Impact of Lebrikizumab on Patient-reported Outcomes in Atopic Dermatitis: Prospective and Post Hoc Analyses of a Phase 2b Clinical Trial Demonstrate Clinically Meaningful Improvements

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Introduction: Patient-reported outcomes are valuable measures of treatment impact in atopic dermatitis (AD). Lebrikizumab (LEB) is an investigational, high-affinity, monoclonal antibody targeting IL-13. The objective here was to evaluate the impact of LEB inhibition of IL-13 signaling on patient-reported outcomes using data from a randomized, double-blinded, placebo-controlled, dose-ranging, phase 2b study of LEB in moderate-to-severe AD (NCT03443024). **Study:** Adults (Eczema Area and Severity Index [EASI] ≥16, Investigator's Global Assessment [IGA] ≥3, chronic AD ≥1 year) were randomized to subcutaneous LEB 125 mg every 4 weeks (Q4W; 250 mg loading dose [LD]; n=73), 250 mg Q4W (500 mg LD; n=80), 250 mg every 2 weeks (Q2W; 500 mg LD at Baseline and Week 2; n=75) or placebo (n=52). Primary endpoint was EASI mean percent change from Baseline (%cfB) at Week 16. Patient-reported outcomes included pruritus numeric rating scale (NRS; %cfB, ≥4-point improvement), sleep-loss NRS (%cfB), Patient Oriented Eczema Measure (POEM) cfB, Dermatology Life Quality Index (DLQI) cfB, and DLQI 0/1. Post hoc analyses evaluated Hospital Anxiety and Depression Scale (HADS) total score cfB. **Results:** LEB arms showed dose-dependent, statistically significant improvement in the primary endpoint vs. placebo (125 mg Q4W, $P<0.05$; 250 mg Q4W, $P<0.01$; 250 mg Q2W, $P<0.001$). For patient-reported outcomes, LEB-treated patients showed improvements over placebo-treated patients, including a numerically greater reduction in pruritus severity by Day 2, with further improvement across LEB arms vs. placebo in pruritus NRS to Week 16 as assessed by %cfB (-36.9 [$P<0.01$]/-48.6 [$P<0.001$]/-61.8 [$P<0.0001$] vs. 6.8) or ≥4-point improvement (41.8%/47.4%/70.0% vs. 27.3% [$P<0.001$]). Reduction in sleep-loss was numerically greater in LEB arms by week 1, with further improvement to Week 16 (sleep-loss NRS %cfB: -48.7/-53.0 [$P<0.05$]/-64.7 [$P<0.01$] vs. -20.2). By Week 16, LEB showed numerically greater improvements in disease severity (POEM cfB: -8.9/-11.4/-12.4 vs. -5.8) and dermatology health-related QoL vs. placebo (cfB: -7.9/-9.2/-9.7 vs. -5.9; DLQI 0/1: 13.6%/32.3%/39.0% vs. 16.7%). Post hoc exploratory analyses showed a numerically greater improvement in HADS total score cfB for LEB arms compared with placebo (-3.6/-3.8/-5.1 vs. -2.7). **Conclusions:** Selective blockade of IL-13 with LEB improved AD symptoms and patient-reported outcomes, including pruritus and sleep-loss, in a rapid, clinically-meaningful and dose-dependent manner, and post hoc analyses suggested a reduction in anxiety and depression. **Funded** by Dermira, Inc., a wholly-owned subsidiary of Eli Lilly and Company.