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The dual bronchodilation role in chronic obstructive pulmonary disease - evidence-based review

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Background and Aim: Chronic Obstructive Pulmonary Disease (COPD) reaches 14.2% of Portuguese population over 40 years old. It is characterized by persistent airflow obstruction, with chronic and progressive dyspnea, cough and sputum production, with impact on daily activities and quality of life. Exacerbations are an acute event characterized by a worsening of the patient's respiratory symptoms, associated with an accelerated decline in lung function and mortality increase. This review aims to determine, in the light of current evidence, the effectiveness of dual bronchodilation (anticholinergic and beta-agonist long-acting) in the treatment of COPD, compared with monotherapy, in dyspnea improvement, reduction of exacerbations and quality of life improvement.

Methods: It was performed a research of clinical guidelines, meta-analyses, systematic reviews and randomized clinical trials. MeSH terms were used "Pulmonary Disease, Chronic Obstructive", "Muscarinic Antagonists", "Receptors, Adrenergic, beta-2", "Drug Therapy, Combination" and "Bronchodilator Agents", published from January 2005 to October 2015, in English, French, Spanish and Portuguese.

Results: From 145 articles, five met review inclusion criteria. A clinical trial comparing dual bronchodilation (olodaterol plus tiotropium) with tiotropium monotherapy demonstrated significant improvement in lung function in the first group as well as in clinical status, but not enough to be considered clinically relevant (level of evidence 1). The four guidelines included demonstrated improvement in pulmonary function with dual bronchodilation, however, the clinical relevance of this benefit is not clear, such as in dyspnea, quality of life and exacerbations rate (strength of recommendation B to one of these, and A to the other three).

Conclusions: There is evidence of improvement in lung function with dual bronchodilation, but the clinical benefit is not clear (strength of recommendation A). It is necessary to perform more high quality studies, with homogeneous methodology and relevant samples, which support the evidence of patient-oriented outcomes improvement.