

Dupilumab Offers Early and Sustained Improvement in Sleep in Adolescents With Moderate-to-Severe Atopic Dermatitis

Lisa A. Beck¹, Eric L. Simpson², H. Chih-ho Hong³, Ashish Bansal⁴, Zhen Chen⁴, Paola Mina-Osorio⁴, Randy Prescilla⁵, Abhijit Gadkari⁴

¹University of Rochester Medical Center, Rochester, NY, USA; ²Oregon Health & Science University, Portland, OR; ³University of British Columbia and Probitry Medical Research, Surrey, BC, Canada;

⁴Regeneron Pharmaceuticals, Tarrytown, NY; ⁵Sanofi Genzyme, Cambridge, MA

Introduction & Objectives: Adolescent patients with moderate-to-severe atopic dermatitis (AD) report reduced quality of life, primarily driven by pruritus and sleep disturbance. Dupilumab is a fully human monoclonal antibody that blocks the shared receptor component for interleukin (IL)-4 and IL-13, thus inhibiting signaling of both IL-4 and IL-13, key drivers of type 2 inflammation in multiple diseases. Here we analyze the effect of dupilumab vs placebo on three measures of sleep in adolescents with moderate-to-severe AD using data from a randomized, double-blind, placebo-controlled, phase 3 trial (NCT03054428).

Methods: Patients (aged ≥ 12 to < 18 years) were randomized 1:1:1 to subcutaneous dupilumab every 2 weeks (q2w; 200mg if baseline weight < 60 kg, 300mg if ≥ 60 kg); every 4 weeks (q4w; 300mg); or placebo q2w for 16 weeks. The effect on sleep was assessed in SCORing Atopic Dermatitis (SCORAD) sleep loss component (Visual Analog Scale [VAS], scored 0–10 [cm]); Children’s Dermatology Life Quality Index (CDLQI) affected-sleep item (“Over the last week, how much has your sleep been affected by your skin problem?,” scored 0–3 from “not at all” to “very much”); and Patient-Oriented Eczema Measure (POEM) disturbed-sleep item (“Over the last week, on how many nights has your child’s sleep been disturbed because of their eczema?,” scored 0–4, from “no days” to “every day”). Changes are reported as least squares (LS) mean change with standard error (SE).

Results: A total of 251 patients were randomized (dupilumab 200/300mg q2w [n=82], dupilumab 300mg q4w [n=84], placebo [n=85]). Mean baseline scores (standard deviation) for SCORAD VAS sleep loss for q2w/q4w/placebo were 5.4 (3.3), 5.9 (3.2) and 5.6 (3.1), CDLQI affected sleep 1.90 (1.0), 2.1 (1.0) and 2.0 (1.0), and POEM disturbed sleep, 2.5 (1.5), 2.9 (1.4) and 2.7 (1.3), reflecting considerable sleep impairment. Patients who received dupilumab q2w showed significant improvement vs placebo in all three sleep measures at the earliest timepoint assessed: SCORAD VAS sleep loss LS mean change (SE) -1.72 (0.26) vs -0.52 (0.25) for q2w vs placebo at Week 1 ($P=0.0009$); CDLQI affected sleep -0.66 (0.09) vs -0.23 (0.10) at Week 2 ($P=0.0013$) and POEM disturbed sleep -0.87 (0.13) vs -0.34 (0.13) at Week 2 ($P=0.0030$). There were further improvements through Week 16 with both dupilumab regimens vs placebo: SCORAD VAS sleep loss q2w/q4w vs placebo LS mean change (SE) -3.62 (0.32)/ -3.04 (0.32) vs -1.12 (0.36) ($P<0.0001$ / $=0.0001$); CDLQI affected sleep -1.18 (0.10)/ -1.13 (0.11) vs -0.52 (0.13) ($P<0.0001$ / $=0.0005$); POEM disturbed sleep -1.62 (0.14)/ -1.55 (0.16) vs -0.43 (0.18) ($P<0.0001$ / <0.0001). No new safety signals were observed in adolescents compared with adults.

Conclusions: In this study of adolescents with moderate-to-severe AD, dupilumab treatment demonstrated significant improvement in sleep vs placebo as early as Week 1 that was sustained through Week 16.

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