Neutralizing interleukin-13 with tralokinumab reduces abundance of *S. aureus* in adolescents with atopic dermatitis

**Objectives**

- To assess *S. aureus* abundance in lesional and non-lesional skin of adolescents with moderate-to-severe AD in the ECZTRA 6 trial.
- To determine the impact of IL-13 neutralization with tralokinumab in adolescents with AD.

**Results**

- **S. aureus abundance by key biomarkers at baseline**
  - S. aureus abundance (gene copies/cm²) was strongly positively correlated with AD severity (Figure 1).
  - Differences in percentage of subjects positive for *S. aureus* were obtained at Week 16 compared to baseline (Table 1).

**Materials and Methods**

- **Study design, sample collection, and analyses**
  - Adolescents (aged 12-17 years) were randomized (1:1) to receive subcutaneous tralokinumab (150 mg or 300 mg) every 2 weeks, or placebo (Figure 2).
  - Skin swab samples were analyzed for S. aureus abundance and ISQ1A status (Figure 3).

**Background**

- Patients with atopic dermatitis (AD) are frequently colonized with high levels of *S. aureus*.
- Both epidermal barrier disruption and type 2 inflammation are thought to contribute to this dysbiosis in patients with AD.
- Tralokinumab is a high-affinity, monoclonal antibody that targets IL-13, a key driver of type 2 inflammation.

**Conclusions**

- In this Phase 3 study in adolescents aged 12-17 years, baseline S. aureus abundance strongly correlated with levels of key serum biomarkers.
- Tralokinumab treatment led to a nominally significant reduction in S. aureus abundance and S. aureus positive subjects at Week 16.
- These data suggest that specific targeting of IL-13 is effective in reducing S. aureus abundance in adolescents with moderate-to-severe AD.

**Baseline and Disease Characteristics**

- **Basal demographics and disease characteristics** were largely balanced between treatment groups (Table 1).

**Table 1. Baseline demographics and clinical characteristics**

<table>
<thead>
<tr>
<th>S. aureus abundance</th>
<th>Placebo</th>
<th>Tralokinumab 150 mg</th>
<th>Tralokinumab 300 mg</th>
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<td><strong>Baseline demographics</strong></td>
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<td>Age (years)</td>
<td>16-17</td>
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<td>% with moderate or severe AD</td>
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<tr>
<td>% with EASI score &gt;20</td>
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**References**

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**Disclosure**

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**Abstract**

- This study assessed the impact of IL-13 neutralization with tralokinumab in adolescents (aged 12-17 years) with moderate-to-severe AD (ECZTRA 6 trial). There was a positive correlation between reduction in lesions skin and ISQ1A status in adolescents with moderate-to-severe AD in the Phase 3 ECZTRA 6 trial (NCT03325686).

**Table 2. Baseline demographics and clinical characteristics**

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**Figures**

- Figure 1. ECZTRA 6 trial design.
- Figure 2. Correlation of S. aureus abundance and relevant biomarkers at baseline in lesional and non-lesional skin.
- Figure 3. Effect of tralokinumab treatment on S. aureus abundance and status.
- Figure 4. Change in S. aureus status in lesional and non-lesional skin from baseline to Week 16.
- Figure 5. Patients positive for S. aureus in lesional and non-lesional skin at Week 9.
- Figure 6. Change in S. aureus abundance compared to change in EASI from baseline to Week 16 in lesional and non-lesional skin.