Autonomic dysfunction in patients with chronic obstructive pulmonary disease (COPD)

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It has been recognized that chronic obstructive pulmonary disease (COPD) is a systemic disease which has been shown to negatively affect the cardiovascular and autonomic nerve system. The complexity of the physiologic basis by which autonomic dysfunction occurs in patients with COPD is considerable and the knowledge in this field remains elementary. The purpose of this review is to provide an overview of important potential mechanisms which might affect the autonomic nervous system in patients with COPD. This review aims to summarize the basic research in the field of autonomic dysfunction in patients with COPD. In COPD patients the activity of sympathetic nerves may be affected by recurrent hypoxemia, hypercapnia, increased intrathoracic pressure swings due to airway obstruction, increased respiratory effort, systemic inflammation and the use of betasympathomimetics. Furthermore, experimental findings suggest that autonomic dysfunction characterized by a predominance of sympathetic activity can significantly modulate further inflammatory reactions. The exact relationship between autonomic dysfunction and health status in COPD remains to be elucidated. Treatment aimed to restore the sympathovagal balance towards a reduction of resting sympathetic activity may modulate the inflammatory state, and possibly contributes to improved health status in COPD.

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