CHALLENGE 1: UNCOVERING THE BURDENS OF CHRONIC RHINOSINUSITIS WITH NASAL POLYPS (CRSwNP)

Patients with CRSwNP experience significant disease and treatment burdens. Subjective outcomes measures, especially patient-reported outcomes measures (PROMs), can be helpful in clinical practice to follow an individual patient's response to therapy and to monitor disease fluctuations over time. PROMs allow patients to voice their input about their symptoms—input that is not possible to obtain another way. Quality of life (QoL) and the burden of disease manifestations, such as symptom severity, are commonly measured using PROMs.

The Sinonasal Outcomes Test (SNOT-22), a 22-question survey, is a commonly used PROM for evaluating CRSwNP and is measured on a 6-point Likert scale. Symptom severity scores, such as the nasal congestion/obstruction score, can also be useful in practice. Recently, the Patient Global Impression of Symptom Severity (PGISS) was analyzed and determined to be an alternative method to the SNOT-22 to evaluate subjective symptom severity and guide treatment plans for patients with CRS. The PGISS combines features of Likert and visual analog scales to measure CRS symptom severity. There are also outcomes measures that address general QoL and are not disease specific.

SCAN THIS QR CODE TO ACCESS THE SNOT-22

CHALLENGE 2: WORKING UP PATIENTS WITH CRSwNP

A diagnosis of CRS requires confirmed endoscopic or radiographic evidence of sinonasal inflammation persisting for ≥12 weeks along with a combination of ≥2 of the following symptoms:

- Nasal obstruction/congestion/blockage
- Anterior or posterior (mucopurulent) nasal drainage
- Lost or decreased sense of smell
- Facial pressure/pain/fullness

A diagnosis of uncontrolled CRSwNP requires persistent or recurring symptoms despite long-term intranasal corticosteroids (INCS). Patients typically have received ≥1 course of oral corticosteroids (OCS) in the preceding 2 years and/or previous sinonasal surgery. One course of OCS refers to a minimum of 5 days at a dosage of ≥0.5-1 mg/kg/day. Previous sinonasal surgery refers to any surgical procedure from the resection of the polyps to conventional endoscopic sinonasal surgery (ESS) to extended approaches.

A diagnosis of severe CRSwNP requires bilateral polyposis by nasal endoscopy with a nasal polyp score (NPS) of ≥4 out of 8 and persistent symptoms with the need for add-on treatment with INCS. Presence of persistent symptoms is assessed by:

- Loss of smell score (0-3) ≥2 points
- SNOT-22 ≥35 points
- Total symptom visual analog scale (VAS) ≥5 out of 10 cm

SCAN THESE QR CODES TO ACCESS MORE INFORMATION ABOUT CRSwNP DIAGNOSTIC CRITERIA.

CHALLENGE 3: INDIVIDUALIZING THERAPY FOR CRSwNP

Traditional therapies for CRSwNP include nasal saline irrigation, INCS, antibiotics, and OCS. Both nasal saline irrigation and INCS have been shown to improve sinonasal symptoms and patient QoL. Macrolide antibiotics may be used for their anti-inflammatory properties, but there is a lack of high-quality studies to support their benefit in patients with CRS.

Although short courses of OCS have been shown to improve sinonasal symptoms and endoscopic findings in the short-term in patients with CRSwNP, there are significant toxicities associated with their use including, but not limited to, the development of cataracts, osteoporosis, and type 2 diabetes mellitus.

US Food and Drug Administration (FDA)-approved biologic therapies, dupilumab, mepolizumab, and omalizumab, are effective and well-tolerated in patients with CRSwNP. These biologics can be implemented not only to improve symptoms and QoL but potentially to aid in reducing exposure to OCS.

ESS can successfully resect nasal polyps, but recurrence rates are high. Preoperative predictors of nasal polyp recurrence after ESS include:

- Comorbid asthma and aspirin-exacerbated respiratory disease (AERD)
- *Staphylococcus aureus* superantigen
- Eosinophilic infiltration
- Biofilms and neutrophilic infiltrate
- Lack of adherence to inhaled nasal corticosteroids
- Tissue/blood eosinophilia

The preoperative symptom score (eg, SNOT-22) is a good predictor of postoperative outcome. When loss of smell is a major symptom, improvement in olfactory function with OCS use predicts a positive outcome for ESS. Additionally, primary surgery has better outcomes than revision surgery.

CHALLENGE 4: ADDRESSING CRSwNP AND COMMON COMORBIDITIES

Upper and lower airway diseases reflect a single pathologic process manifesting in different locations within the airway. The upper and lower airways share common cell types and immune interactions. Upper and lower airway diseases in this model include:

- Allergic rhinitis
- CRSwNP
- CRS without nasal polyps (CRSsNP)
- Nonallergic and mixed rhinitis
- Otitis media
- AERD (also known as nonsteroidal anti-inflammatory drug-exacerbated respiratory disease [NSAID-ERD])
- Asthma
- Eosinophilic chronic obstructive pulmonary disease (COPD).

In practice, upper and lower airway diseases are commonly seen in the same patient. Approximately, 40% of patients diagnosed with CRS had premorbid allergic rhinitis and 80% of patients with asthma have concurrent rhinitis. Asthma and CRSwNP occur together in 40% to 70% of patients. Interestingly, asthma is the most important independent risk factor for CRS recurrence.

There is a significant impact of comorbid disease when patients have ≥1 chronic inflammatory airway disease. Greater asthma severity has been linked to more radiologic evidence of CRS and higher risk of nasal polyps and allergic sensitization. Patients with asthma who also have allergic rhinitis have more emergency department visits and asthma attacks than patients with asthma alone.

Compared with patients with only upper OR lower airway disease, patients with comorbid upper and lower airway disease have:

- Higher rates of nasal polyp recurrence and corticosteroid dependence
- More difficult-to-treat asthma and CRSwNP symptoms
- More asthma exacerbations
- Worse outcomes overall

CHALLENGE 5: TACKLING THE ONGOING MANAGEMENT OF CRSwNP

The goal of treatment for CRSwNP is remission and potentially cure without the need for pharmacologic treatments.

CRSwNP remission is defined as no symptoms and no endoscopic signs of active disease for ≥12 months on or off treatment. Cure is defined as sustained remission for >5 years.

When evaluating an individual's response to biologic therapy, it is necessary to evaluate the 5 criteria:

- Reduced nasal polyp size (≥1)
- Reduced need for OCS/salvage surgery
- Improved QoL (SNOT-22 <40 + >minimum clinically important difference [MCID])
- Improved sense of smell (hyposmic by semi-objective smell test)
- Reduced impact of comorbidities (defined by MCID for specific type 2 [T2] disease)

If an individual with CRSwNP on a biologic therapy meets 4-5 of these criteria, then it is considered a good to excellent response. If 2-3 criteria are met, then it is considered a moderate response. If none or only 1 criterion is met, then it is considered no response or a poor response to the biologic.

Treatment response to biologic therapy should be evaluated after 6 months on the biologic. If a good to excellent response is achieved, then treatment should continue with a reevaluation of the response after 12 months. If the individual with CRSwNP does not achieve a good or excellent response, then it is important to consider other potential diagnoses. If CRSwNP is the confirmed diagnosis, then consider discontinuing or switching the biologic therapy and recommending salvage surgery.

A large part of achieving these goals in CRSwNP involves shared decision-making conversations with patients and employing strategies for improving access to biologic therapies. The SHARE approach to shared decision-making was developed by the Agency for Healthcare Research and Quality (AHRQ) to help health care providers engage with their patients to make the best possible health care decisions. https://www.ahrq.gov/health-literacy/professional-training/shared-decision/tool/resource-8.html

SCAN THIS QR CODE TO LEARN MORE ABOUT THE SHARE APPROACH TO SHARED DECISION-MAKING.