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Dupilumab efficacy in children with uncontrolled, moderate-to-severe asthma with and without an allergic phenotype

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Background

Most pediatric asthma patients have type 2 asthma. Dupilumab (DPL), a fully human mAb, blocks the shared receptor component for IL-4/13, key and central drivers of type 2 inflammation. In VOYAGE (NCT02948959), dupilumab 100/200mg q2w vs placebo (PBO) reduced severe asthma exacerbations and improved % predicted pre-BD FEV_1 in children aged 6–11 years with uncontrolled, moderate-to-severe type 2 asthma (baseline blood eosinophils ≥150cells/µl or FeNO ≥20ppb), and was generally well tolerated.

Aim

To evaluate DPL efficacy in children with type 2 asthma with/without an allergic asthma phenotype.

Methods

Annualized severe exacerbation rate (AER) was assessed using a negative binomial model. Changes from baseline (BL) in % predicted pre-BD FEV_1 and 7-item Asthma Control Questionnaire (ACQ-7) score were assessed using mixed-effect models with repeated measures (MMRM).

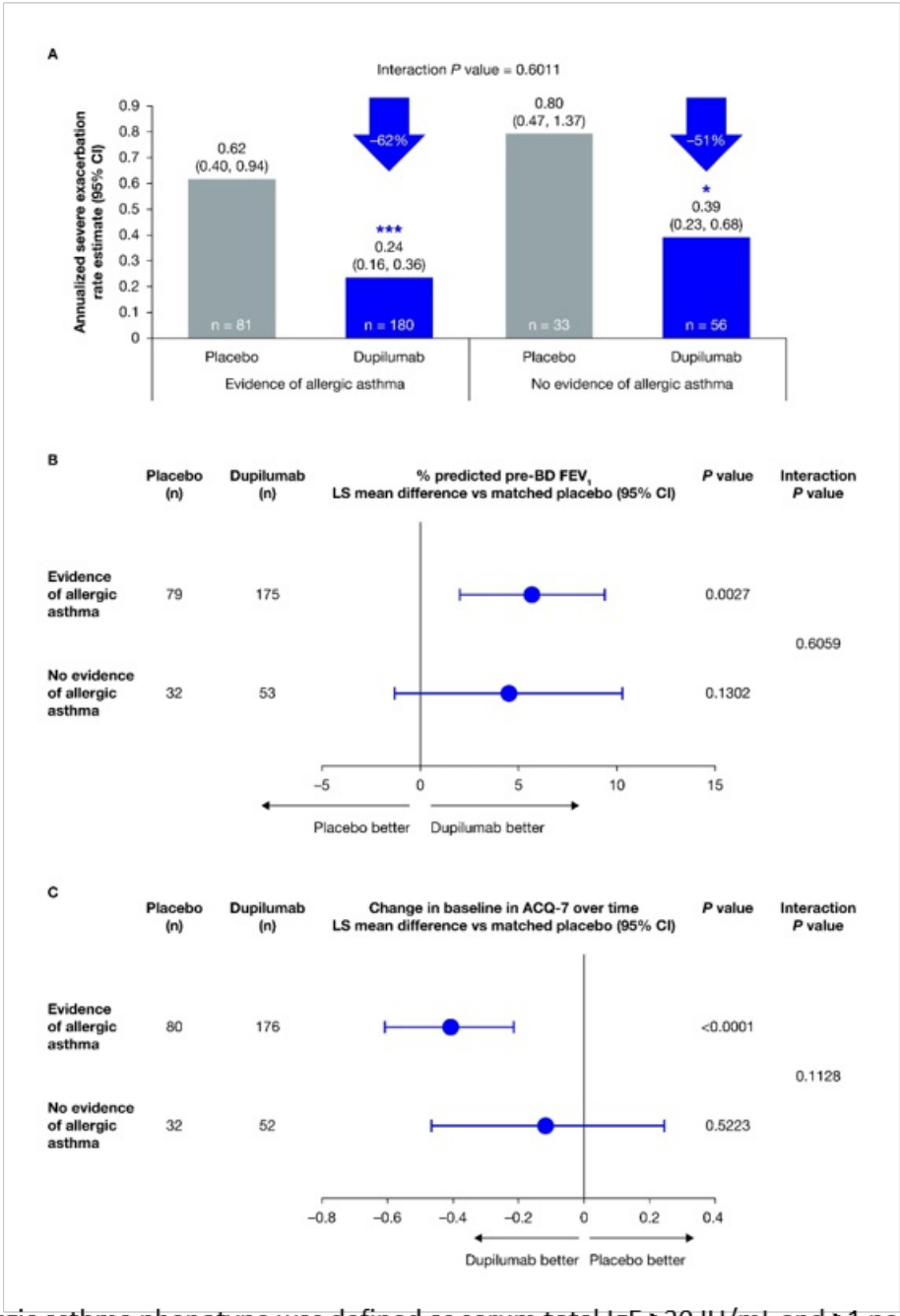
Results

75% of the type 2 patients had evidence of allergic phenotype. DPL vs PBO significantly reduced AER in patients with/without allergic phenotype. Change from BL in % predicted pre-BD FEV_1 at Week 12 and ACQ-7 at Week 24 was greater in patients treated with DPL vs PBO in both subgroups (**Figure**).

Conclusion

Dupilumab showed efficacy in reducing asthma exacerbations significantly in children with type 2 asthma with/without evidence of allergic asthma. Efficacy on lung function was similar in both subgroups.

Figure. (A) AER, (B) change from baseline in % predicted pre-BD FEV_1 at Week 12, and (C) change from baseline in ACQ-7 score at Week 24.



Allergic asthma phenotype was defined as serum total IgE ≥30 IU/mL and ≥1 perennial aeroallergen-specific IgE ≥0.35 kU/L at baseline. Adjusted AER of events was assessed using a negative binomial model, and LS mean changes from baseline in FEV_1 at Week 12 and in ACQ-7 score at Week 24 were derived from an MMRM model. **P*<0.05; ****P*<0.001 vs matched PBO.

CI, confidence interval; LS, least squares.