



# Effect of exacerbation history on clinical response to dupilumab in moderate-to-severe uncontrolled asthma

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**Dupilumab reduced severe exacerbations and improved lung function and asthma control in patients with type 2-high asthma, irrespective of exacerbation history and baseline ICS dose. These data will aid clinicians managing patients with severe disease.** <https://bit.ly/2PjnSm6>

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## Abstract

**Background** The phase 3 LIBERTY ASTHMA QUEST study (ClinicalTrials.gov: NCT02414854) in patients with uncontrolled, moderate-to-severe asthma has demonstrated the efficacy and safety of dupilumab 200 and 300 mg every 2 weeks *versus* placebo. This *post hoc* analysis assessed the effect of dupilumab on efficacy outcomes and asthma control across a range of historical exacerbation rates in patients with type 2-high asthma.

**Methods** Annualised severe exacerbation rates over the 52-week treatment period, pre-bronchodilator forced expiratory volume in 1 s (FEV<sub>1</sub>) at weeks 12 and 52, and the five-item Asthma Control Questionnaire (ACQ-5) score at weeks 24 and 52 were assessed in patients with  $\geq 1$ ,  $\geq 2$  or  $\geq 3$  exacerbations in the previous year. Subgroups were stratified by baseline blood eosinophils  $\geq 150$  or  $\geq 300$  cells· $\mu\text{L}^{-1}$  or baseline exhaled nitric oxide fraction  $\geq 25$  ppb and baseline inhaled corticosteroid (ICS) dose.

**Results** Across all type 2-high subgroups, dupilumab *versus* placebo significantly reduced severe exacerbations by 54–90%, with greater improvements in patients with more exacerbations prior to study initiation. Similarly, improvements in FEV<sub>1</sub> (least squares (LS) mean difference *versus* placebo:  $\geq 1$  exacerbations, 0.15–0.25 L;  $\geq 2$  exacerbations, 0.12–0.32 L;  $\geq 3$  exacerbations, 0.09–0.38 L; majority  $p < 0.05$ ) and ACQ-5 score (LS mean difference range:  $\geq 1$  exacerbations, –0.30 to –0.57;  $\geq 2$  exacerbations, –0.29 to –0.56;  $\geq 3$  exacerbations, –0.43 to –0.61; all  $p < 0.05$ ) were observed, irrespective of prior exacerbation history, across all subgroups.

**Conclusions** Dupilumab significantly reduced severe exacerbations and improved FEV<sub>1</sub> and asthma control in patients with elevated type 2 biomarkers irrespective of exacerbation history and baseline ICS dose.

