|  |
| --- |
| **Dupilumab for COPD with Type 2 Inflammation (Elevated Eosinophils)** |
| Jana Moody1\*, Philip Bardin2\*, Surya P. Bhatt3, Klaus F. Rabe4, Nicola A. Hanania5, Claus Vogelmeier6, Jeremy Cole7, Mona Bafadhel8, Stephanie A. Christenson9, Alberto Papi10, Dave Singh11, Elizabeth Laws12, Xin Lu12, Deborah Bauer12, Eric Mortensen13, Jennifer Maloney13, Ashish Bansal13, Lacey B. Robinson14, Raolat M. Abdulai14 |
| *1Sanofi, New South Wales, Australia**2Monash Lung Sleep Allergy & Immunology, Monash Health and University, Melbourne, VIC, Australia; Hudson Institute, Melbourne, VIC, Australia3Division of Pulmonary, Allergy and Critical Care Medicine, University of Alabama at Birmingham, Birmingham, AL, USA4LungenClinic Grosshansdorf, Grosshansdorf, Germany; Christian Albrechts University of Kiel, Airway Research Center North, German Center for Lung Research, Grosshansdorf, Germany5Section of Pulmonary and Critical Care Medicine, Baylor College of Medicine, Houston, Texas6Department of Medicine, Pulmonary and Critical Care Medicine, Philipps-Universität Marburg, German Center for Lung Research (DZL), Marburg Germany7OK Clinical Research, Edmond, OK, USA8King’s Centre for Lung Health, School of Immunology and Microbial Sciences, Faculty of Life Sciences and Medicine, King’s College London, United Kingdom9Division of Pulmonary, Critical Care, Allergy & Sleep Medicine, University of California, San Francisco, San Francisco, CA, USA10University of Ferrara, Ferrara, Italy11Manchester University NHS Foundation Trust, University of Manchester, Manchester, United Kingdom12Sanofi, Bridgewater, NJ, USA13Regeneron Pharmaceuticals Inc., Tarrytown, NY, USA14Sanofi, Cambridge, MA, USA* |
| **Introduction/Aim:** Dupilumab (DPL), a fully human mAb, blocks the shared receptor component for IL-4 and IL-13, key/central drivers of Type 2 (T2) inflammation. The aim of this analysis was todetermine efficacy/safety in patients with moderate-to-severe COPD with T2 inflammation.**Methods:** BOREAS (NCT03930732) was a 52-week (wk), phase 3, randomized, double-blind, placebo (PBO)-controlled trial of efficacy/safety of biweekly DPL 300mg in COPD pts with blood eosinophils ≥300cells/µL at screening, on triple therapy (an inhaled corticosteroid [ICS], long-acting β2-agonists [LABA], and long-acting muscarinic antagonists [LAMA]; or LABA/LAMA if ICS was contraindicated) without asthma diagnosis/history. Primary endpoint: annualized rate of moderate-severe exacerbations. Secondary/other endpoints: change from baseline (BL) in pre-bronchodilator FEV1 atwk 12 and wk 52; cumulative exacerbations over time; safety.**Results:** 939 participants were randomized to PBO (N=471) or DPL (N=468). DPL reduced exacerbation rates by 30% vs PBO (p=0.0005). DPL significantly increased pre-BD FEV1 at wk 12 (LSM difference vs PBO: 83mL, p<0.0001); sustained through wk 52 (83mL, p=0.0003). This trended towards reduced exacerbation-associated annualized total SCS treatment duration for DPL (13.57 days [SD 13.17]) vs for PBO (19.09 days [SD 20.65]). Safety similar in DPL and PBO groups; TEAEs balanced.**Conclusion:** DPL significantly improved moderate-severe exacerbations, lung function, quality of life, and symptoms in COPD patients with T2 inflammation. The use of SCS days required for the treatment of AECOPD trended lower with DPL.**Grant Support:** \*Presenting on behalf of authors. Data first presented at the European Respiratory Society International Congress (ERS 2023); Milan, Italy; September 9-13, 2023. Research was sponsored by Sanofi and Regeneron Pharmaceuticals Inc. Medical writing/editorial assistance was provided by Luke Ray, Ph.D., of Excerpta Medica, and was funded by Sanofi and Regeneron Pharmaceuticals Inc., according to the [Good Publication Practice guidelines](https://www.acpjournals.org/doi/10.7326/M22-1460).**Keywords:** Dupilumab, COPD, type 2 inflammation, efficacy, quality of life, safety |

**Disclosures: Bardin P:** has received honoraria from GSK, AstraZeneca and Sanofi for educational activities. **Bhatt SP**: NIH – grant support, Boehringer Ingelheim, Regeneron Pharmaceutical, Inc. – consultant; IntegrityCE – Honorarium. **Rabe KF**: AstraZeneca, Boehringer Ingelheim, Chiesi, Gilead, GSK, Novartis, Pearl, Sanofi, Teva – consultant, speaker fees and advisory board member; co-founder of rnatics, Germany. **Hanania NA:** Received honoraria for serving as a consultant or advisor for GSK, Boehringer Ingelheim, Sanofi, Teva, Amgen, Astra Zeneca, Novartis. His institution received research grant support from AstraZeneca, GSK, Sanofi, Genentech, Novartis, and Boehringer Ingelheim. **Vogelmeier C**: CV gave presentations at symposia and/or served on scientific advisory boards sponsored by Aerogen, AstraZeneca, Boehringer Ingelheim, Chiesi, CSL Behring, GlaxoSmithKline, Grifols, Insmed, Menarini, Novartis, Nuvaira, Roche, and Sanofi. **Cole J**: No disclosures to report. **Bafadhel M:** Grant funding to institution from AstraZeneca and Roche; consultancy and speaker honoraria to institution from AstraZeneca, Chiesi, GSK; scientific advisor to ProAxsis® and AlbusHealth®**. Christenson S:** reports grant funding to institution from the National Institutes of Health (NIH) and Merck; consulting fees paid from AstraZeneca, GlaxoSmithKline, and Glenmark Pharmaceuticals; payment and honoraria paid from AstraZeneca, Sanofi/Regeneron, Genentech, and Sunovion; and participation in advisory boards or Data and Safety Monitoring Boards (DSMBs) for AstraZeneca, GlaxoSmithKline, Sanofi/Regeneron, and Glenmark Pharmaceuticals. **Papi A:** Payments to his institution from Chiesi, AstraZeneca, GlaxoSmithKline and Sanofi; consultancy fees from Chiesi, AstraZeneca, GlaxoSmithKline, Novartis, Sanofi, Iqvia, Avillion, and Elpen Pharmaceuticals, and payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from Chiesi, AstraZeneca, GlaxoSmithKline, Menarini, Zambon, Mundipharma, Sanofi, Edmond Pharma, Iqvia, MSD, Avillion, and Elpen Pharmaceuticals.**Singh D**: Consultancy fees and honoraria from Aerogen, AstraZeneca, Boehringer Ingelheim, Chiesi, Cipla, CSL Behring, EpiEndo, Genentech, GlaxoSmithKline, Glenmark, Gossamer Bio, Kinaset Therapeutics, Menarini, Novartis, Orion, Pulmatrix, Sanofi, Teva, Theravance Biopharma, and Verona Pharma.**Laws E, Lu X, Bauer D, Robinson L, Moody J, Abdulai R**: Sanofi – employees, may hold stock and/or stock options in the company. **Mortensen E, Maloney J, Bansal A:** Regeneron Pharmaceuticals Inc. – employees and shareholders.