BACKGROUND

• Chronic rhinosinusitis (CRS), often accompanied by nasal polyps (CRSwNP), is a high-prevalence, chronic, inflammatory condition.
• CRSwNP is characterized by polyps in the nasal cavity. It is defined by symptoms such as nasal congestion, swelling, and polyps in the nasal cavity. 
• In the absence of other symptoms, that collectively can adversely affect quality of life (QoL) to a degree similar to other serious diseases, such as CHD and COPD.
• The overall annual economic burden of CRS in the United States was estimated at $22 billion (direct and indirect costs) in 2014.4

• Intranasal corticosteroids (ICS) are recommended as a primary treatment for CRSwNP and its associated care condition; however, many CRS patients are highly dissatisfied with current ICS therapy, primarily due to inadequate symptom relief.2,6
• Conventional ICS sprays deliver the majority of actively drug to the anterior portion of the nasal cavity below the nasal valve, leaving much of the posterior/nasal-regions where CRS typically originates—unaddressed.4
• High-flow ICS sprays, such as mometasone furoate (MF2®) delivery to optimize fluticasone propionate delivery to the entire nasal cavity, including the posterior and deep anterior regions, such as the ostiomeatal complex.
• The primary purpose of this study in 323 patients was to compare the efficacy of intermittent ICS FLU 93 µg, 186 µg, or 372 µg twice daily (BID) versus EDS/placebo in the treatment of nasal polyps.4

METHODS

• The study design is presented in Figure 2.
• Eligible patients were at least 18 years of age and had CRSwNP with a polyp grade of ≥3 in at least 1 sinus cavity and moderate/severe nasal symptoms of obstruction or nasal congestion. 
• Nasal endoscopies were performed under patient consent as an “emergency treatment.”
• Polyps were graded according to the following scale:

Table 2. Baseline Characteristics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Placebo (N = 93)</th>
<th>FLU 93 µg BID (N = 96)</th>
<th>FLU 186 µg BID (N = 94)</th>
<th>FLU 372 µg BID (N = 93)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>48 (18-78)</td>
<td>47 (18-78)</td>
<td>47 (18-78)</td>
<td>48 (18-78)</td>
</tr>
<tr>
<td>Sex</td>
<td>61 (66%)</td>
<td>58 (61%)</td>
<td>57 (61%)</td>
<td>58 (63%)</td>
</tr>
<tr>
<td>Number of Sinuses</td>
<td>4 (4)</td>
<td>4 (4)</td>
<td>4 (4)</td>
<td>4 (4)</td>
</tr>
<tr>
<td>Nasal Endoscopy grade</td>
<td>3.0 (2-4)</td>
<td>3.0 (2-4)</td>
<td>3.0 (2-4)</td>
<td>3.0 (2-4)</td>
</tr>
<tr>
<td>Number of Subjects</td>
<td>323</td>
<td>93</td>
<td>96</td>
<td>94</td>
</tr>
</tbody>
</table>

• Baseline demographics and characteristics (Table 2) are representative of the CRSwNP patient population in all treatment groups. Patients who had previously used steroids and/or underwent surgery.

RESULTS

• Improvements in all 4 defining features of nasal polyposes, as assessed by average AM instantaneous diary scores, (Figure 6) and in multiple measures of QoL, were statistically superior in all FLU groups versus placebo.

• The proportion of patients with an improvement in total bilateral polyp grade ≥ 3 point increased monotonically in the active dose groups from week 4 through week 16 during the double-blind phase. By the end of the 372 µg open-label extension phase, the percentage of responders increased further (Figure 6).

• At the end of the double-blind treatment phase, 10.5% of patients in the EDS FLU groups had a polyp grade of 0 (no polyps) in at least 1 nostril compared with 11.5% patients in the placebo group. This further increased in the active extension to approximately 10% of patients with no polyps at all in at least 24 weeks.

• SNCT 22 improvement was substantial in all FLUS groups and statistically superior to placebo (p ≤ 0.005). SNCT 22 scores progressively improved through week 16, with continued incremental improvement through week 24 (Figure 6).

• The most frequent adverse events (AEs) in EDS FLU recipients were identified by nasal endpoint rather than clinical report and included nasal pain (-defined as any visualized blood, including, for example, streaked mucous or crusted nasal) and nasal septal ulceration. Both typically resolved without any study medication changes.

• EDS FLU treatment resulted in an approximately 60% reduction in the proportion of patients eligible for surgery at 16 weeks, compared to placebo (Figure 7).

CONCLUSIONS

• EDS FLU dose of 93 µg, 186 µg, and 372 BID significantly reduced coprimary endpoints of nasal congestion/obstruction/totol polyp grade, and SNCT 22.

• In a population in which many had previously used steroids or had surgery, EDS FLU significantly increased a broad range of objective and subjective outcome measures, including all 4 defining features of CRS (congestion, pain, sensation, patency, QoL), and significantly decreased with all doses of EDS FLU over the course of the study.

• Higher doses of EDS FLU 186 µg and 372 µg resulted in numerically greater responses for some endpoints and a more rapid onset of action.

• Treatment with EDS FLU was well tolerated, with an AE profile similar to that of intranasal steroids studied in patients with CRSwNP.