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Impact of dupilumab on the management of COPD with type 2 inflammation: a systematic review

Ana Julia Vilela Soares Oshiro, Alfredo Lazarini, Angélica Jelezoglo, Victor Feitoza Dos Santos, Luis Paulo Tonioli
Centro Universitário FMABC, Santo André, Brazil
ana.oshiro@aluno.fmabc.net

INTRODUCTION: Chronic obstructive pulmonary disease (COPD) is a progressive, heterogeneous condition characterized by persistent respiratory symptoms resulting from structural changes in the airways. Among the different inflammatory phenotypes associated with COPD, type 2 inflammation is notable. It is mediated by Th2 lymphocytes and characterized by the release of cytokines such as IL-4, IL-5, and IL-13, together with increased circulating eosinophils. Dupilumab is a human monoclonal antibody that acts as an antagonist of the shared interleukin-4 and interleukin-13 receptor, blocking the type 2 inflammatory cascade. This study aimed to assess the efficacy of dupilumab in the treatment of COPD with type 2 inflammation. **METHOD:** This systematic review followed the PRISMA protocol. Structured searches were conducted in PubMed, the Cochrane Library, and LILACS using combinations of controlled terms related to COPD and dupilumab and adapted to each database. Randomized clinical trials published in English, Spanish, or Portuguese during the previous five years were included. Screening proceeded in four phases: duplicate removal, title screening, abstract review, and full-text analysis of eligible studies. **RESULTS:** The search identified 151 articles, two of which met the inclusion criteria: the BOREAS and NOTUS clinical trials. Both showed a significant reduction in the annual rate of moderate or severe exacerbations with dupilumab (0.78 events/patient/year) versus placebo (1.1); exacerbations were defined as events requiring systemic corticosteroids, antibiotics, or hospitalization. Lung function also improved, with FEV1 increases of up to 83 mL in BOREAS and 90 mL in NOTUS, as did quality of life, with lower SGRQ and E-RS:COPD scores. **DISCUSSION:** Dupilumab was effective in patients with COPD associated with type 2 inflammation, reducing exacerbations and improving lung function (FEV1) and quality of life. The BOREAS and NOTUS studies confirmed these benefits even among patients receiving optimized triple therapy. **CONCLUSION:** Dupilumab was effective as an add-on to standard treatment. Future studies with longer follow-up and larger samples are needed to definitively confirm these findings.

KEYWORDS: Chronic obstructive pulmonary disease; Type 2 inflammation; Dupilumab; Biologic therapy.