Strategies to Reduce Challenges in the Management of Chronic Rhinosinusitis With Nasal Polyps

The Role of Biologic Therapy

Faculty Information

Ellen R. Dixon, PharmD, CSP, CHN
Coordinator of Clinical Outcomes and Patient Engagement
PANTHERx Rare Pharmacy
Pittsburgh, Pennsylvania

Damien Fisher, PharmD, AE-C
Pharmacy Clinical Practice Specialist
Co-Coordinator of LAPPE program UTMB
PGY2 Amb Care Residency Program Coordinator
Specialty: Dermatology, Allergy, Pulmonology
University of Texas Medical Branch
Galveston, Texas

Eileen Wang, MD, MPH, FAAAAI, FACAAI
Associate Professor
Division of Allergy and Clinical Immunology

National Jewish Health, Department of Medicine
University of Colorado School of Medicine
Denver, Colorado

Faculty and Staff Disclosures

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Strategies to Reduce Challenges in the Management of Chronic Rhinosinusitis With Nasal Polyps

Ellen R. Dixon, PharmD, CSP, CHN

Educational Objectives

After completion of this activity, participants will be able to:

- Investigate treatment challenges associated with chronic rhinosinusitis with nasal polyps (CRSwNP)
- Explore safety and efficacy data of biologic therapy for the management of CRSwNP
- Identify opportunities for pharmacists to collaborate with other health care providers to improve access to biologic therapy for the management of CRSwNP

Today's Agenda

Part 1

Overview of chronic rhinosinusitis with nasal polyps

Therapeutic options for moderate to severe disease

Part 2

Panel discussion on the challenges of care

Interactive AI

Poll the Audience

All responses are confidential.

Management of CRSwNP

- Please provide your thoughts on the following question.

What are **health care providers' top 2 challenges** regarding the implementation and management of biologic therapies in moderate-to-severe chronic rhinosinusitis with nasal polyps?

Management of CRSwNP

- Please provide your thoughts on the following question.

What are **patients' top 2 challenges** regarding treatment and management of moderate to severe CRSwNP?

Thank you!

We will collate your responses, and later in the program, compare them to the results that our AI tool collected.

We will then discuss what it means clinically as you care for your patients with CRSwNP.

Pretest Questions

Pretest Question 1

Which statement is true about treatment approaches for chronic rhinosinusitis with nasal polyps (CRSwNP)?

A. Patients presenting with isolated CRSwNP tend to have more severe disease requiring multiple treatment approaches.

B. Patients with CRSwNP requiring surgery often find permanent relief with this last line of care.

C. Routine use of antibiotics in patients with CRSwNP has been shown to provide positive long-term outcomes.

D. Adherence rates to intranasal corticosteroids have been shown to be less than 50% in patients with CRSwNP.

Pretest Question 2

A 40-year-old woman with CRSwNP and anosmia has a history of intranasal corticosteroid use and revision surgery. She is assessed to be an appropriate candidate for biologic therapy and was initiated on dupilumab.

Which outcome has been demonstrated in the evidence?

A. Anosmia would likely improve within 3 days.

B. Nasal inspiratory flow would likely improve within 90 days.

C. Nasal congestion would likely improve within 16 weeks.

D. Nasal polyp size would shrink within 1 year.

Pretest Question 3

Which of the following is an appropriate way for a pharmacist to work with other health care providers to support biologic therapy use in patients with CRSwNP?

A. Recommend topical nasal decongestants to all patients with severe CRSwNP.

B. Implement a protocol for initiating antibiotics in all patients with CRSwNP.

C. Discuss with providers about any poor patient adherence with corticosteroid use.

D. Biopsy polyps to determine appropriateness of biologic therapy.

Pretest Question 4

Before participating in this activity, how confident are you in addressing concerns of patients with moderate to severe chronic rhinosinusitis with nasal polyps?

A. Not at all
B. Somewhat
C. Moderately
D. Very
E. Extremely

Strategies to Reduce Challenges in the Management of CRSwNP: The Role of Biologic Therapy

Eileen Wang, MD, MPH, FAAAAI, FACAAI

What Is Chronic Rhinosinusitis (CRS)?

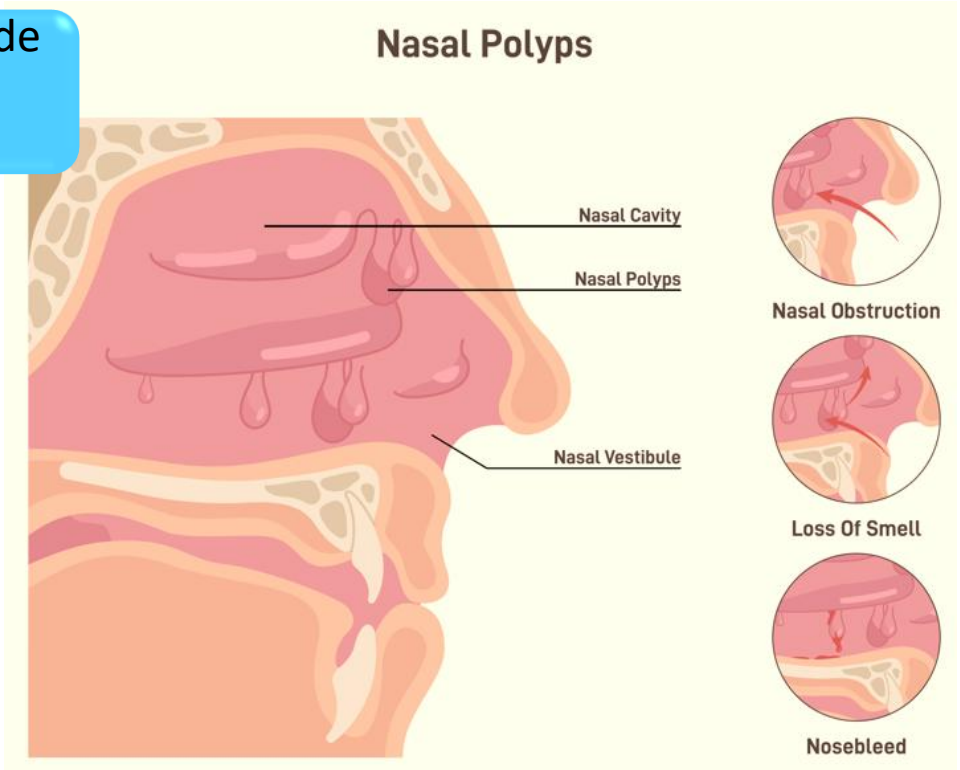
Presence of ≥2 of the following symptoms for ≥12 weeks

Should include one of the following

- Nasal blockage/obstruction
- Nasal discharge
- Facial pain/pressure
- Reduction (hyposmia) or loss (anosmia) of smell

Other Associated Conditions

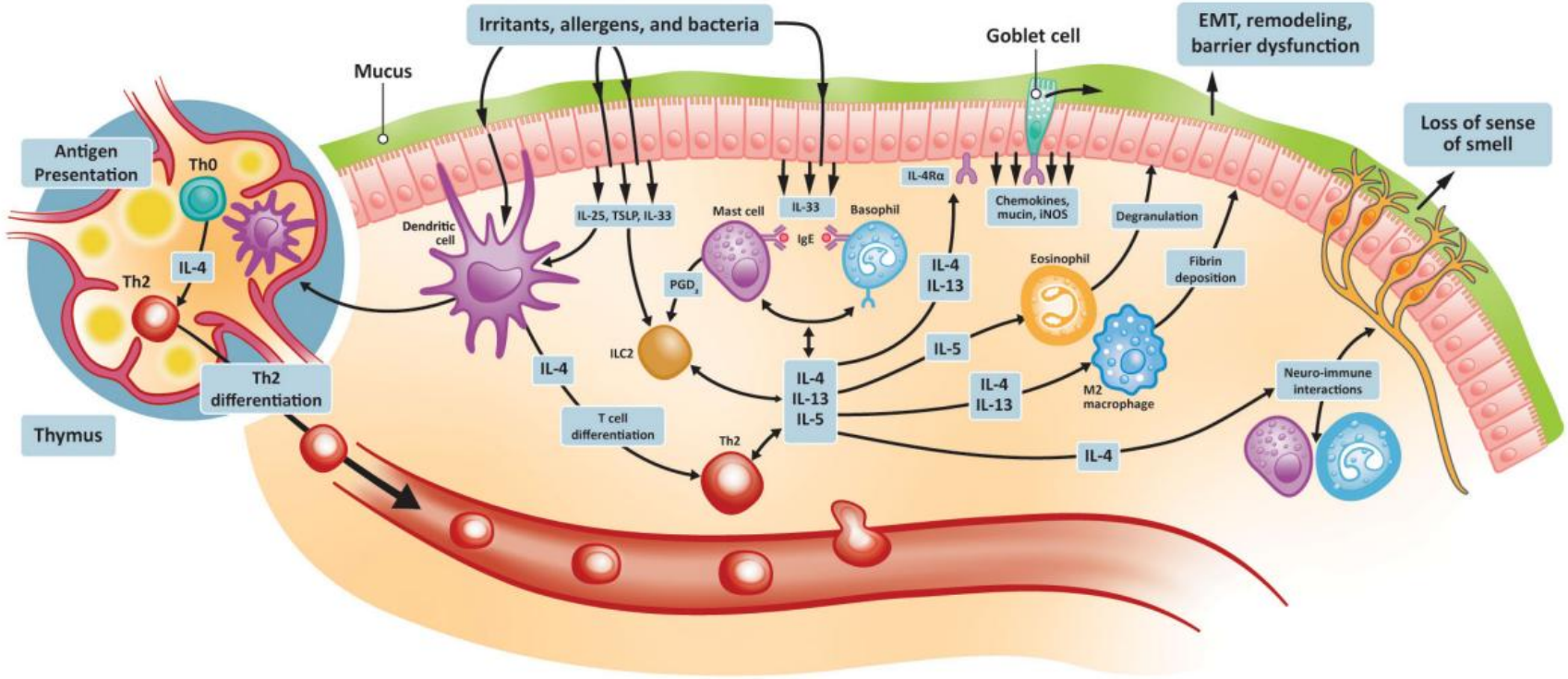
- Asthma
- Aspirin hypersensitivity



Fokkens WJ et al. *Rhinology*. 2020;58(suppl S29):1-464.

Th2-Mediated Inflammation Cascade in CRSwNP

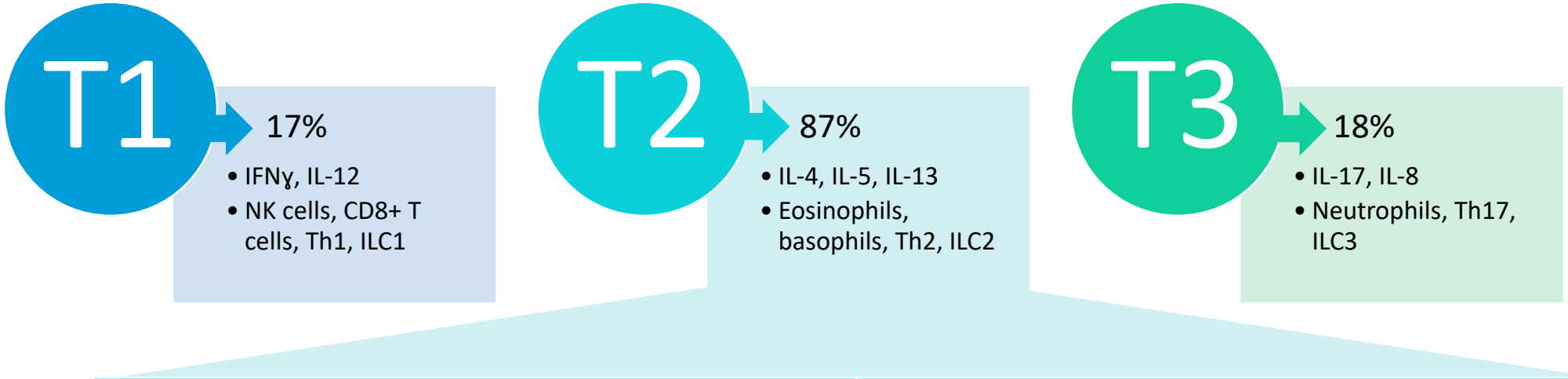
- Chronic inflammation in CRSwNP is frequently driven by type 2 proinflammatory cytokines IL-4, IL-5, and IL-13.



Republished from Bachert C et al. *Front Immunol.* 2024;15:1356298, under the terms of the Creative Commons AttributionLicense (CC BY).

Inflammatory-Driven Disease

Among Patients With CRSwNP in the US



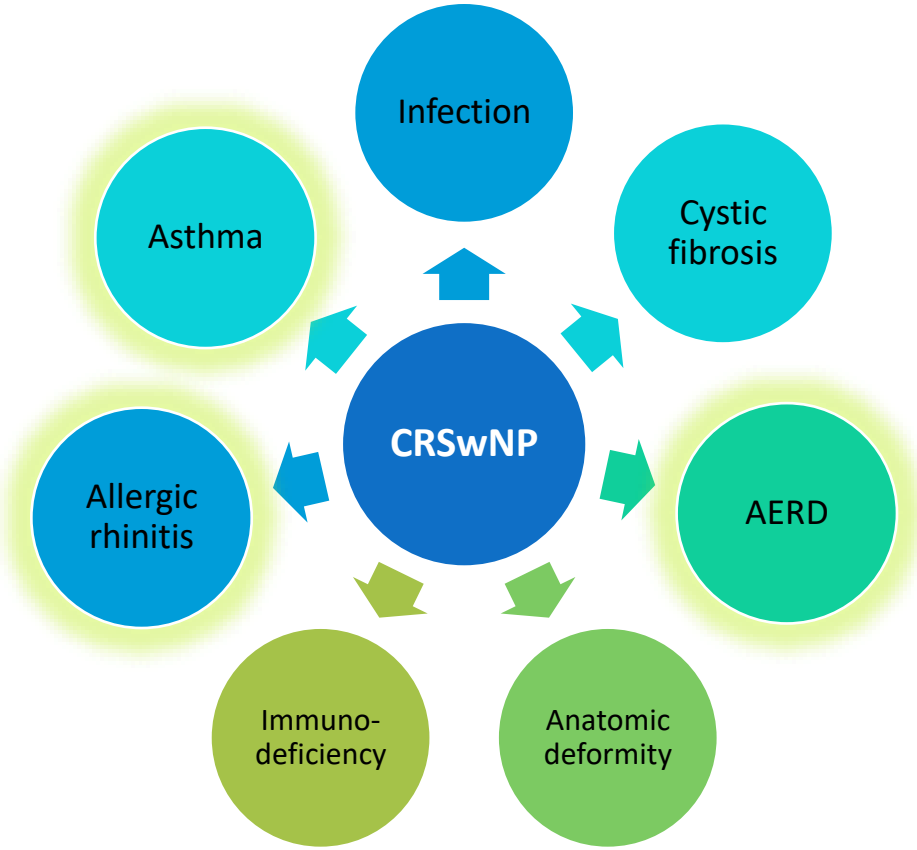
Eosinophils	IgE levels
Circulating eosinophilia	Serum total IgE levels
Eosinophils/eosinophil granule proteins in sinonasal tissue	Total and specific IgE levels in nasal polyp tissue
IL-5 in nasal polyp tissue	Specific IgE levels against *Staphylococcus aureus* enterotoxins

IFN, interferon; IgE, immune globulin E; IL, interleukin; ILC, innate lymphoid cells; T1, type 1 inflammation; T2 type 2 inflammation; T3, type 3 inflammation; Th, T-helper.

Stevens WW et al. *J Allergy Clin Immunol Pract*. 2019;7(8):2812-2820.e3; Kato A et al. *Allergy*. 2022;77(3):812-826; Staudacher AG et al. *Ann Allergy Asthma Immunol*. 2020;124(4):318-325.

Comorbid Conditions

- CRSwNP is associated with several other comorbid conditions with shared type 2 inflammation
  - Asthma and allergic rhinitis are the most prevalent comorbidities associated with CRS
    - 40%-67% of patients with CRSwNP also have asthma
  - Increasing prevalence of eosinophilic esophagitis in patients with CRSwNP
    - 14-fold greater
  - 90% of patients with CRSwNP who have AERD have severe nasal polyps

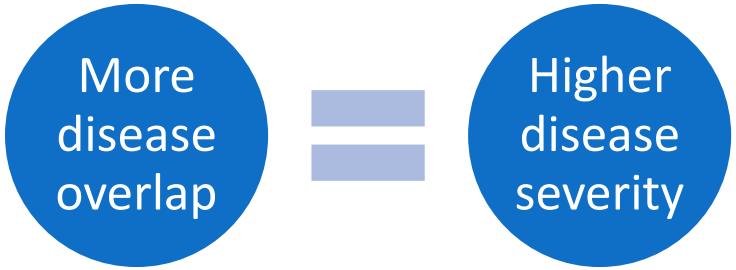


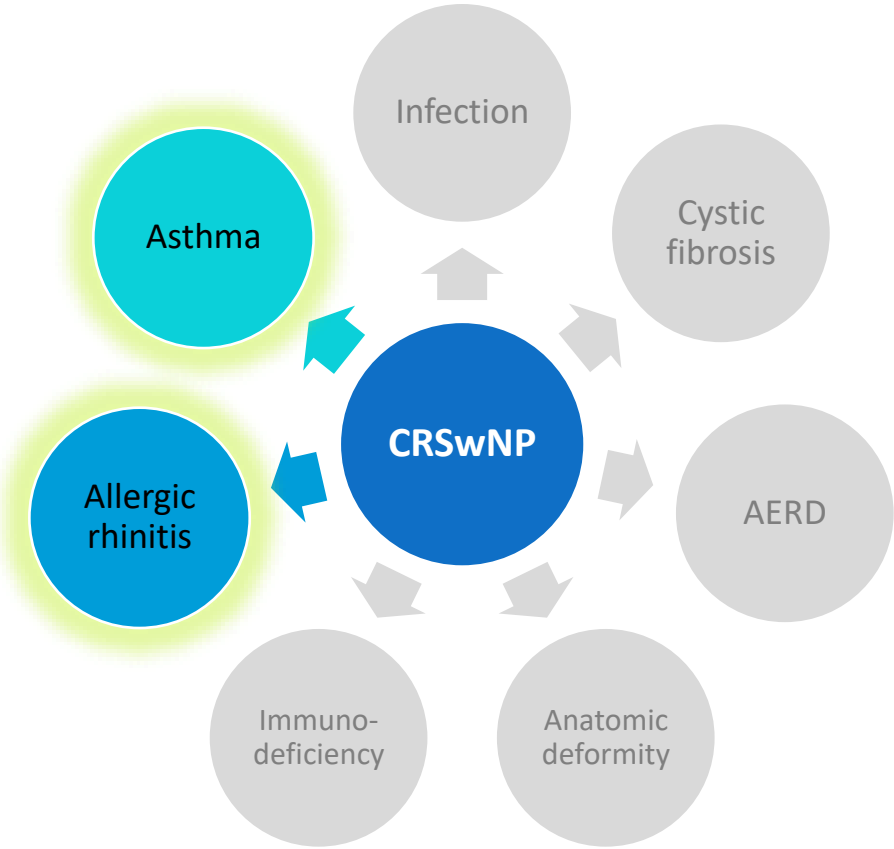
AERD, aspirin-exacerbated respiratory disease.

Beule A. *GMS Curr Top Otorhinolaryngol Head Neck Surg*. 2015;14:Doc11; Bhattacharyya N et al. *Laryngoscope*. 2019;129:1969-1975; Klonaris D et al. *Rhinology Online*. 2019;2:6-13; Koennecke M et al. *Allergo J Int*. 2018;27:56-65; Langdon C, Mullol J. *J Asthma Allergy*. 2016;9:45-53; Simmons JK et al. *Am J Rhinol Allergy.* 2022;36(6):804-807; Laidlaw TM et al. *J Allergy Clin Immunol Pract.* 2021;9(3):1133-1141.

High Comorbidity Burden in Type 2 Inflammation

- CRSwNP type 2 overlap in REVEAL database:
  - +1 comorbidity: 29.2%
  - +2 comorbidities: 10.9%
  - +3 comorbidities: 2.5%
- Reported severity of type 2 comorbidities in CRSwNP in US patients
  - Allergic rhinitis: 90% moderate-severe
  - Atopic dermatitis: 54% moderate-severe
  - Asthma: 76% moderate-severe





Khan A et al. *Lung.* 2023;201:57-63; Brailean A et al. *Allergy Asthma Immunol Res.* 2023;15(5):580-602.

Outcome Measures

Patient-Reported Quality of Life Tools

- 22-item Sinonasal Outcome Test (SNOT-22)

Need to blow nose	Dizziness	Fatigue
Nasal blockage	Ear pain	Reduced productivity
Sneezing	Facial pain/pressure	Reduced concentration
Runny nose	Decreased sense of smell/taste	Frustrated/ restless/irritable
Cough	Difficulty falling asleep	Sad
Postnasal drainage	Wake up at night	Embarrassed
Thick nasal discharge	Lack of good night's sleep	
Ear fullness	Wake up tired	

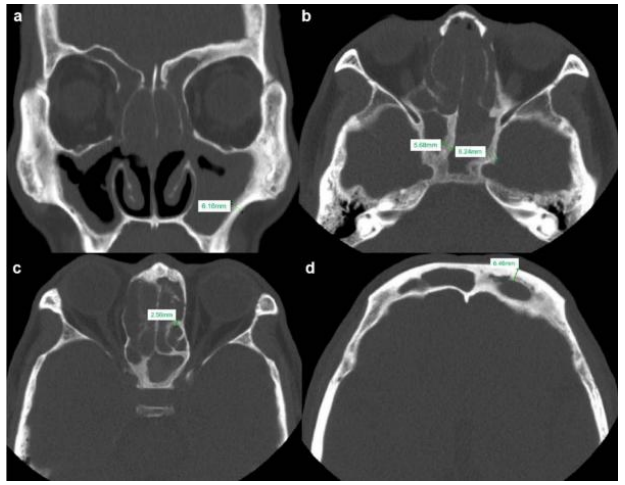
Endoscopic Tools

- Nasal Polyp Score (NPS)

0	•No polyps
1	•Small polyps restricted to middle meatus; do not extend below the lower border of middle turbinate
2	•Polyps extend below the lower border of the middle turbinate
3	•Large polyps extend down to the lower border of the inferior turbinate, or polyps are medial to the middle turbinate
4	•Large polyps that result in complete obstruction of the nasal cavity

Radiographic Tools

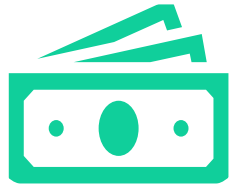
- Lund Mackay (LM)



Orlandi RR et al. *Int Forum Allergy Rhinol*. 2021;11(3):213-739; Côté DWJ, Wright ED. Objective outcomes in endoscopic sinus surgery. In: Iancu C, ed. *Advances in Endoscopic Surgery*. IntechOpen; 2011; Lund VJ, MacKay S. *Rhinology.* 1993;31(4):183-184; Bhattachacharyya N. *Curr Allergy Asthma Rep*. 2010;10(3):171-174. Image obtained under Creative Commons Attribution – Non-Commercial (unported, v3.0) License (http://creativecommons.org/licenses/by-nc/3.0/) from Zhang Z et al. *J Inflammation Research* 2024;17:4055-4064.

Economic Burden of Disease

- Compared with healthy individuals, patients with CRSwNP experience:

Baseline HCRU, pre-diagnosis	 More OCS use (≥1 prescription, 29.2% vs 13.8%)	 More office visits per year (12.3 vs 9.6)	 Significantly higher annual costs ($8004 vs $6937)
During follow-up at 1-year post-diagnosis, HCRU and costs increased.	1 or more OCS prescribed (61.6%)	18.6 office visits per year (3.7 times greater use of ambulatory care services)	Increased total costs ($18,964)

Bhattacharyya N et al. *Laryngoscope.* 2019;129:1969-1975.

HCRU, health care resource utilization; OCS, oral corticosteroid.

Treatment Options

1. Normal saline irrigation
   - 2021 Consensus Statement: use in CRS **(grade B)** duration >8 weeks
2. Topical corticosteroids
   - **Strongly recommended** based on benefits > harms **(grade A)**
   - Intranasal corticosteroids (INCS) preferred over no INCS **(conditional recommendation, low certainty)**
3. Steroid + nasal saline irrigation
   - **Strong recommendation** if not controlled with standard delivery, particularly following sinus surgery **(grade A)**
4. Oral corticosteroids
   - **Strong evidence** for use during flares and for short-term use **(grade A)**
5. Antibiotics
   - Topical antibiotics should not be routinely used **(grade A-)**
   - Macrolide antibiotics **(grade B)**; short-term nonmacrolide oral antibiotics recommended against **(grade B)**
6. Surgery
   - Appropriateness criteria
7. Steroid-eluting stents
   - Option after prior ethmoid surgery **(grade A)**
8. Biologics
   - Biologics over no biologics **(conditional recommendation, moderate certainty)**

International Consensus on Rhinosinusitis, Joint Task Force on Practice Parameters

Orlandi RR et al. *Int Forum Allergy Rhinol*. 2021;11(3):213-739; Rank MA et al. *J Allergy Clin Immunol* 2023;151(2):386-398.

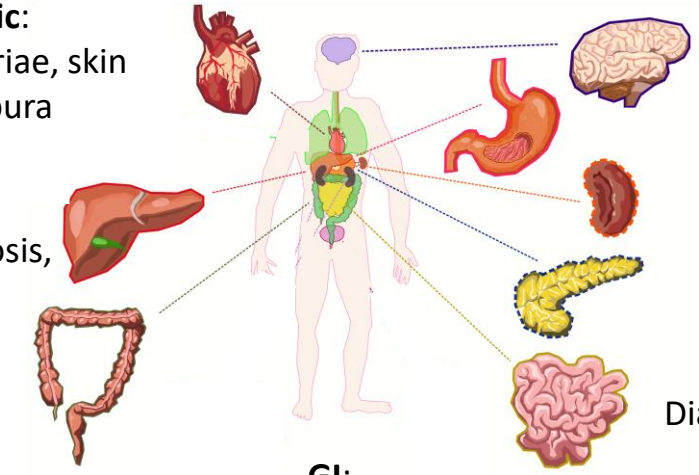
Limitations of Systemic Corticosteroid Use

- Short-term benefit likely 8-12 weeks
- Longer-term use is associated with increased risk of AEs

CV:
Hypertension

Hematologic:
Leukocytosis

Dermatologic:
Acne, hirsutism, striae, skin thinning, purpura



Ophthalmologic:
Cataracts, glaucoma

Musculoskeletal:
Osteopenia/osteoporosis, avascular necrosis, myopathy

Neuropsychiatric:
Insomnia, mania, psychosis, dysphoria, depression, euphoria

Immune system:
Increased susceptibility to infections

GI:
Gastritis, peptic ulcer disease

Endocrine system:
Diabetes/hyperglycemia, adrenal insufficiency, weight gain, cushingoid appearance, fluid retention

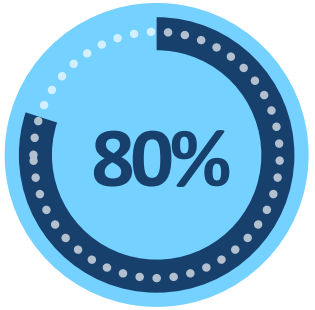
Pharmacists can minimize patient exposure to systemic corticosteroids by:

- Recommending topical instead of systemic administration
- Suggesting corticosteroid-sparing medications, such as biologics
- Referring for surgical intervention as appropriate
- Recommending supportive or preventive care, such as vitamin D

Orlandi RR et al. *Int Forum Allergy Rhinol*. 2021;11(3):213-739; Hox V et al. *Clin Transl Allergy*. 2020;10:1; Yassir M et al. *StatPearls.* StatPearls Publishing; 2024. https://www.ncbi.nlm.nih.gov/books/NBK531462/

Surgical Treatment

- Surgery can be appropriately offered when:
  - CT evidence of disease (Lund Mackay score ≥1) ***AND*** SNOT-22 ≥20
    - Following treatment with intranasal corticosteroid of ≥8 weeks ***AND*** a short course of systemic corticosteroid (1-3 weeks duration)



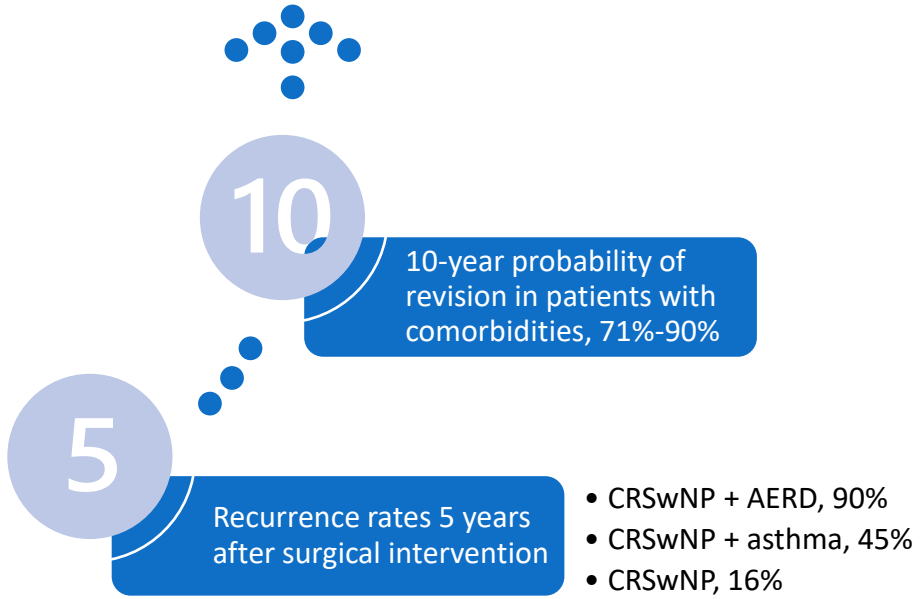
Patients requiring revision sinus surgery had CRSwNP

Orlandi RR et al. *Int Forum Allergy Rhinol*. 2021;11(3):213-739; Rudmik L et al. *Int Forum Allergy Rhinol*. 2016;6(6):557-567; Smith TL et al. *Int Forum Allergy Rhinol*. 2019;9(8):831-841.

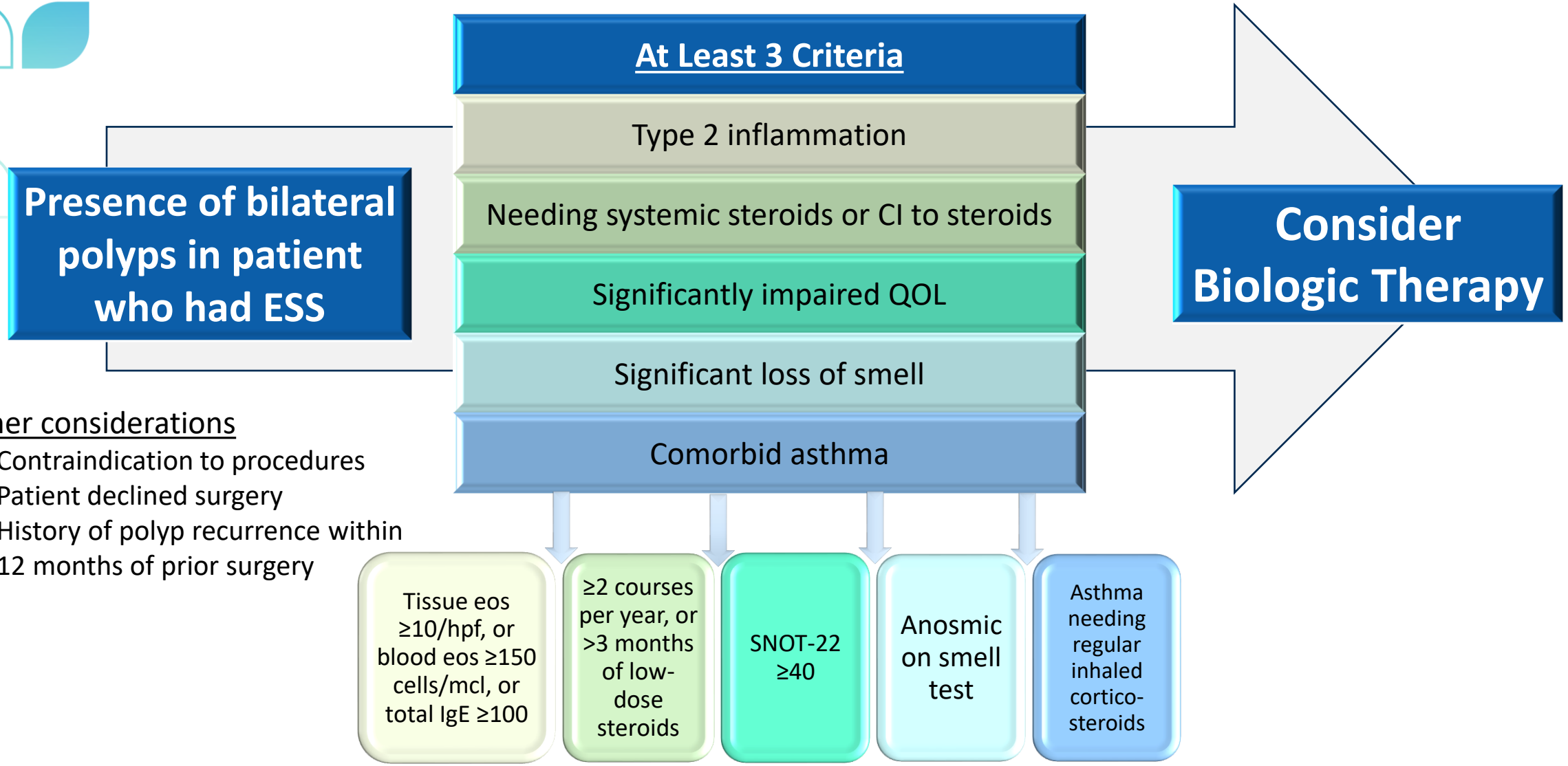
Challenges With Standard Treatment and Surgery

- INCS
  - Outcomes
    - ↓ nasal polyp size
    - ↓ sinonasal symptoms
    - ↑ QOL
  - Barriers
    - Fear of adverse effects
    - Fear of loss of effect
    - Unpleasant sensory attributes
    - Cost/coverage issues
    - **Adherence rates only 18.0%-44.3%**

- Endoscopic sinus surgery



Stevens WW et al. *J Allergy Clin Immunol Pract*. 2016;4(4):565-572; Bridgeman MB. *Integr Pharm Res Pract*. 2017;6:109-119; Valverde-Monge M et al. *J Investig Allergol Clin Immunol.* 2022;32(4):299-301; Codispoti CD, Mahdavinia M. *Ann Allergy Asthma Immunol*. 2019;123(3):232-239; Hopkins C et al. *Rhinology.* 2022;60(4):252-260.



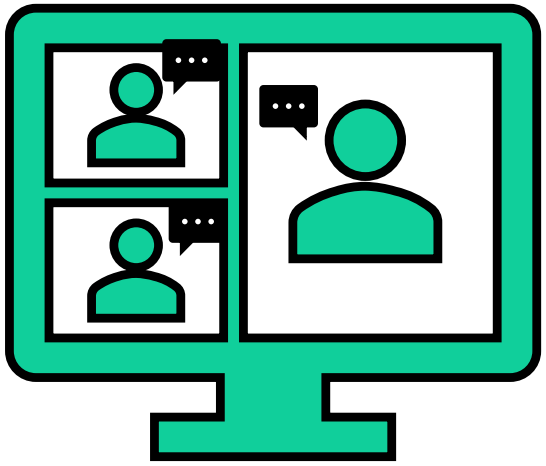
Other considerations

- Contraindication to procedures
- Patient declined surgery
- History of polyp recurrence within 12 months of prior surgery

CI, contraindicated; eos, eosinophils; ESS, endoscopic sinus surgery; hpf, high-powered field; QOL, quality of life.

Fokkens WJ et al. *Rhinology*. 2023;61(3):194-202.

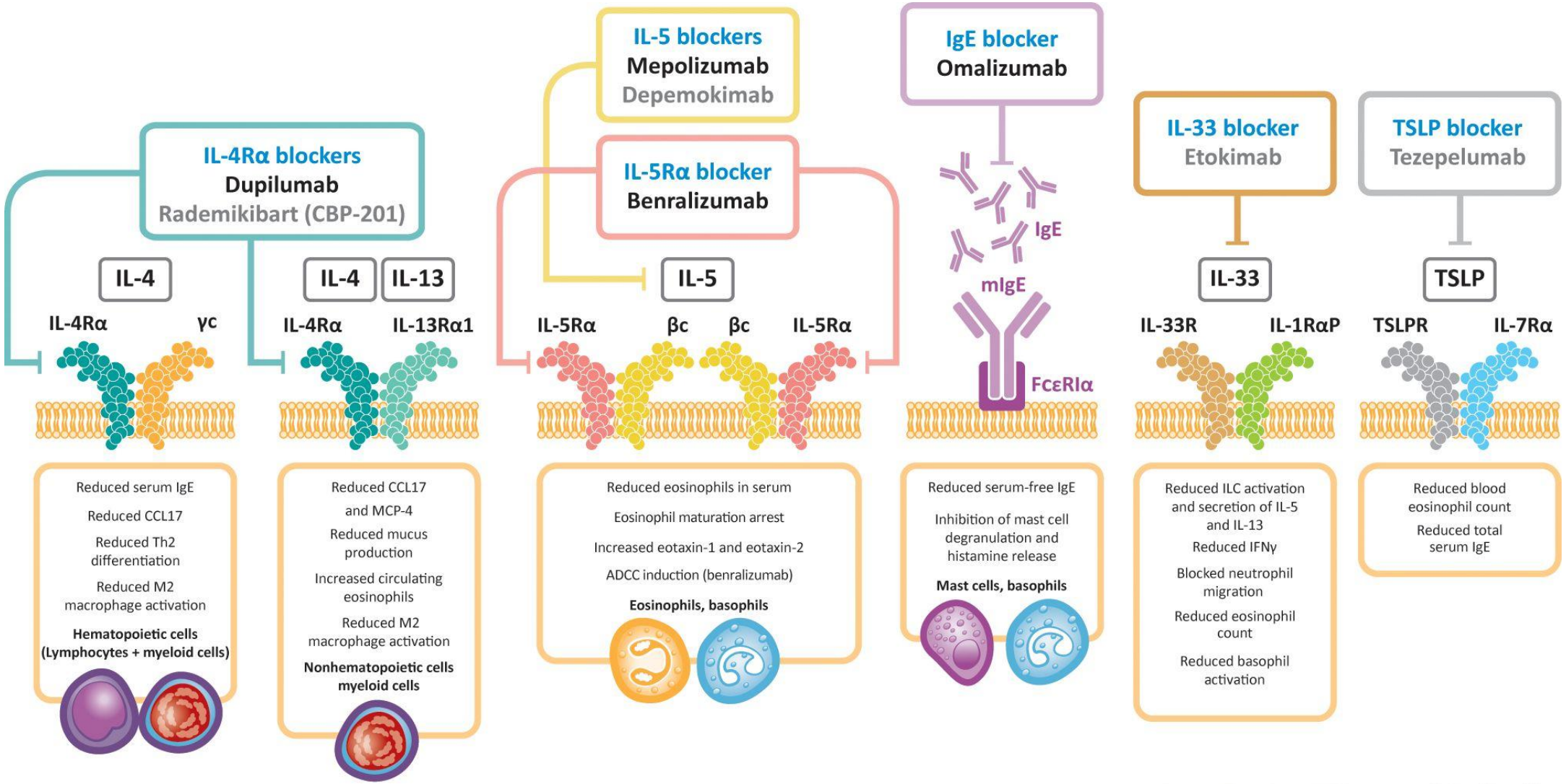
Panel Discussion



Biologic Therapies

Damien Fisher, PharmD, AE-C

Biologic Landscape in CRSwNP



FDA-Approved Biologics for CRSwNP

Dupilumab

- Monoclonal anti-IL-4Rα → Blocks IL-4 and IL-13 signaling
- Approved add-on maintenance therapy for adult and adolescent patients (≥12 years) with poorly controlled CRSwNP
  - Dosing 300 mg SC Q2W

Mepolizumab

- Monoclonal anti-IL-5 → Blocks binding of IL-5 to IL-5R to eosinophils and basophils
- Approved as add-on maintenance treatment in adult patients with CRSwNP
  - Recommended dose is 100 mg SC Q4W

Omalizumab

- Monoclonal anti-IgE → Blocks IgE binding to FcεR1 on mast cells, basophils, and dendritic cells
- Approved as add-on maintenance treatment in adult patients with CRSwNP with inadequate response to nasal corticosteroids
  - Dosing is 75-600 mg SC Q2W or Q4W depending on patient weight and serum IgE levels
- Boxed warning for anaphylaxis

SC, subcutaneous; Q, every; W, weeks.

Dupixent. Prescribing information. Regeneron; 2024; Nucala. Prescribing information. GSK; 2023; Xolair. Prescribing information. Genentech; 2024.

Summary of Biologics Clinical Trial Efficacy

Trial	SINUS-24	SINUS-52	SYNAPSE	POLYP1	POLYP2
Drug	**Dupilumab**		**Mepolizumab**	**Omalizumab**	
Participants	≥18 years with bilateral CRSwNP and symptoms and a history of steroid use or surgery		≥18 years with recurrent, refractory, severe, bilateral nasal polyp symptoms and a history of surgery	18-75 years on INCS for at least 4 weeks	
Intervention **Control**	Dupilumab 300 mg every 2 weeks Placebo N=276, 24 weeks	Dupilumab 300 mg every 2 weeks Dupilumab 300 mg every 2 weeks × 24 weeks then every 4 weeks Placebo N=448, 52 weeks	Mepolizumab 100 mg every 4 weeks Placebo N=407, 52 weeks	Omalizumab (dose based on IgE and weight) Placebo and mometasone N=138, 24 weeks	N=127, 24 weeks
Outcomes	**NPS**: -2.06 (95% CI [-2.43 to -1.69] *P* <0·0001) **NCS**: -0.89 (95% CI [-1.07 to -0.71] *P* <0.0001)	**NPS**: -1.80 (95% CI [-2.10 to -1.51] *P* <0·0001) **NCS**: -0.87 (95% CI [-1.03 to -0.71] *P* <0.0001)	**NPS:** -0.73, (95% CI [-1.11 to -0.34] *P* <0.0001) **Nasal obstruction symptom VAS**: -3.14, (95% CI [-4.09 to -2.18] *P* <0·0001)	**NPS**: -1.08 vs 0.06 (*P* <0.0001) **NCS**: -0.89 vs -0.35 (*P* = 0.0004) **SNOT-22**: -24.7 vs -8.6 (*P* <0.0001)	**NPS** -0.90 vs -0.31 (*P* = 0.0140) **NCS**: -0.70 vs -0.20 (*P* = 0.0017) **SNOT-22**: -21.6 vs -6.6 (*P* <0.0001)
Study Conclusions	In adult patients with severe CRSwNP, dupilumab reduced polyp size, sinus opacification, and severity of symptoms and was well tolerated.		Mepolizumab treatment improved nasal polyp size and nasal obstruction compared with placebo, with no new safety indications, in patients with recurrent, refractory severe chronic rhinosinusitis with nasal polyps.	Omalizumab significantly improved endoscopic, clinical, and patient-reported outcomes in severe CRSwNP with inadequate response to intranasal corticosteroids, and it was well tolerated.	

AERD, aspirin-exacerbated respiratory disease; INCS, intranasal corticosteroid; INS, intranasal spray; NCS, nasal congestion score; NPS, nasal polyp score; SNOT-22, 22-item sinonasal outcome test; VAS, visual analog scale.

Bachert C et al. *Lancet*. 2019;394(10209):1638-1650; Gevaert P. *J Allergy Clin Immunol*. 2020;146(3):595-605; Han JK et al. *Lancet Respir Med*. 2021;16:S2213-2600(21)00097-7.

Biologics Adverse Effects

IL-4α antagonist dupilumab (≥3%)

Injection site reactions (6%), arthralgia (3%)

IL-5 antagonist mepolizumab (≥3%)

Oropharyngeal pain (8%), arthralgia (6%), abdominal pain (3%), diarrhea (3%), pyrexia (3%), nasal dryness (3%), rash (3%)

Anti-IgE antibody omalizumab (≥3%)

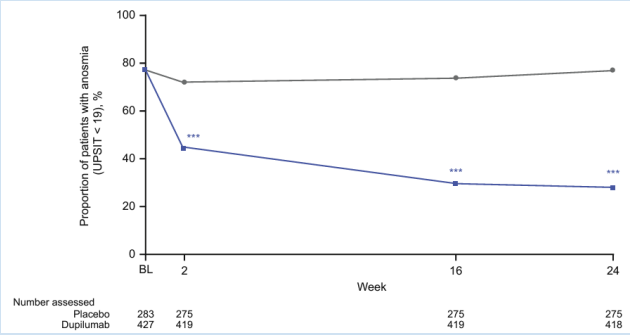
Headache (8%), injection site reaction (5%), arthralgia (3%), upper abdominal pain (3%), dizziness (3%)

Dupixent. Prescribing information. Regeneron; 2024; Nucala. Prescribing information. GSK; 2023; Xolair. Prescribing information. Genentech; 2024.

Updates for Approved Biologics in CRSwNP

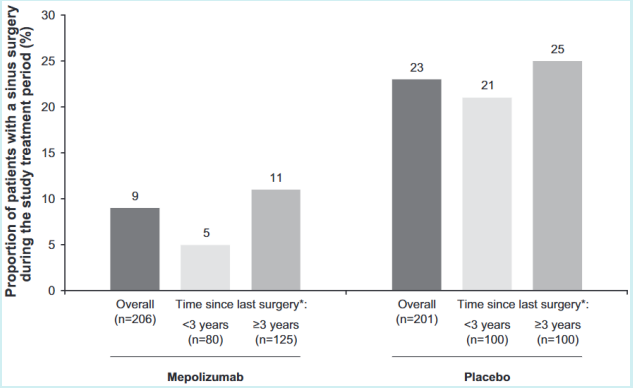
Dupilumab

- Post hoc analysis found significant improvement across all daily assessed measures within 4 days of initiating treatment:
- Anosmia – 3 days
- Nasal congestion – 2 days
- Peak nasal inspiratory flow – 4 days



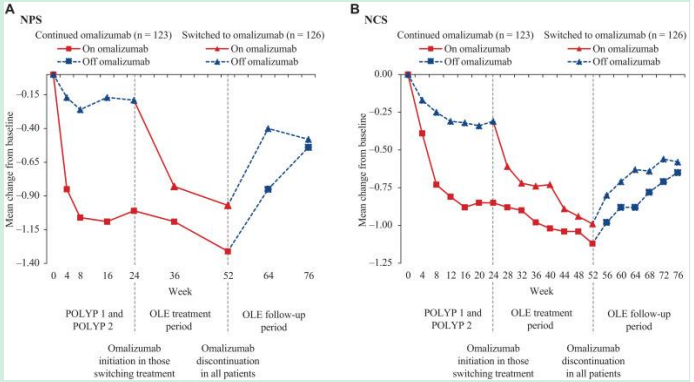
Mepolizumab

- Post hoc analyses found mepolizumab:
  - Reduced risk of sinus surgery
  - Improved sleep/fatigue scores



Omalizumab

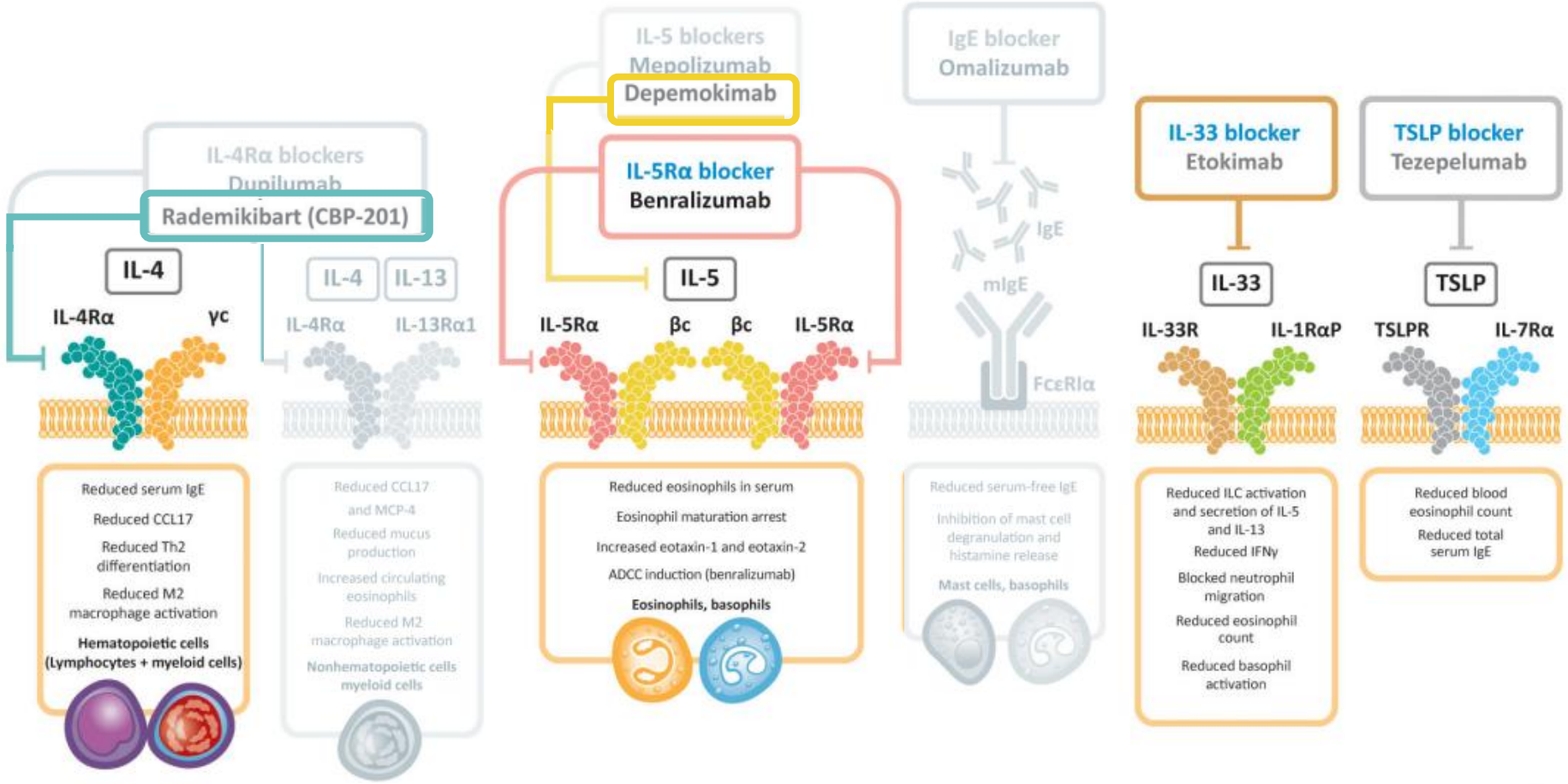
- Open-label extension study demonstrated sustained improvements in NPS and NCS with continuous treatment through 52 weeks



NCS, nasal congestion score; NPS, nasal polyp score.

Hellings PW et al. *Int Forum Allergy Rhinol*. 2022;12(7):958-962; Mullol J et al. *J Allergy Clin Immunol Pract*. 2022;10(4):1086-1095.e5; Gevaert P et al. *J Allergy Clin Immunol.* 2022;149(3):957-965.e3; Fokkens WJ et al. *Allergy*. 2023;78(3):812-821; Howarth P et al. *J Allergy Clin Immunol.* 2024;153(2):Abstract 659.

Investigational Biologics in CRSwNP



Clinical Data for Investigational Biologics in CRSwNP

Benralizumab

- Phase 3 OSTRO trial
  - Significant improvements in NPS and nasal blockage score
  - Improvements in SNOT-22 when added to SOC

Depemokimab

- Phase 3 ANCHOR-1/ ANCHOR-2 trials
  - Significant reduction in nasal polyp size and nasal obstruction

Tezepelumab

- Phase 3 WAYPOINT trial
  - Data forthcoming
  - Versus placebo
- Outcomes:
  - Nasal polyp score
  - Nasal congestion score

Lebrikizumab

- Phase 3 CONTRAST-NP trial
  - Estimated 10/2026
  - Add-on to INCS therapy
- Outcomes:
  - Nasal congestion score
  - Nasal polyp score

Phase 2 study completed for etokimab; phase 3 studies yet to be announced.

Trial of rademikibart terminated due to enrollment challenges.

Bachert C et al. *J Allergy Clin Immunol.* 2022;149(4):1309-1317.e12; GSK announces positive phase III results from ANCHOR trials for depemokimab in chronic rhinosinusitis with nasal polyps. News release. GSK. October 14, 2024. Accessed November 7, 2024. https://www.gsk.com/en-gb/media/press-releases/gsk-announces-positive-phase-iii-results-from-anchor-trials/ ; ClinicalTrials.gov: NCT04851964, NCT06338995, accessed December 4, 2024.

Patterns of Biologic Use

- In the United States, patients using biologics for CRSwNP are more likely to:

Have ≥3 comorbid conditions

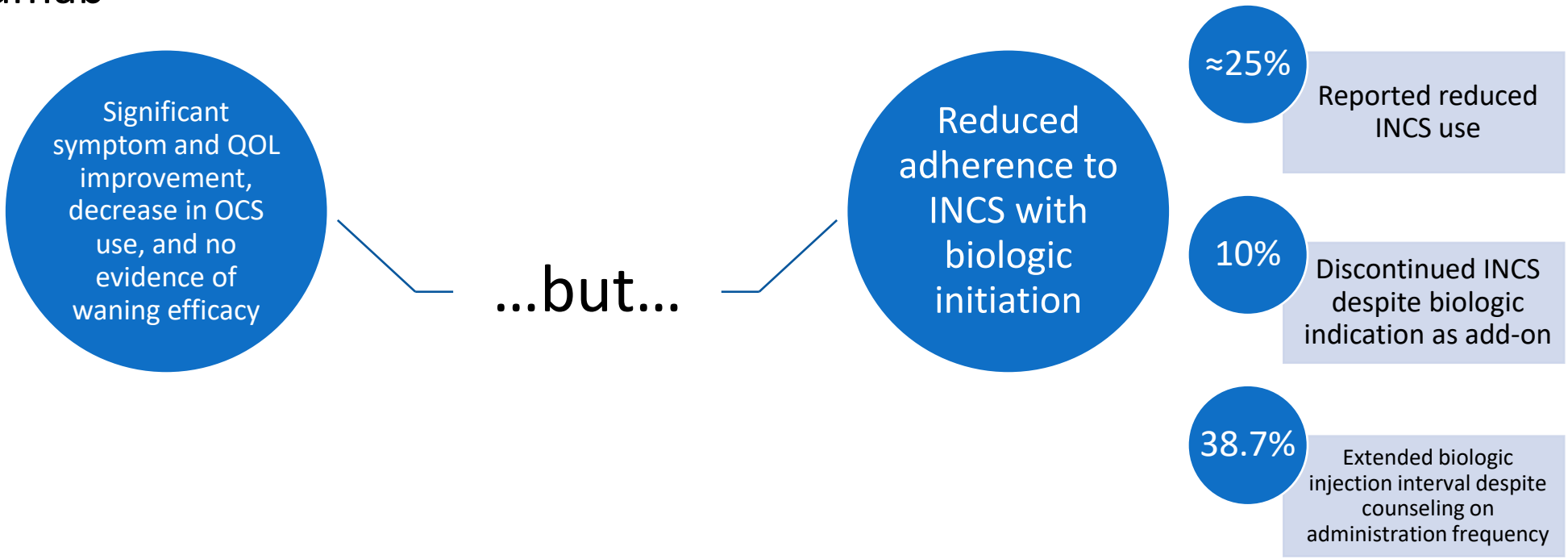
Age 35-65 years

Use OCS

Silver J et al. *Allergy Asthma Clin Immunol.* 2023;19:104.

4-Year Real-World Biologic Use

- Observational study in Germany from May 2019 to November 2023 of patients with severe uncontrolled CRSwNP (N = 191) receiving dupilumab, omalizumab, or mepolizumab



Frankenberger H et al. *Eur Arch Oto-Rhino-Laryngol.* 2024;281:5773-5782.

Evaluating Effectiveness of Biologics

Evaluate biologic response at 6 months and 1 year

Types of Outcomes	Evaluation Criteria	Biologic Response
SNOT-22	❑ Reduced nasal polyp size ❑ Reduced need for systemic corticosteroids ❑ Improved QOL ❑ Improved sense of smell ❑ Reduced impact of comorbidities	Good to Excellent 4-5 Criteria
Smell tests (loss of smell)		
Nasal congestion		
Control of comorbidities		Poor to Moderate 1-3 Criteria
Nasal polyp score		
CT scan scores		No Response 0 Criteria

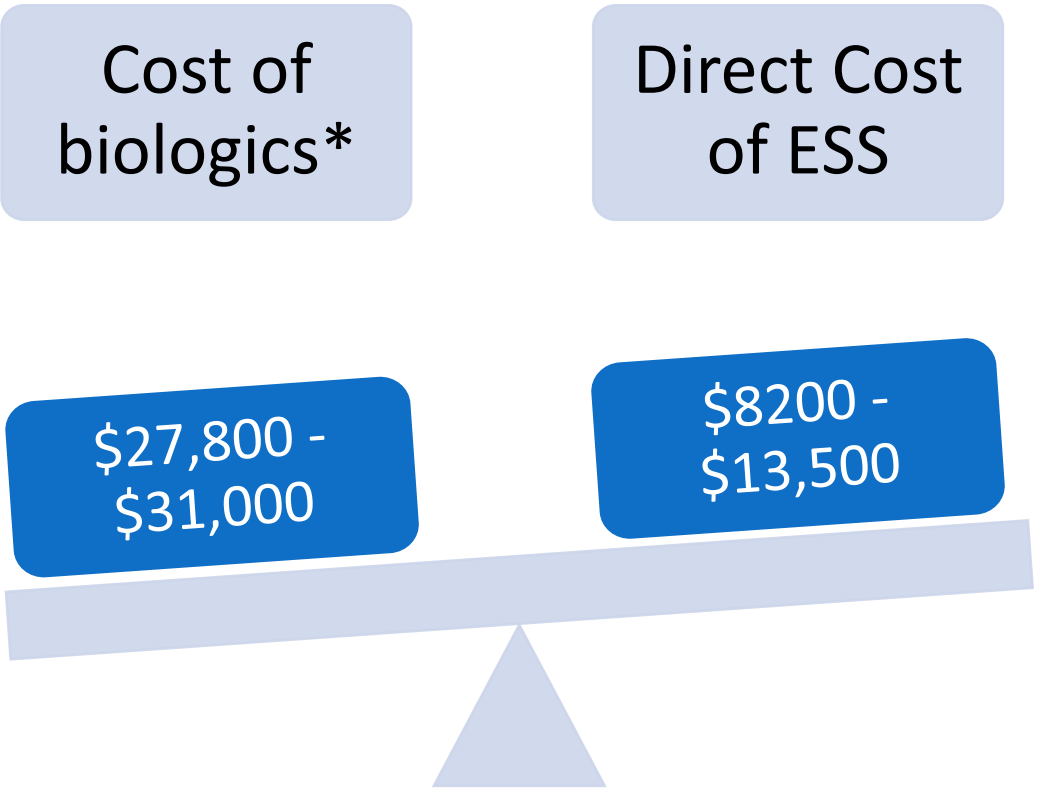
Fokkens WJ et al. *Rhinology.* 2023;61(3):194-202.

Cost of Treatment

- Annual cost of biologics ranges from $27,800 to $31,000

Dupilumab	300 mg SC Q2W
Mepolizumab	100 mg SC Q4W
Omalizumab	75-600 mg SC Q2W or Q4W *Based on serum total IgE level (IU/mL) and body weight (kg)*

Indirect Cost of ESS
Recovery time
Caregiver expense
Recurring polyps



ESS, endoscopic sinus surgery.

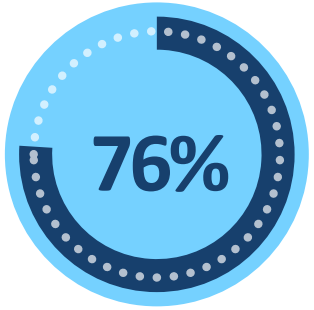
*Cost of therapy may vary significantly based on dosing instructions.

Dupixent. Prescribing information. Regeneron; 2024; Xolair. Prescribing information. Genentech; 2024; Nucala. Prescribing information. GSK; 2023; Chapurin N et al. *Am J Rhinol Allergy.* 2023;37(2):227-231; Bhattacharyya N et al. *Laryngoscope.* 2019;129(9):1969-1975; Ramkumar SP et al. *Front Allergy.* 2023;4:1137907; Gomes PL et al. Biologics for Chronic Rhinosinusitis with Nasal Polyps. American Academy of Otolaryngology Head and Neck Surgery Bulletin. December 12, 2023. Accessed November 7, 2024. https://bulletin.entnet.org/clinical-patient-care/article/22881642/biologics-for-chronic-rhinosinusitis-with-nasal-polyps

Reducing Barriers to Adherence and Biologic Access

- Top actionable recommendation: **shared decision-making** with patients and clinicians
  - Treatment cost, efficacy, risk, administration, and expectations
- Reported via survey distributed to members of the Canadian Society of Otolaryngology Head and Neck Surgery (CSOHNS)

Involved another specialty when initiating biologics



Identified affordability as main barrier to recommending biologic therapy for patients

Bell CM et al. *Laryngoscope*. 2024;134(8):3493-3498; Ramkumar SP et al. *Front Allergy.* 2023;4:1137907.

Roles of the Pharmacist

Medication Management

Inflammatory-related comorbidities (eg, asthma)

Education and Patient Support

Vaccine recommendations
Injection training
Monitoring adherence
Assisting in patient outcome data
Support for drug access

Counseling on Managing Adverse Effects

- *Injection site reactions*: administer medication at room temperature, use of cold packs
- *Pains, arthralgias, headache*: acetaminophen vs NSAIDs
- *Conjunctivitis*
- *Fainting* (low blood pressure): sit/stand up slowly

Identify Patients Who May Benefit From Biologic Therapy

Symptom awareness and severity

NSAID, nonsteroidal anti-inflammatory drug.

Hopkins C. *N Engl J Med*. 2019;381(1):55-63; Bachert C et al. *J Allergy Clin Immunol*. 2022;149(4):1309-1317.e2; Fokkens WJ et al. *Rhinology.* 2023;61(3):194-202.

Patient Education and Concerns

Symptomatology of CRSwNP

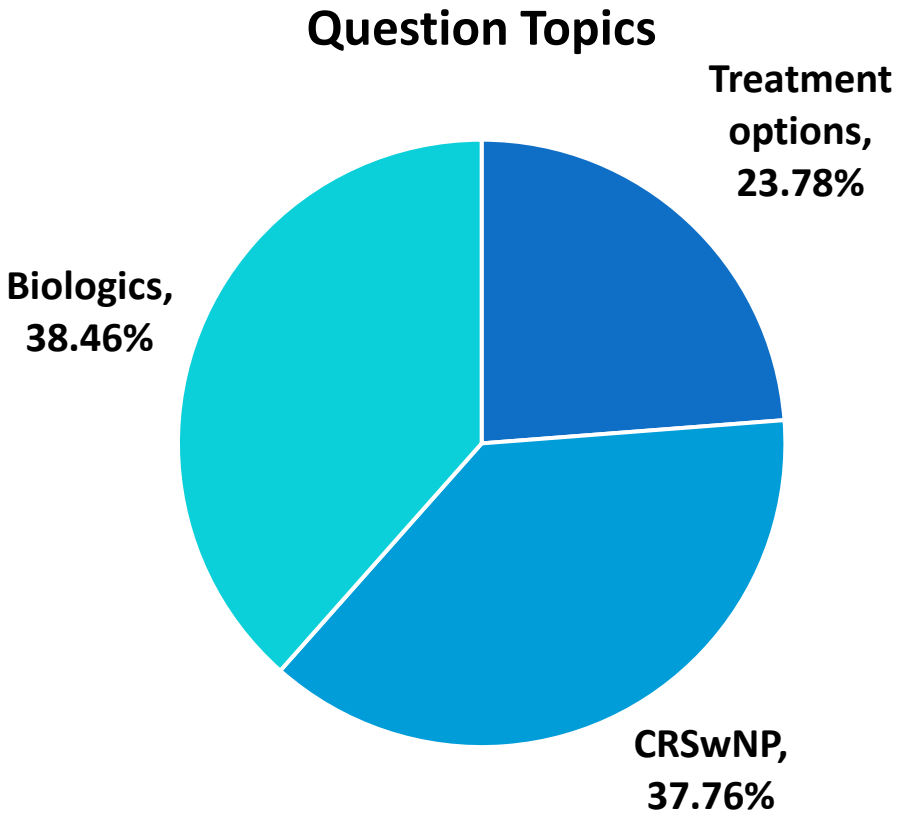
- Presence of comorbidities

Review medical history for recurrent use of steroids (or antibiotics)

- How long have you been using [intranasal steroid]?
- How often do you use it? Daily? As needed? Seasonally?
- Does it seem to help?

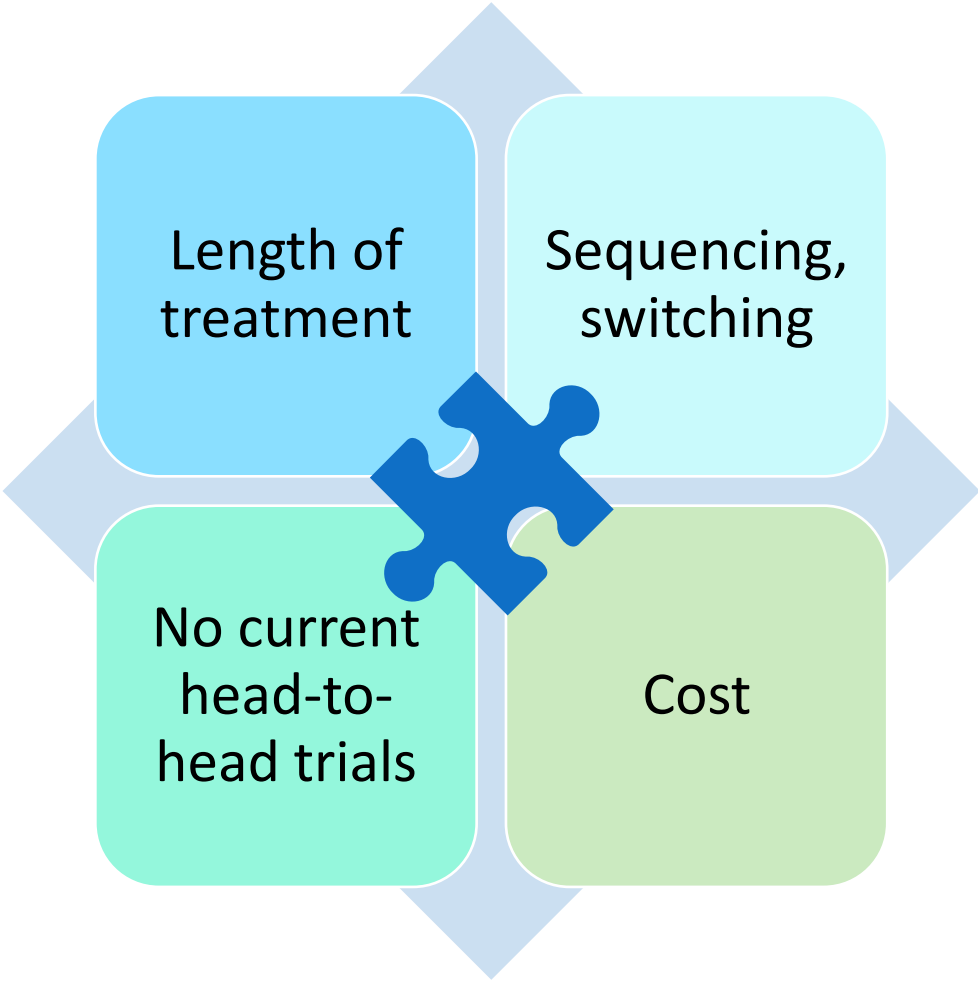
Initial counseling on biologics

- Indication
- Administration and adherence
- Considerations with corticosteroids
- Time to benefit
- Adverse effects
- Storage



Razmi SE et al. *Ear Nose Throat J.* Published online June 24, 2024. doi:10.1177/01455613241264428

Ongoing Considerations and Challenges



Surv.AI Says

AI Methodology

Online conversations from patients and health care professionals regarding management of moderate-to-severe CRSwNP were extracted.

(Sources: Reddit and Google search)

Extracted posts were then classified using our AI tools into distinct themes based on keywords present within the posts.

Analysts refined the data classification results and included actual patients' posts online as examples to the discourse themes. Themes are presented in ranked order.

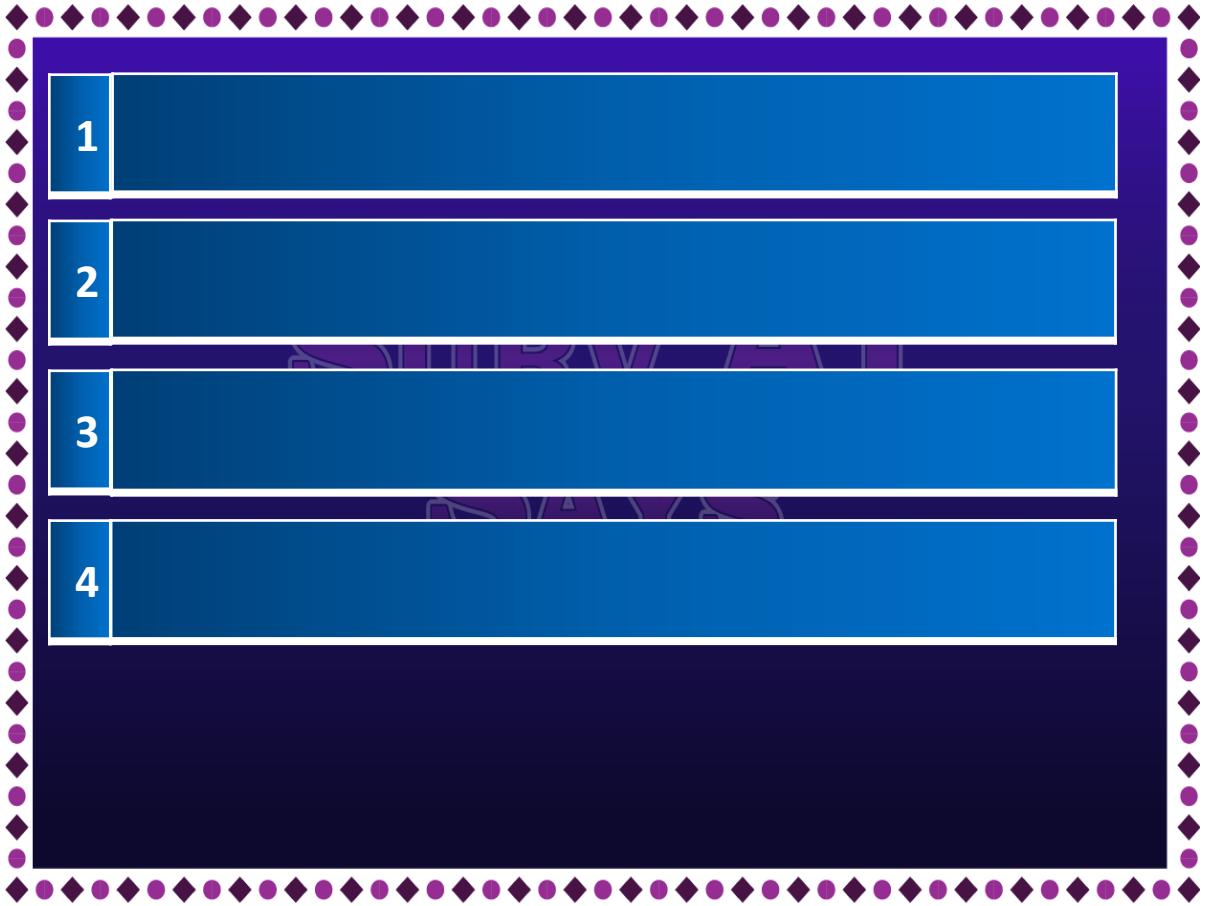
Management of CRSwNP

- Please provide your thoughts on the following question.

What are **health care providers' top 2 challenges** regarding the implementation and management of biologic therapies in moderate-to-severe chronic rhinosinusitis with nasal polyps?

What AI Found

What are **health care providers' top challenges** regarding the implementation and management of biologic therapies in moderate-to-severe CRSwNP?



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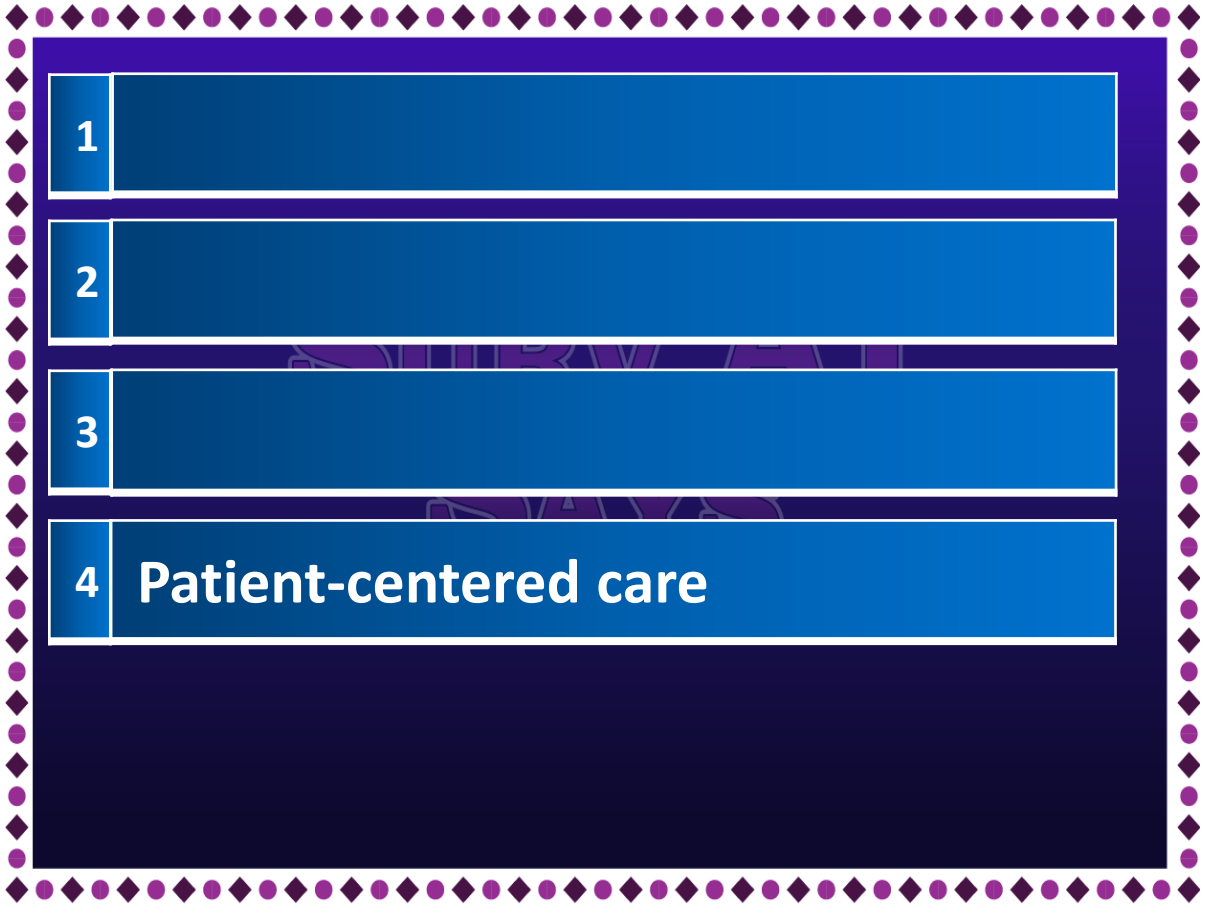

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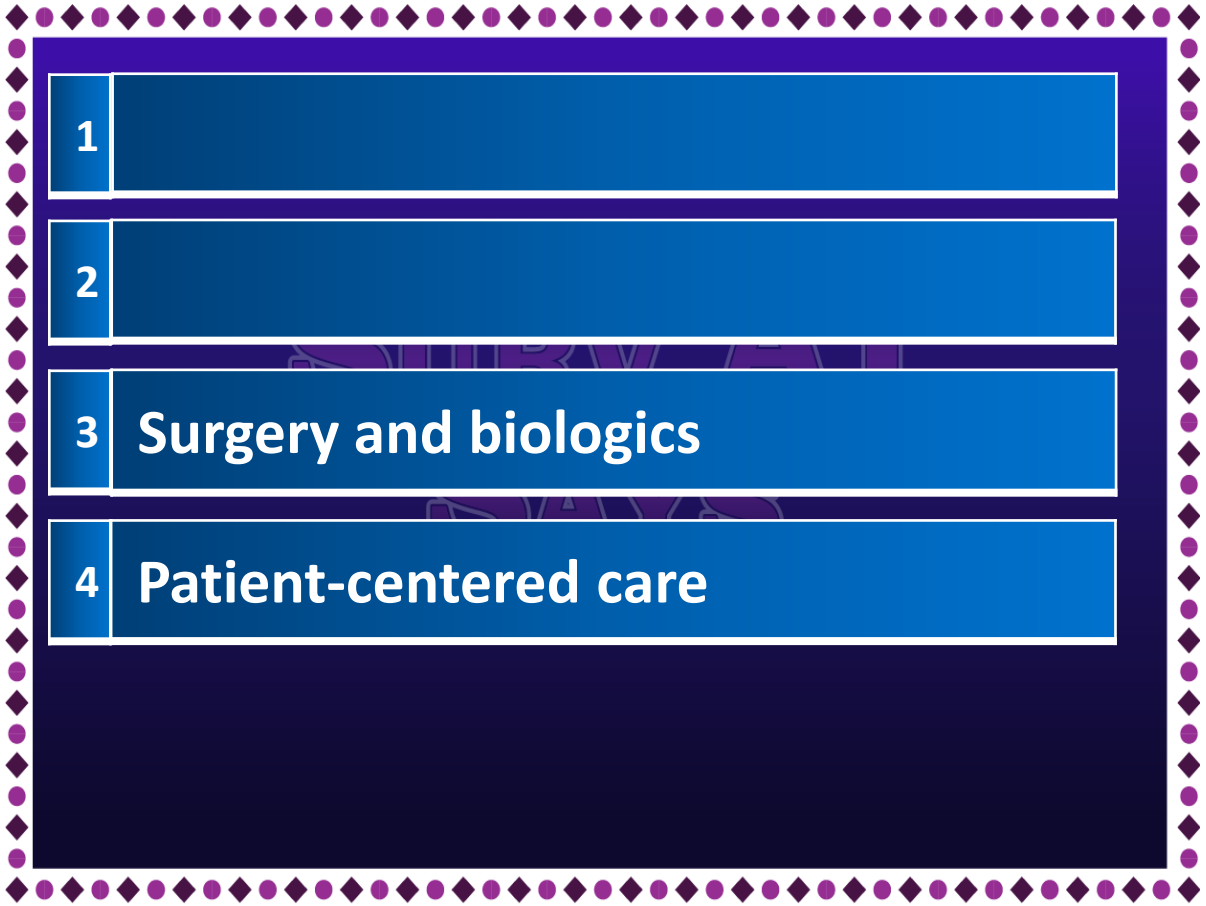

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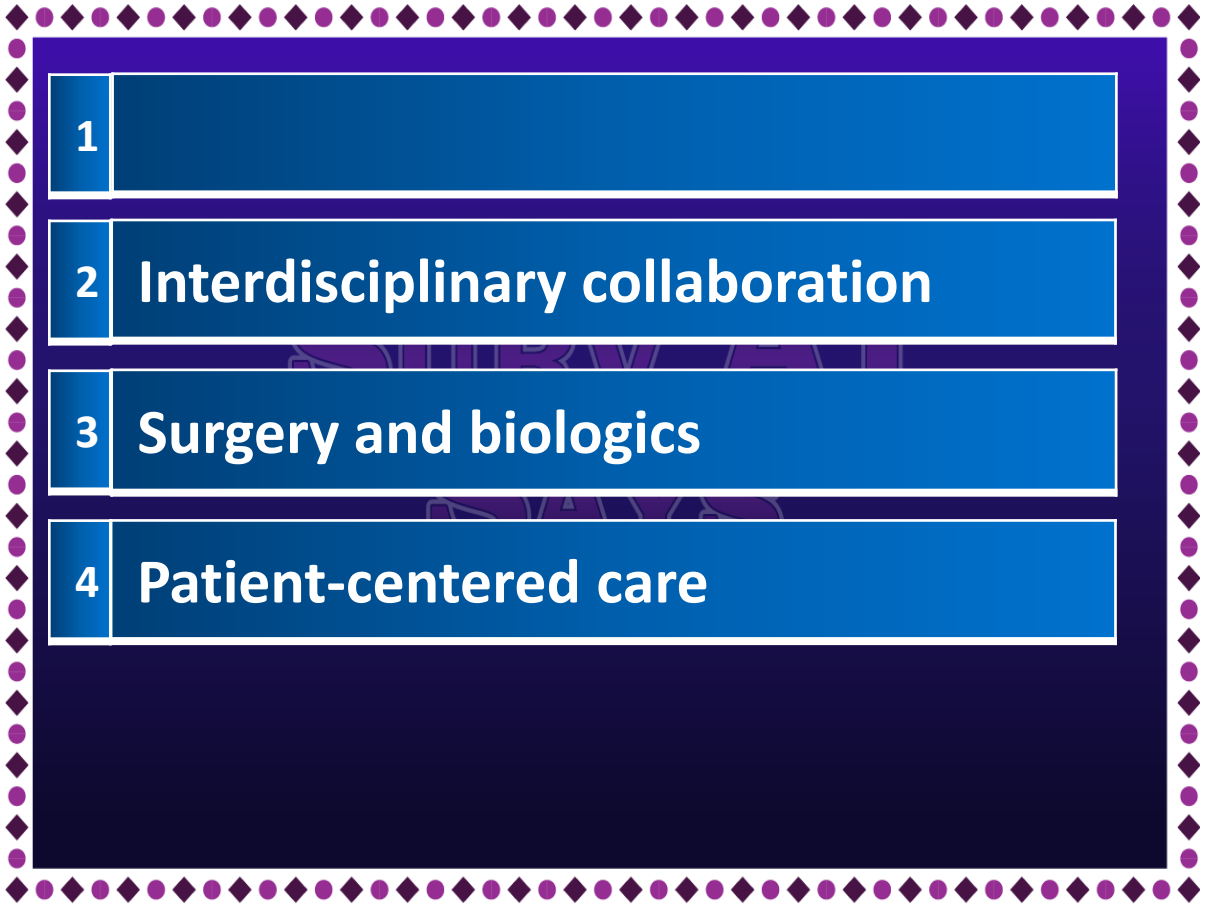

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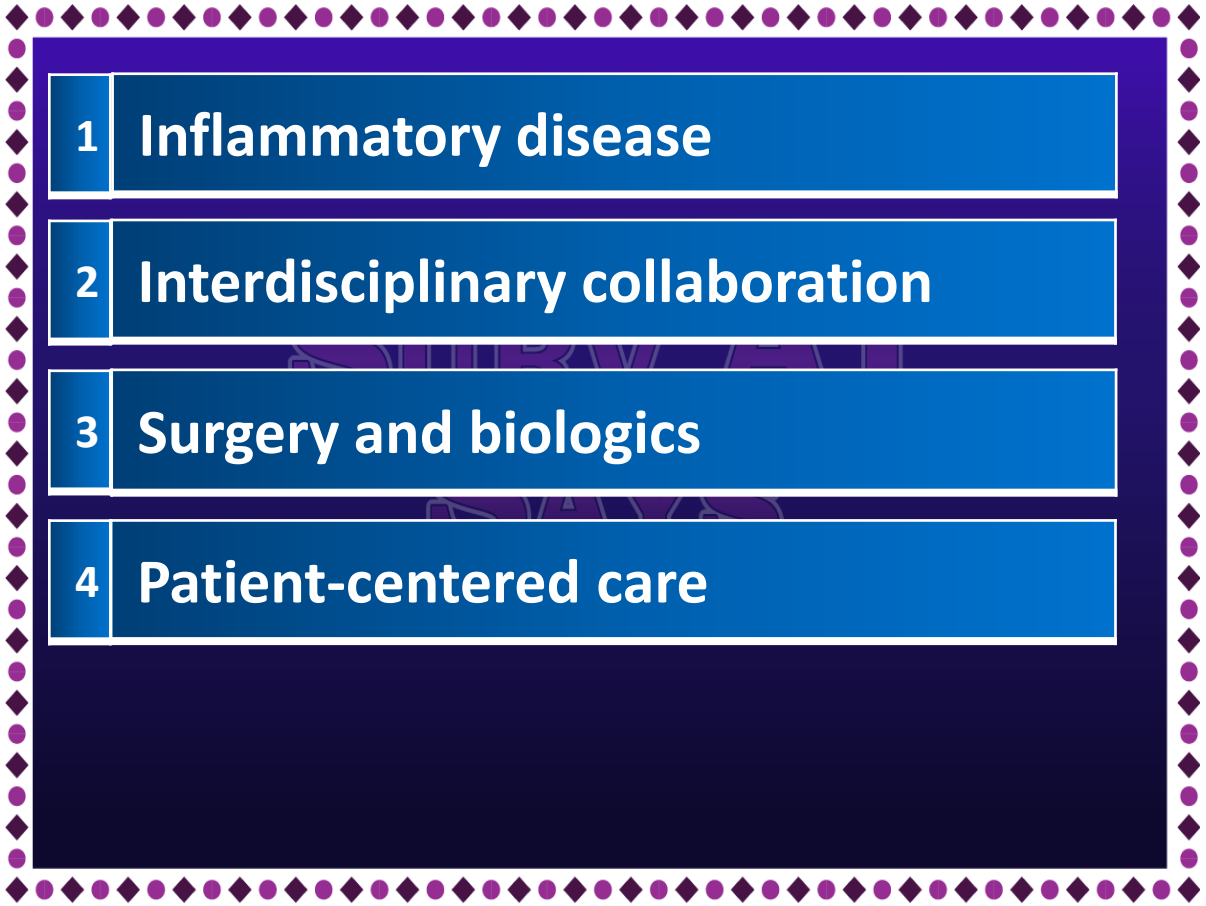
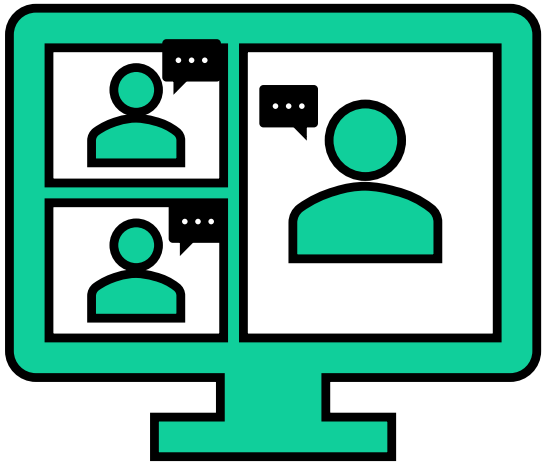


What You Said vs What AI Found

What are **health care providers' top challenges** regarding the implementation and management of biologic therapies in moderate-to-severe CRSwNP?

1. Inflammatory disease
2. Interdisciplinary collaboration
3. Surgery and biologics
4. Patient-centered care

Panel Discussion: Health Care Provider Concerns



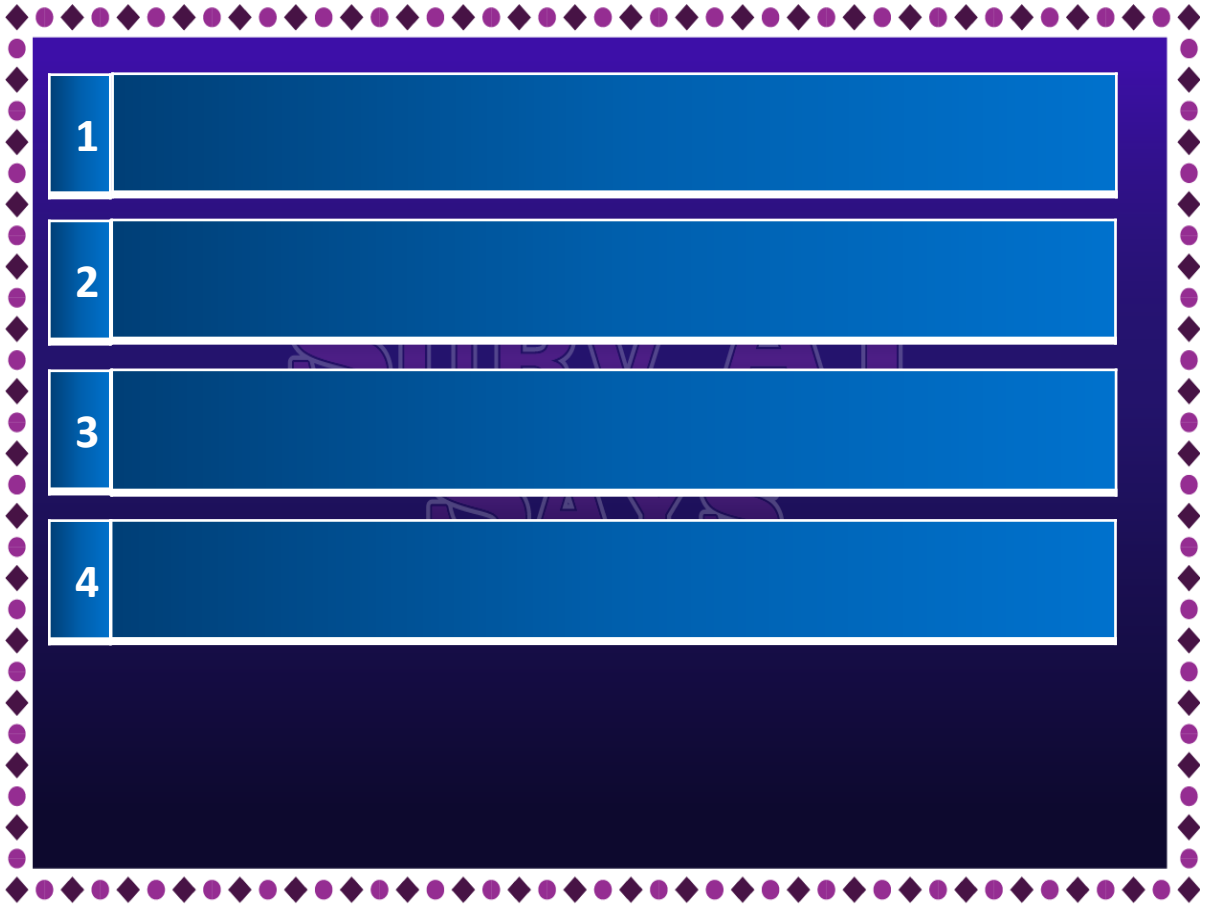
Management of CRSwNP

- Please provide your thoughts on the following question.

What are **patients' top 2 challenges** regarding treatment and management of moderate to severe CRSwNP?

What AI Found

What are **patients' top challenges** regarding treatment and management of moderate to severe CRSwNP?



What AI Found

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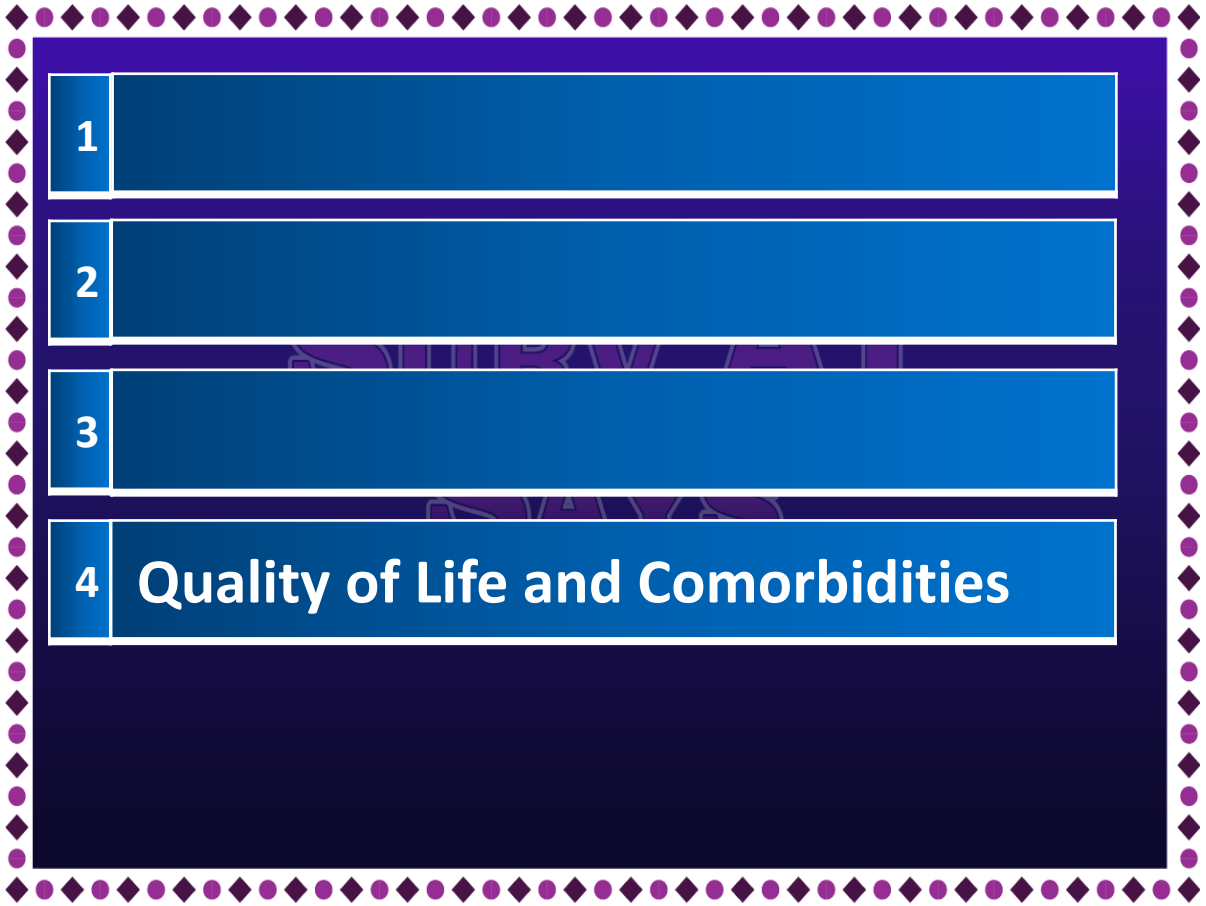


What AI Found

What are **patients' top challenges** regarding treatment and management of moderate to severe CRSwNP?

What AI Found

What are **patients' top challenges** regarding treatment and management of moderate to severe CRSwNP?

1.
2. Limitations of current therapy
3. Alternative care and skepticism
4. Quality of life and comorbidities

What AI Found

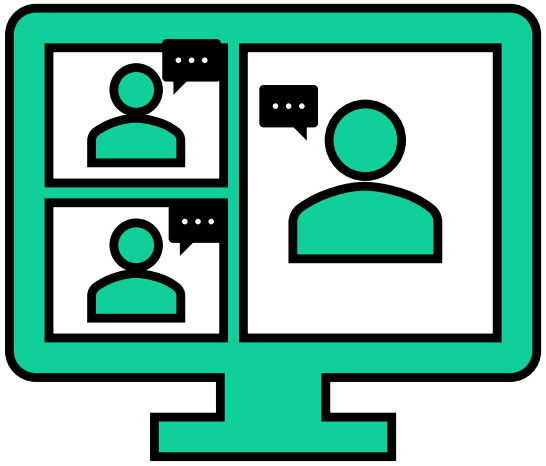
What are **patients' top challenges** regarding treatment and management of moderate to severe CRSwNP?

What You Said vs What AI Found

What are **patients' top challenges** regarding treatment and management of moderate to severe CRSwNP?

1. Access to care
2. Limitations of current treatment
3. Alternative care and skepticism
4. Quality of life and comorbidities

Panel Discussion: Patient Challenges



Conclusions

- CRSwNP is a chronic condition with multiple symptoms, complications, and type 2-mediated comorbidities that can drastically impact patients' quality of life
- Biologic treatment options are emerging to meet goals of CRSwNP treatment
- Specialty pharmacists can ensure appropriate biologic use, connect patients to resources, and provide support to improve access to care

Additional Resources

Resource	Website
American Academy of Allergy Asthma & Immunology	https://www.aaaai.org/tools-for-the-public/conditions-library/allergies/nasal-polyps
Asthma and Allergy Foundation of America (AAFA)	https://aafa.org/asthma-allergy-research/our-research/life-with-nasal-polyps-crswnp/
Allergy & Asthma Network	https://allergyasthmanetwork.org/health-a-z/chronic-rhinosinusitis-with-nasal-polyps-crswnp/

Posttest Questions

Posttest Question 1

Which statement is true about treatment approaches for chronic rhinosinusitis with nasal polyps (CRSwNP)?

A. Patients presenting with isolated CRSwNP tend to have more severe disease requiring multiple treatment approaches.

B. Patients with CRSwNP requiring surgery often find permanent relief with this last line of care.

C. Routine use of antibiotics in patients with CRSwNP has been shown to provide positive long-term outcomes.

D. Adherence rates to intranasal corticosteroids have been shown to be less than 50% in patients with CRSwNP.

Posttest Question 2

A 40-year-old woman with CRSwNP and anosmia has a history of intranasal corticosteroid use and revision surgery. She is assessed to be an appropriate candidate for biologic therapy and was initiated on dupilumab.

Which outcome has been demonstrated in the evidence?

A. Anosmia would likely improve within 3 days.

B. Nasal inspiratory flow would likely improve within 90 days.

C. Nasal congestion would likely improve within 16 weeks.

D. Nasal polyp size would shrink within 1 year.

Posttest Question 3

Which of the following is an appropriate way for a pharmacist to work with other health care providers to support biologic therapy use in patients with CRSwNP?

A. Recommend topical nasal decongestants to all patients with severe CRSwNP.

B. Implement a protocol for initiating antibiotics in all patients with CRSwNP.

C. Discuss with providers about any poor patient adherence with corticosteroid use.

D. Biopsy polyps to determine appropriateness of biologic therapy.

Posttest Question 4

After participating in this activity, how confident are you in addressing concerns of patients with moderate to severe chronic rhinosinusitis with nasal polyps?

A. Not at all
B. Somewhat
C. Moderately
D. Very
E. Extremely

Question and Answer Session

Thank you!

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DAY OF *Education*

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December 12, 2024

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