes pharmacological and non-pharmacological measures.

The diagnosis of a chronic disease leads to a set of changes in social, professional and personal roles, which increases the vulnerability to psychopathology. The psychological component influences the respiratory condition, namely: i) the onset of asthmatic crises; ii) the persistence/worsening of

symptoms during the crises; and iii) resistance to pharmacotherapy. The presence of anxious and depressive symptoms can negatively influence the clinical outcome, contributing to: i) worse quality of life, ii) less adherence to drug therapy; iii) greater severity of symptoms; iv) greater functional deficit; v) increased frequency and therapeutic dosage; vi) greater use of health services; and vii) reduction of average life expectancy.

In reverse, asthma as a chronic and disabling disease can be a triggering factor for anxiety and/or depressive disorders.

There are some immunological pathways that explain the relationship between these disorders. Chronic elevation of cortisol in stressful situations leads to greater resistance to the anti-inflammatory effects of glucocorticoids<sup>3</sup>. There is a specific increase in the cytokines IL-1 $\beta$  and IL-6, which are related to neurodegeneration<sup>4</sup>. This is a risk factor for systemic and/or airway inflammation in asthma<sup>5</sup>. Another cytokine involved in inflammatory responses, such as alpha interferon (IFN- $\alpha$ ), can contribute to glucocorticoid resistance by decreasing the function of glucocorticoid receptors. It leads to fatigue in individuals with depression<sup>6</sup>.

Additionally, a depressive mood is related to an increase in the fraction of exhaled nitric oxide (FeNO)

DATE OF SUBMISSION: 24-Apr-2020

DATE OF ACCEPTANCE: 25-Apr-2020

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in asthma<sup>7</sup>. On the other hand, excess glucocorticoids in asthma can also activate immune pathways, which increase the vulnerability to psychopathology<sup>6</sup>.

The rate of adherence to treatment for patients with asthma is relatively low, occurring in just about 30% of cases<sup>8</sup>. Asthma treatment guidelines such as GINA or the latest revision of the Clinical Guidance Standard of the General Directorate of Health on monitoring and treatment for asthma control, recommend building a good doctor-patient relationship, which improves adherence and prognosis.

Thus, there is a close correlation between psychiatric comorbidity and worse clinical outcomes in asthma, and a better understanding of this association may have a significant clinical impact. There is a need for an integrated care response, with medical and psychiatric guidance combined in a multidisciplinary approach, with effective clinical communication of an individualized plan and a consequent potential reduction in hospital costs.

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