Dupilumab Reduces Exacerbations While Improving Lung Function And Quality Of Life In Patients With Chronic Obstructive Pulmonary Disease And Type 2 Inflammation, Regardless Of Smoking Status

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COPD

Conclusion

Dupilumab, compared with placebo, reduced exacerbations and improved lung function, quality of life, and symptoms in patients with COPD and type 2 inflammation, regardless of baseline smoking status

Objective

This post hoc analysis of pooled data from BOREAS and NOTUS evaluated the efficacy of dupilumab in current and former smokers with COPD and type 2 inflammation

Background

- Smoking is a key risk factor for COPD,[1] and approximately 70% of COPD cases in high-income countries and 30–40% of cases in low-to-middle-income countries are attributable to smoking[2]
  - Smoking detrimentally affects the treatment efficacy of COPD medications, particularly ICS and macrolides[3]
- In BOREAS and NOTUS, add-on dupilumab vs placebo reduced moderate or severe exacerbation rates and improved lung function and quality of life in patients with COPD and type 2 inflammation[4–6]
  - Safety was consistent with the known dupilumab safety profile[4–6]

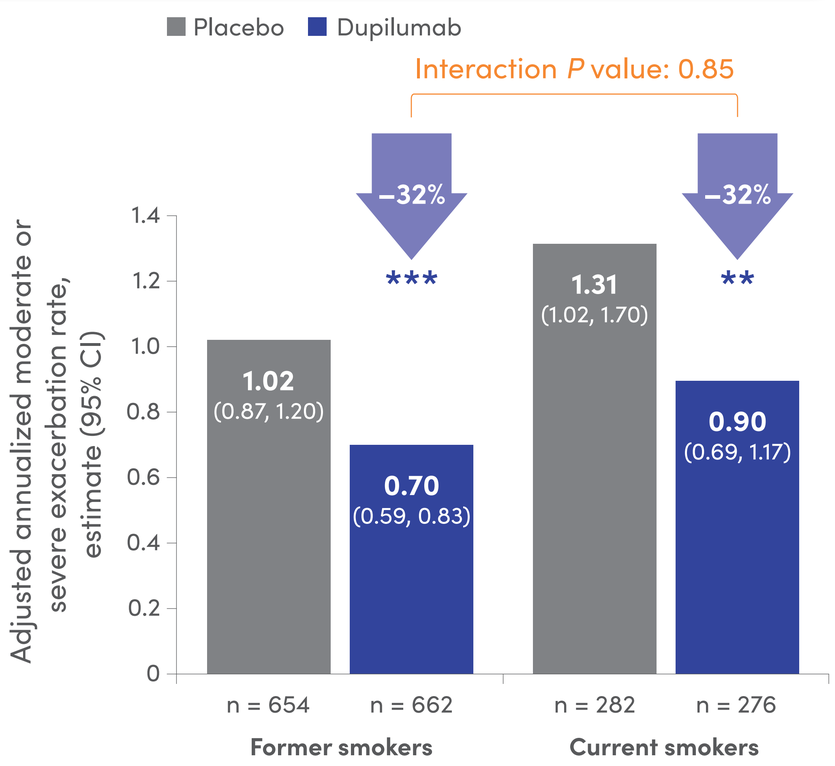
Methods

- BOREAS (NCT03930732) and NOTUS (NCT04456673), two phase 3, randomized, double-blind, placebo-controlled trials, enrolled patients (40 to 85 years[a]) with COPD, moderate-to-severe airflow limitation, and type 2 inflammation (screening blood eosinophil counts ≥300 cells/µL) on ICS/LABA/LAMA[b,4,5]
  - Patients received add-on subcutaneous dupilumab 300 mg or matched placebo q2w for 52 weeks[4,5]
- Endpoints assessed in former and current smokers were annualized moderate and severe exacerbation rates during the 52-week treatment period; change from baseline in pre- and post-bronchodilator FEV_1 at Weeks 12 and 52; and changes from baseline in quality of life (SGRQ) and symptom burden (E-RS:COPD total scores) at Week 52 (with lower scores indicating improved health-related quality of life and respiratory symptoms)

[a]Age criteria for BOREAS: 40 to 80 years; for NOTUS: 40 to 85 years. [b]Unless ICS is contraindicated.

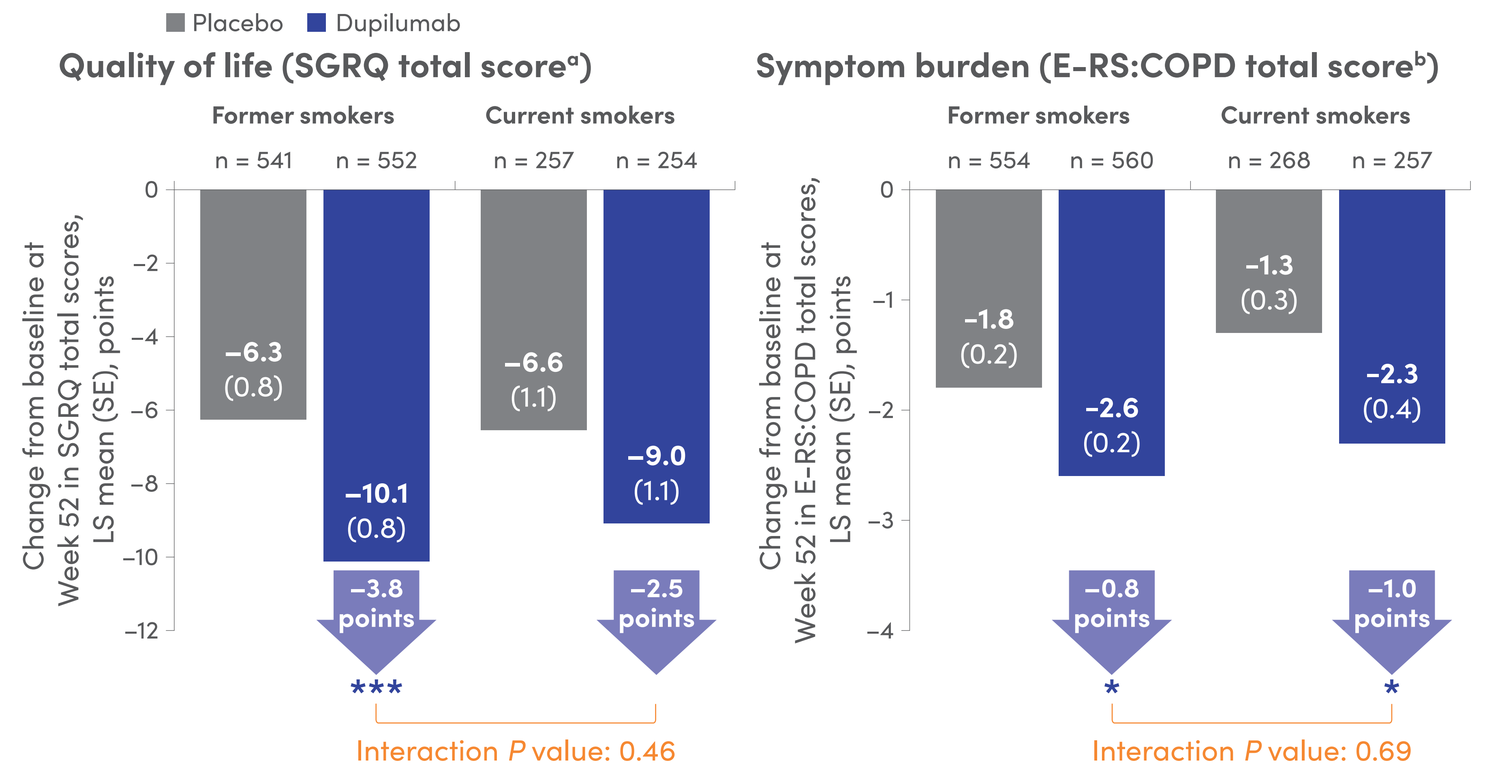
Results

Dupilumab vs placebo significantly reduced exacerbation rates in patients with COPD, regardless of baseline smoking status



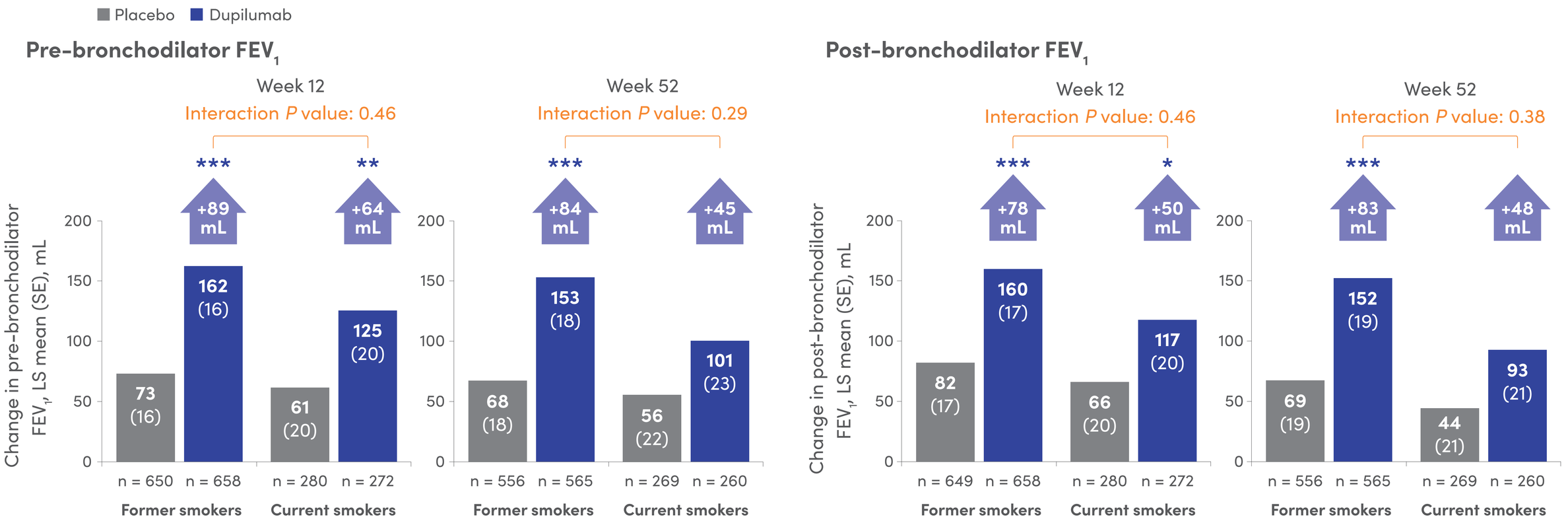
***P < 0.001; **P < 0.01 vs placebo. All P values are nominal. Baseline characteristics were generally comparable between dupilumab and placebo arms, within each smoking subgroup.

Dupilumab vs placebo improved quality of life and symptom burden in patients with COPD, regardless of baseline smoking status



***P < 0.001; **P < 0.01; *P < 0.05 vs placebo. All P values are nominal. [c]SGRQ total score ranges from 0 to 100, with lower scores indicating a better quality of life. [b]ERS:COPD total score ranges from 0 to 40, with a lower score indicating less severe symptoms.

Dupilumab vs placebo improved lung function in patients with COPD, regardless of baseline smoking status



***P < 0.001; **P < 0.01; *P < 0.05 vs placebo. All P values are nominal.

COPD, chronic obstructive pulmonary disease; E-RS:COPD, Evaluating Respiratory Symptoms in COPD; FEV_1, forced expiratory volume in 1 second; ICS, inhaled corticosteroid(s); ITT, intention-to-treat; LABA, long-acting β_2-agonist(s); LAMA, long-acting muscarinic antagonist(s); q2w, every 2 weeks; SGRQ, St. George's Respiratory Questionnaire.

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Acknowledgments and funding sources: The authors thank Jigna Heble (Sanofi, Morristown, NJ, USA), as well as Jayeeta Pal, M Naresh Devisetty, Aditi Sarkar, and Siva Durga Prasad Sattu (Sanofi, Hyderabad, India) for their contributions to this work. Research sponsored by Sanofi and Regeneron Pharmaceuticals Inc. ClinicalTrials.gov Identifiers: NCT03930732 and NCT04456673. A portion of the results presented at ISPOR EU 2026 have also been presented at ERespS 2026 and APSR 2026. Medical writing support, under the direction of the authors, was provided by Nikita Subedi, PhD, employee of the Publications and Medical Affairs Division of Omnicom Health Medical Communications, funded by Sanofi and Regeneron Pharmaceuticals Inc. in accordance with the Good Publication Practice (GPP 2022) guidelines.

Disclosures: Bhatt SP: The author is supported by NIH grants R01HL151421 and UH3HL155806. Apreo, AstraZeneca, Boehringer Ingelheim, Chiesi, Connect Biopharma, Genentech, GSK, Kymera, Merck, Polarean, Regeneron Pharmaceuticals Inc., Sanofi, Uniquity, Verona – advisory boards or consultant; Horizon CME, illuminate.health, Integritas Communications, Integrity CE, Medscape – honoraria; Apreo, AstraZeneca, Connect Biopharma, COPD Foundation, Genentech, Nuvaira, Sanofi, Uniquity – funds paid to institute for research **Brusselle G:** AstraZeneca, Boehringer Ingelheim, Chiesi, GSK, Novartis, Sanofi, Teva – consultant, speaker fees. **Backman H:** Chiesi – consultancy fee. **Papi A:** AstraZeneca, Chiesi, GSK, Sanofi – payments to institution; AstraZeneca, Avillion, Chiesi, GSK, Moderna, Roche, Sanofi – consultancy fees; AstraZeneca, Avillion, Chiesi, GSK, IQVIA, Moderna, Roche, Sanofi, Zambon – payment or honoraria for lectures, presentations, speakers' bureaus, manuscript writing, or educational events. **Sugiura H:** AstraZeneca, Boehringer Ingelheim, GSK, Sanofi – advisory board and speaker fees. **Watz H:** AstraZeneca, Bayer, Boehringer Ingelheim, Chiesi, GSK, Novartis, Sanofi, Takeda – consultant, travel, speaker fees. **Saha-Chaudhuri P, Djandji M:** Sanofi – employees, may hold stock and/or stock options in the company. **Soliman M:** Regeneron Pharmaceuticals Inc. – employee and shareholder. **Wedzicha JA:** Aerogen, AstraZeneca, Boehringer Ingelheim, Chiesi, EpiEndo, Glenmark, GSK, NEATstik, Novartis, Pfizer, Recipharm, Roche, Regeneron Pharmaceuticals Inc., Sanofi, Verona Pharma – honoraria for consulting or lectures; 37 Clinical, AstraZeneca, Boehringer Ingelheim, Chiesi, Genentech, GSK, Novartis – grant support.

Presented at the International Society for Pharmacoeconomics and Outcomes Research Europe (ISPOR EU) 2026 Annual Congress; Vienna, Austria; November 8–11, 2026.