Patient Journey of Chronic Rhinosinusitis Without Nasal Polyps: A US Retrospective Claims-Based Study

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WHAT WAS KNOWN

- CRS is a chronic inflammatory disease characterized by persistent symptoms (including nasal blockage/obstruction, thick or purulent nasal discharge, facial pain/pressure, and loss/reduction of smell) lasting ≥12 weeks.[1,2]
- CRSsNP is the most common form of CRS, representing up to 82% to 90% of all cases.[3,4,5]
- Treatment for CRSsNP often involves multiple lines and combinations of therapy along with surgery to manage inadequately controlled symptoms, contributing to disease burden; current management strategies focus on symptom relief but do not address all aspects of the underlying inflammatory pathways associated with CRSsNP.
- Real-world evidence on the characteristics of patients with CRSsNP and their treatments is limited, at least in part due to the lack of specific CRSsNP diagnosis codes, making it challenging to identify patients from claims databases.

OBJECTIVE

- This study aimed to develop an algorithm to identify US patients with CRSsNP from claims data and to utilize this algorithm to characterize patients with CRSsNP and their treatment journey.

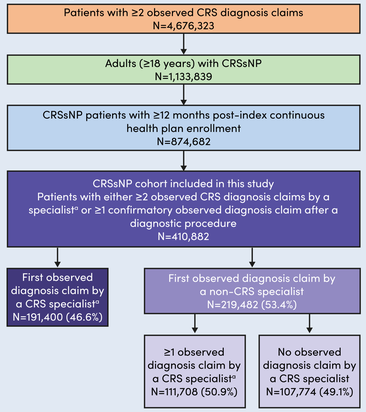
METHODS

- This retrospective cohort study of claims information from Komodo Research Data (January 1, 2016, to February 29, 2024) identified commercially insured US adults (≥18 years) with CRSsNP via a new algorithm developed from information available in administrative claims data, real-world coding practices, and prior literature, with input from medical experts including allergist-immunologists and specialist ENT physicians.
- Patients with CRSsNP were initially identified as those with ≥2 observed diagnosis claims for CRS (*ICD-10-CM* code for chronic sinusitis), continuous enrollment from the 12-month baseline period prior to the index date (the first observed CRS diagnosis code) through the ≥12-month follow-up period, and no indicators of nasal polyps at any time.
- The CRSsNP cohort was further defined as those with either ≥2 CRS observed diagnosis claims by a specialist or ≥1 confirmatory CRS observed diagnosis claim after a diagnostic sinus procedure.
- Patient demographics, clinical characteristics, and patient journey were assessed using descriptive statistics.

RESULTS

- After the algorithm was applied, 410,882 patients with CRSsNP were included (mean [median] follow-up: 41.7 [37.6] months) (**Figure 1**).
- Mean (median) age was 46.2 (48.0) years, and 61.7% of the patients were female (**Figure 2**).
- The most common comorbidities during baseline were hypertension (28.2%), chronic pulmonary disease (17.8%), and depression (17.6%) (**Figure 2**).

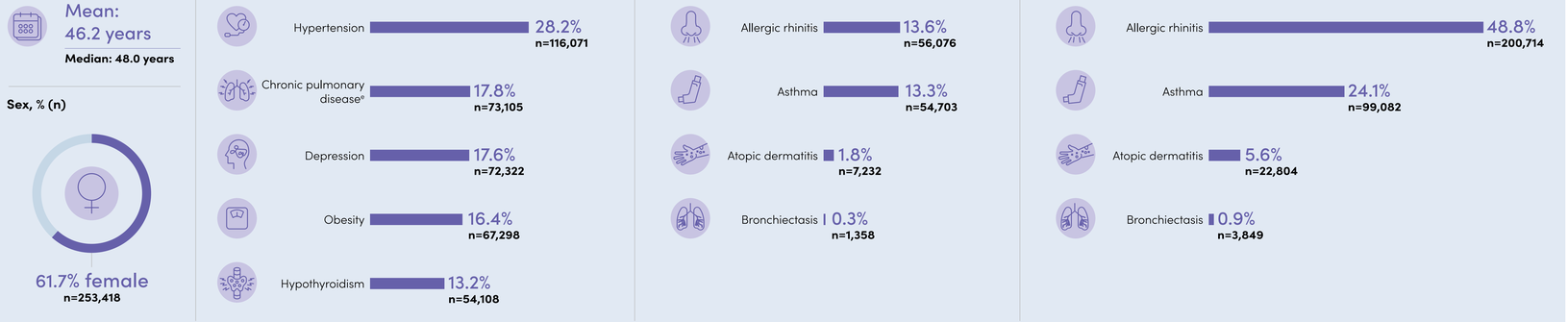
Figure 1. Patients With CRSsNP Identified Using a New Algorithm



[a]CRS specialists included ENT specialists (otolaryngology/facial plastic surgery, otorhinolaryngology and head & neck, otolaryngology, and otolaryngic allergy) and allergists/immunologists (specialists in allergy, allergy & immunology, and otolaryngic allergy).

Figure 3: CRSsNP Patient Treatment Journey Over the Duration of Follow-Up

Figure 2. CRSsNP Patient Characteristics



[a]Index was the date of first CRS diagnosis. [b]Comorbidities included in the Elixhauser comorbidity index, a set of 30 comorbidities defined from administrative data and associated with length of stay and hospital costs. [c]The baseline period spanned 12 months prior to the first CRS diagnosis. [d]Comorbidities were assessed based on having a diagnosis for the respective condition. Allergic rhinitis was assessed based on having ≥2 diagnoses on distinct dates. [e]Includes COPD, asthma, bronchiectasis, and other chronic lower respiratory diseases. [f]Mean follow-up was 41.7 months.

RESULTS (CONT.)

- Proportions of patients with the CRSsNP-related comorbidities, allergic rhinitis, asthma, atopic dermatitis, and bronchiectasis were higher during the follow-up period than during the baseline period.
- A CRS specialist made the initial diagnosis in 46.6% (n=191,400) of patients (**Figure 1**).
- Among patients whose initial diagnosis was not by a CRS specialist (n=219,482; 53.4%), almost half (n=107,774; 49.1%) also had no subsequent observed diagnosis claim by a CRS specialist.
- Overall, CRSsNP treatment journeys included intranasal corticosteroids, antibiotics, oral GCS, and CRSsNP-related surgery (**Figure 3**).
- Oral GCS were received by most patients (n=297,709; 72.5%), with patients receiving a mean of 3.9 fills (mean days of supply: 43.1 days).
- The most common treating providers were ENT specialists (n=172,391; 42.0%) and GPs (n=111,826; 27.2%).
- Most patients received ≥2 treatment classes (79.1% received both antibiotics and steroids), often in multiple courses (**Figure 3**).
- Other treatment combinations included antibiotics and surgery (n=63,232, 15.4%), steroids and surgery (n=56,788, 13.8%), and antibiotics, steroids, and surgery (n=55,703, 13.6%).
- In total, 16.0% (n=65,837) of patients received CRSsNP surgery, with a mean (median) time to first surgery of 8.9 (3.0) months.
- Among patients who underwent surgery, the most common first surgery type was ESS (n=27,844, 42.3%).
- Among patients who received a surgery, over one-third (n=23,003; 34.9%) underwent multiple surgeries, and the mean (median) number of surgeries was 1.5 (1.0).

LIMITATIONS

- Although a new algorithm developed with medical experts was used to identify patients with CRSsNP, the lack of a specific CRSsNP diagnosis code is a challenge for identifying affected patients in claims-based analyses and could potentially lead to misidentified cases.

WHAT THIS STUDY ADDS

- Using a novel algorithm, this study defined a large cohort of patients with CRSsNP from US claims data who were predominately female, of mean age 46 years, and frequently experienced CRSsNP-related comorbidities.
- The typical CRSsNP patient journey involved multiple fills of antibiotics (although no antibiotic is approved for treatment of CRS) and oral GCS, with 16% of patients requiring CRSsNP-related surgery.
- Oral systemic GCS were frequently received in multiple courses, despite not being recommended in CRSsNP treatment guidelines and with concerns regarding their prolonged use.[1,2]
- Multiple treatment regimens, repeated therapy courses, and multiple surgeries were often required to manage inadequately controlled symptoms.
- The findings highlight the need for more effective treatment options, specifically indicated for CRSsNP, to minimize repeated treatment cycles and surgeries.

ABBREVIATIONS:
COPD, chronic obstructive pulmonary diseases; CRS, chronic rhinosinusitis; CRSsNP, CRS without nasal polyps; ENT, ear, nose, and throat; ESS, endoscopic sinus surgery; GCS, glucocorticoids; GP, general practitioner; *ICD-10-CM, International Classification of Diseases, Tenth Revision, Clinical Modification.*

FUNDING:
This study was funded by Insmed Incorporated.

DISCLOSURES:
Anju T. Peters: research support from Arella, AstraZeneca, Eli Lilly, Insmed Incorporated, and Sanofi Regeneron; consulting or steering committee for Arella, AstraZeneca, Chiesi, GSK, Novartis, and Sanofi Regeneron.
Abhishek Chitnis: employee and shareholder of Insmed Incorporated.
Elizabeth Serra, Aditi Shah, Patrick Gagnon-Sanschagrin, and Andree-Anne Fournier: employees of Analysis Group, a paid consultant for Insmed Incorporated.
Joseph K. Han: research consultant for AstraZeneca, Sanofi Regeneron, Insmed Incorporated, GlaxoSmithKline, Medtronic, and Optinose.

ACKNOWLEDGEMENTS:
Medical writing support was provided by Alice Newman, PhD, of Envision Value & Access, a part of Envision Medical Communications, and funded by Insmed Incorporated.

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Poster presented at American College of Allergy, Asthma & Immunology (ACAAI); November 6-10, 2025; Orlando, FL, USA

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