

12th Annual Otolaryngology Literature Update

Sinus & Rhinology I

Rodney J. Schlosser, M.D.

Professor

Director, Rhinology & Sinus Surgery

Department of Otolaryngology - Head & Neck Surgery

Medical University of South Carolina

schlossr@musc.edu

Rodney J. Schlosser, M.D. is the Director of Rhinology and Sinus Surgery at MUSC. After graduating from the U.S. Military Academy at West Point and serving four years of active military duty in the U.S. Army, Dr. Schlosser received his medical degree from the Mayo Clinic. He then completed his ENT residency at the University of Virginia followed by an additional year of fellowship devoted exclusively to the treatment of advanced sinus disease at the University of Pennsylvania with David W. Kennedy, M.D. one of the premiere sinus surgeons in the world.

Dr. Schlosser has written a textbook on the management of sinus problems and more than 350 articles and chapters dealing with sinus and nasal topics. He regularly travels around the world to speak and teach courses on the latest techniques in endoscopic sinus surgery and computerized image-guided surgery. Dr. Schlosser focuses primarily on difficult adult and pediatric sinus cases, nasal obstruction, revision surgeries, sinonasal tumors.

12th Annual Otolaryngology Literature Update
Medical University of South Carolina

Sinus & Rhinology I

Rodney J. Schlosser, M.D.

- Bachert C, Corren J, Lee SE, Zhang H, Harel S, Cunoosamy D, Khan AH, Jacob-Nara JA, Siddiqui S, Nash S, Rowe PJ, Deniz Y. Dupilumab efficacy and biomarkers in chronic rhinosinusitis with nasal polyps: Association between dupilumab treatment effect on nasal polyp score and biomarkers of type 2 inflammation in patients with chronic rhinosinusitis with nasal polyps in the phase 3 SINUS-24 and SINUS-52 trials. *Int Forum Allergy Rhinol.* 2022 Sep;12(9):1191-1195. doi: 10.1002/alr.22964. Epub 2022 Jan 31. PMID: 34970860; PMCID: PMC9544911.
- Boscolo-Rizzo P, Hummel T, Invitto S, Spinato G, Tomasoni M, Emanuelli E, Tofanelli M, Cavicchia A, Grill V, Vaira LA, Lechien JR, Borsetto D, Polesel J, Dibattista M, Menini A, Hopkins C, Tirelli G. Psychophysical assessment of olfactory and gustatory function in post-mild COVID-19 patients: A matched case-control study with 2-year follow-up. *Int Forum Allergy Rhinol.* 2023 Feb 28. doi: 10.1002/alr.23148. Epub ahead of print. PMID: 36852674.
- Boscolo-Rizzo P, Tirelli G, Meloni P, Hopkins C, Madeddu G, De Vito A, Gardenal N, Valentinotti R, Tofanelli M, Borsetto D, Lechien JR, Polesel J, De Riu G, Vaira LA. Coronavirus disease 2019 (COVID-19)-related smell and taste impairment with widespread diffusion of severe acute respiratory syndrome-coronavirus-2 (SARS-CoV-2) Omicron variant. *Int Forum Allergy Rhinol.* 2022 Oct;12(10):1273-1281. doi: 10.1002/alr.22995. Epub 2022 Mar 24. PMID: 35286777; PMCID: PMC9082058.
- Dehgani-Mobaraki P, Patel Z, Zaidi AK, Giannandrea D, Hopkins C. The Omicron variant of SARS-CoV-2 and its effect on the olfactory system. *Int Forum Allergy Rhinol.* 2023 May;13(5):958-960. doi: 10.1002/alr.23089. Epub 2022 Sep 29. PMID: 36103157; PMCID: PMC9539397.
- Garcia JAP, Miller E, Norwood TG, Dorin NA, Grayson J, Woodworth B, Cho DY. Gabapentin improves parosmia after COVID-19 infection. *Int Forum Allergy Rhinol.* 2023 Jun;13(6):1034-1036. doi: 10.1002/alr.23117. Epub 2022 Dec 15. PMID: 36484400; PMCID: PMC9877759.
- Lee DJ, Cramer HB, Kshirsagar RS, Douglas JE, Kohanski MA, Palmer JN, Adappa ND, Bosso JV. Dupilumab-related adverse events among patients with chronic rhinosinusitis with nasal polyposis. *Int Forum Allergy Rhinol.* 2022 Nov 17. doi: 10.1002/alr.23108. Epub ahead of print. PMID: 36394542.
- Miglani A, Soler ZM, Smith TL, Mace JC, Schlosser RJ. A comparative analysis of endoscopic sinus surgery versus biologics for treatment of chronic rhinosinusitis with nasal polyposis. *Int Forum Allergy Rhinol.* 2023 Feb;13(2):116-128. doi: 10.1002/alr.23059. Epub 2022 Sep 4. PMID: 35980852; PMCID: PMC9877092.
- Yan CH, Jang SS, Lin HC, Ma Y, Khanwalkar AR, Thai A, Patel ZM. Use of platelet-rich plasma for COVID-19-related olfactory loss: a randomized controlled trial. *Int Forum Allergy Rhinol.* 2023 Jun;13(6):989-997. doi: 10.1002/alr.23116. Epub 2022 Dec 21. PMID: 36507615; PMCID: PMC9877663.

Literature course 2023

Rodney J. Schlosser, MD



Professor and Director of Rhinology
Department of Otolaryngology - HNS
Medical University of South Carolina
Charleston, SC



Two hot topics

Biologics & COVID-anosmia



Dupilumab – Death of a profession?

Rodney J. Schlosser, MD



Professor and Director of Rhinology
Department of Otolaryngology - HNS
Medical University of South Carolina
Charleston, SC



Disclosures

- Grant support/consulting: Sanofi, GSK, Genentech, Xhance, Cyrano, Sinusonic

What do we do with this patient?



Surgery first, then biologic for ESS failure?

Which surgery? Lothrop?

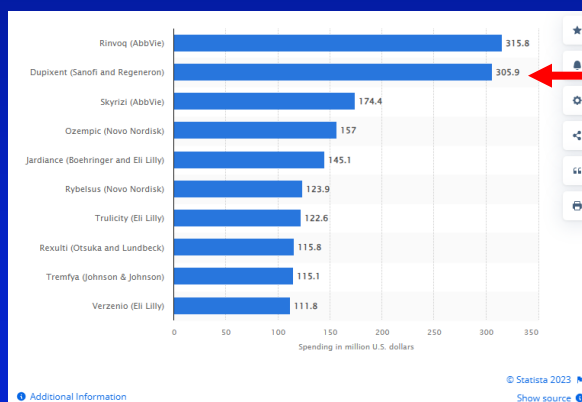
Biologics first, ESS for biologic failure?

Any way to predict treatment response?

8/25/23

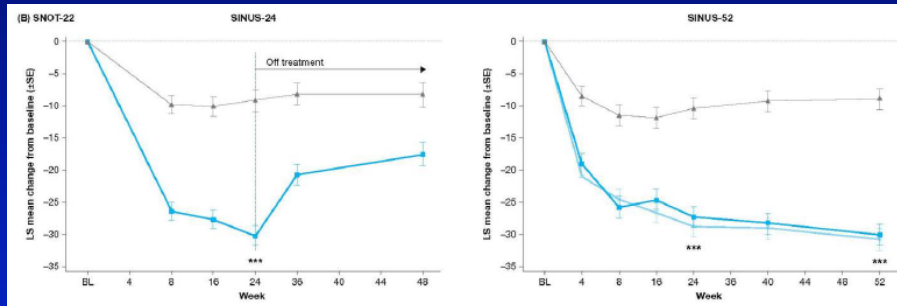
Dupilumab efficacy and biomarkers in chronic rhinosinusitis with nasal polyps: Association between dupilumab treatment effect on nasal polyp score and biomarkers of type 2 inflammation in patients with chronic rhinosinusitis with nasal polyps in the phase 3 SINUS-24 and SINUS-52 trials

Claus Bachert MD, PhD^{1,2,3} | Jonathan Corren MD⁴ | Stella E. Lee MD⁵ |
 Halxin Zhang MSc⁶ | Sivan Harel PhD⁴ | Danen Cunoosamy PhD⁷ |
 Asif H. Khan MBBS, MPH⁸ | Juby A. Jacob-Nara MD, MPH, DHSc⁹ |
 Shahid Siddiqui MD⁶ | Scott Nash MD⁶ | Paul J. Rowe MD⁹ | Yamo Deniz MD⁶



\$305.9M
 TV advertising 2022

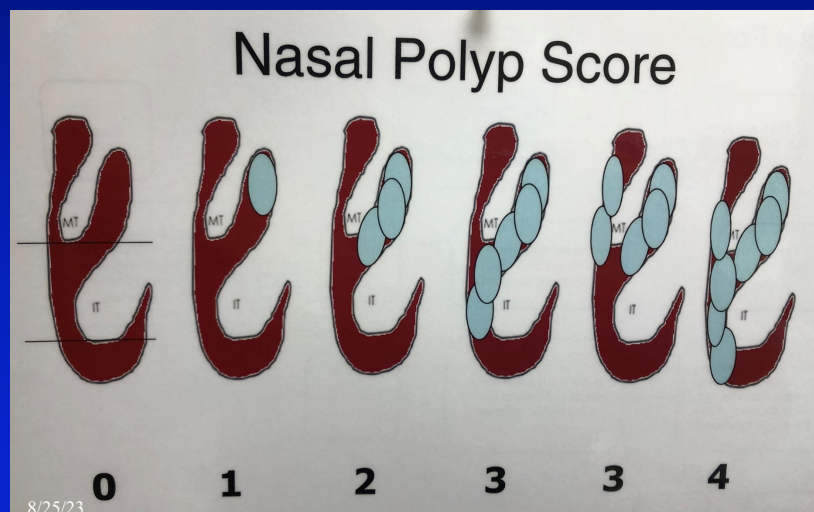
Duration of dupilumab SNOT 22 outcomes (all NP)



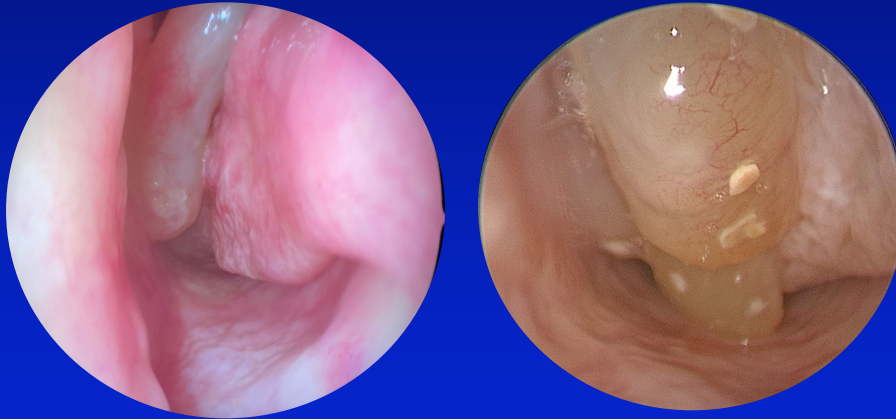
- Active arm with SNOT22 improvement between 17 and 21 compared to placebo
- Optimal maintenance dosing?

8/25/23

Where does inferior turbinate extend to?



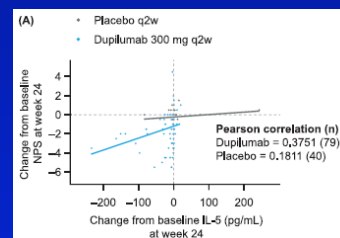
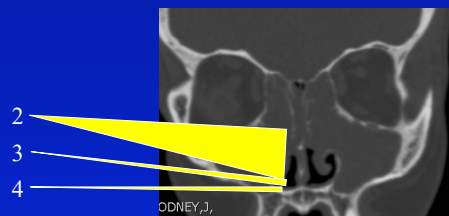
Grade 2 vs Grade 4 polyp



8/25/23

Summary of dupilumab NP responder

NP score improvement	% patients
No response or worse	35-38%
Improve by 1	16-19%
Improve by ≥ 2	46%



Nasal IL5 weak correlation to NP responders

8/25/23

How does ESS compare?

- “Polyps always recur”
- “You will need surgery annually for rest of your life”
- JUST THE FACTS – NO SPIN!

8/25/23

Sino-Nasal Outcome Test-22 Outcomes After Sinus Surgery: A Systematic Review and Meta-Analysis

Zachary M. Soler, MD, MSc ; Rabun Jones, BS; Phong Le, MD; Luke Rudmik, MD;
Jose L. Mattos, MD, MPH; Shaun A. Nguyen, MD ; Rodney J. Schlosser, MD

Systematic Review and Meta-analysis of SNOT-22 Outcomes after Surgery for Chronic Rhinosinusitis with Nasal Polyposis

Phong T. Le, MD¹, Zachary M. Soler, MD¹, Rabun Jones¹,
Jose L. Mattos, MD^{1,2}, Shaun A. Nguyen, MD¹,
and Rodney J. Schlosser, MD¹

- SR/MA show mean SNOT22 improvement 23-24 pts
- Greater SNOT22 improvements after ESS in patients with asthma regardless of NP status, preop SNOT22

8/25/23

CRSwNP revision rates: Meta-analysis

Starting to see impact of phenotypes

Subgroup	Total # of patients (n)	% Revision	% Difference	95% CI	p value
All Studies	34,220	18.6%	8.5	4.6-12.7	p<0.0001
AERD	465	27.2%			
All Studies	34,220	18.6%	10.1	6.1-14.4	p<0.0001
AERS	467	28.7%			
AERD	465	27.2%	1.6	-4.2-7.3	p=0.5902
AERS	467	28.7%			
Asthma	552	22.6%	14.6	5.6-20.3	p=0.0035
No asthma	75	8.0%			
Primary ESS	10030	14.3%	12.1	11.0-13.2	p<0.0001
Any Revision ESS	9910	26.4%			
Studies prior to 2008	2053	22.7%	6.1	4.3-8.0	p<0.0001
Studies after 2008	32264	16.6%			

8/25/23

Loftus C, et al, IFAR 2020

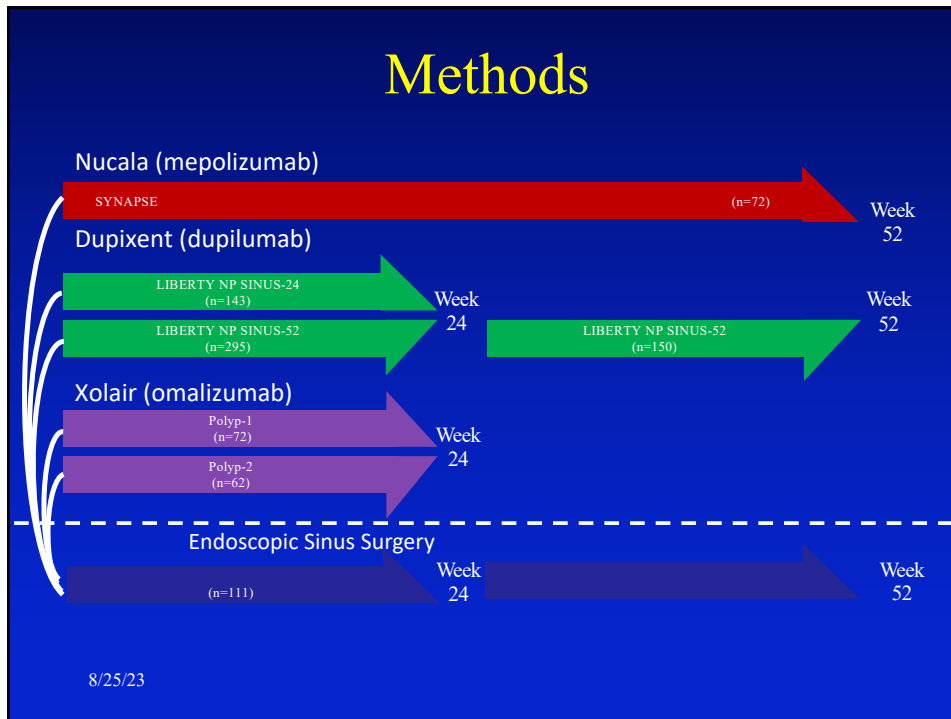
Prospective, randomized, blinded trial of biologic vs ESS will never be done.....BUT

A comparative analysis of endoscopic sinus surgery versus biologics for treatment of chronic rhinosinusitis with nasal polyposis

Amar Miglani MD¹ | Zachary M. Soler MD, MSc¹ | Timothy L. Smith MD, MPH² |
 Jess C Mace MPH² | Rodney J. Schlosser MD^{1,3}

8/25/23

Methods



Outcomes

- PROMs
 - SNOT22
 - Nasal Congestion Score (0-3)
 - Smell Score (0-3)
- Nasal Polyp Score (endoscopy)
- Smell tests: SIT40 or Sniffin Sticks

8/25/23

ESS v dupi 24 wks

	Endpoints	Baseline (mean±SD)	Week 24 (mean±SD)	LS mean change from baseline (±SE)	
ESS (n=111)	NCS	2.9 [±0.3]	0.9 [±0.9]	-1.9 [±0.09]	
	Loss of smell score	2.7 [±0.7]	1.5 [±1.2]	-1.2 [±0.13]	
	SNOT 22 score	56.1 [±19.6]	22.9 [±19.6]	-33.3 [±1.8]	
	Endpoints	Baseline (mean±SD)	Week 24 (mean±SD)	LS mean change from baseline (±SE)	Statistics (comparison of mean A to ESS)
Dupi-24 (n=143)	NCS	2.26 [±0.57]	0.94 [±0.75]	-1.34 [±0.07]	p<0.001
	Loss of smell score	2.70 [±0.57]	1.35 [±0.99]	-1.41 [±0.07]	NS
	SNOT 22 score	48.00 [±20.16]	18.58 [±14.92]	-30.43 [±1.54]	NS
	Endpoints	Baseline (mean±SD)	Week 24 (mean±SD)	LS mean change from baseline (±SE)	Statistics (comparison of mean A to ESS)
Dupi-52 (n=295)	NCS	2.46 [±0.77]	1.19 [±0.90]	-1.25 [±0.06]	p<0.001
	Loss of smell score	2.77 [±0.77]	1.55 [±1.02]	-1.21 [±0.06]	NS
	SNOT 22 score	51.0 [±4.67]	23.89 [±18.77]	-27.77 [±1.26]	p=0.018

Compared to Dupilumab, ESS offers similar-to-superior
symptom benefits at 24 weeks

8/25/23

ESS v dupi 24 wks

	Endpoints	Baseline (mean±SD)	Week 24 (mean±SD)	LS mean change from baseline (±SE)	
ESS (n=111)	NCS	2.9 [±0.3]	0.9 [±0.9]	-1.9 [±0.09]	
	Loss of smell score	2.7 [±0.7]	1.5 [±1.2]	-1.2 [±0.13]	
	SNOT 22 score	56.1 [±19.6]	22.9 [±19.6]	-33.3 [±1.8]	
	Endpoints	Baseline (mean±SD)	Week 24 (mean±SD)	LS mean change from baseline (±SE)	Statistics (comparison of mean A to ESS)
Dupi-24 (n=143)	NCS	2.26 [±0.57]	0.94 [±0.75]	-1.34 [±0.07]	p<0.001
	Loss of smell score	2.70 [±0.57]	1.35 [±0.99]	-1.41 [±0.07]	NS
	SNOT 22 score	48.00 [±20.16]	18.58 [±14.92]	-30.43 [±1.54]	NS
	Endpoints	Baseline (mean±SD)	Week 24 (mean±SD)	LS mean change from baseline (±SE)	Statistics (comparison of mean A to ESS)
Dupi-52 (n=295)	NCS	2.46 [±0.77]	1.19 [±0.90]	-1.25 [±0.06]	p<0.001
	Loss of smell score	2.77 [±0.77]	1.55 [±1.02]	-1.21 [±0.06]	NS
	SNOT 22 score	51.0 [±4.67]	23.89 [±18.77]	-27.77 [±1.26]	p=0.018

Compared to Dupilumab, ESS offers similar-to-superior
symptom benefits at 24 weeks

8/25/23

ESS v oma 24 weeks

	Endpoints	Baseline (mean±SD)	Week 24 (mean±SD)	LS mean change from baseline (±SE)	
ESS	NCS	2.9 [±0.3]	0.9 [±0.9]	-1.9 [±0.09]	
(n=111)	Loss of smell score	2.7 [±0.7]	1.5 [±1.2]	-1.2 [±0.13]	
	SNOT 22 score	56.1 [±19.6]	22.9 [±19.6]	-33.3 [±1.8]	
	Endpoints	Baseline (mean±SD)	Week 24 (mean) (Unable to calculate SD)	LS mean change from baseline (±SE)	Statistics (comparison of mean A to ESS)
Oma-1	NCS	2.4 [±0.7]	1.51	-0.89 [±0.10]	p<0.001
(n=72)	Loss of smell score	2.5 [±0.8]	1.94	-0.56 [±0.09]	p<0.001
	SNOT 22 score	59.8 [±19.7]	35.1	-24.70 [±2.01]	p=0.002
	Endpoints	Baseline (mean±SD)	Week 24 (mean) (Unable to calculate SD)	LS mean change from baseline (±SE)	Statistics (comparison of mean A to ESS)
Oma-2	NCS	2.3 [±0.7]	1.6	-0.70 [±0.11]	p<0.001
(n=62)	Loss of smell score	2.6 [±0.8]	2.02	-0.58 [±0.10]	p=0.001
	SNOT 22 score	59.2 [±20.5]	37.61	-21.59 [±2.25]	p<0.001

Compared to Omalizumab, ESS offers superior symptom benefits at 24 weeks

8/25/23

ESS v oma 24 weeks

	Endpoints	Baseline (mean±SD)	Week 24 (mean±SD)	LS mean change from baseline (±SE)	
ESS	NCS	2.9 [±0.3]	0.9 [±0.9]	-1.9 [±0.09]	
(n=111)	Loss of smell score	2.7 [±0.7]	1.5 [±1.2]	-1.2 [±0.13]	
	SNOT 22 score	56.1 [±19.6]	22.9 [±19.6]	-33.3 [±1.8]	
	Endpoints	Baseline (mean±SD)	Week 24 (mean) (Unable to calculate SD)	LS mean change from baseline (±SE)	Statistics (comparison of mean A to ESS)
Oma-1	NCS	2.4 [±0.7]	1.51	-0.89 [±0.10]	p<0.001
(n=72)	Loss of smell score	2.5 [±0.8]	1.94	-0.56 [±0.09]	p<0.001
	SNOT 22 score	59.8 [±19.7]	35.1	-24.70 [±2.01]	p=0.002
	Endpoints	Baseline (mean±SD)	Week 24 (mean) (Unable to calculate SD)	LS mean change from baseline (±SE)	Statistics (comparison of mean A to ESS)
Oma-2	NCS	2.3 [±0.7]	1.6	-0.70 [±0.11]	p<0.001
(n=62)	Loss of smell score	2.6 [±0.8]	2.02	-0.58 [±0.10]	p=0.001
	SNOT 22 score	59.2 [±20.5]	37.61	-21.59 [±2.25]	p<0.001

Compared to Omalizumab, ESS offers superior symptom benefits at 24 weeks

8/25/23

ESS v dupi 52 weeks

	Endpoints	Baseline (mean±SD)	Week 52 (mean±SD)	LS mean from baseline (±SE)	
ESS	NCS (n=48)	2.9 [±0.3]	0.8 [±0.8]	-2.1 [±0.13]	
	Loss of smell score (n=48)	2.8 [±0.5]	1.6 [±1.2]	-1.2 [±0.16]	
	SNOT-22 score (n=48)	57.7 [±18.9]	23.8 [±19.1]	-33.9 [±3.04]	
	Endpoints	Baseline (mean±SD)	Week 52 (mean±SD)	LS mean from baseline (±SE)	Statistics (comparison to ESS)
Dupi-52 (group A q2w dosing)	NCS	2.48 [±0.62]	1.10 [±0.92]	-1.35[+0.07]	p<0.001
(n=150)	Loss of smell score	2.81 [±0.46]	----	----	----
	SNOT 22 score	50.16 [±19.72]	21.67 [±19.16]	-29.84[+1.63]	NS

Compared to Dupilumab, ESS offers similar symptom benefits at 52 weeks

8/25/23

ESS v dupi 52 weeks

	Endpoints	Baseline (mean±SD)	Week 52 (mean±SD)	LS mean from baseline (±SE)	
ESS	NCS (n=48)	2.9 [±0.3]	0.8 [±0.8]	-2.1 [±0.13]	
	Loss of smell score (n=48)	2.8 [±0.5]	1.6 [±1.2]	-1.2 [±0.16]	
	SNOT-22 score (n=48)	57.7 [±18.9]	23.8 [±19.1]	-33.9 [±3.04]	
	Endpoints	Baseline (mean±SD)	Week 52 (mean±SD)	LS mean from baseline (±SE)	Statistics (comparison to ESS)
Dupi-52 (group A q2w dosing)	NCS	2.48 [±0.62]	1.10 [±0.92]	-1.35[+0.07]	p<0.001
(n=150)	Loss of smell score	2.81 [±0.46]	----	----	----
	SNOT 22 score	50.16 [±19.72]	21.67 [±19.16]	-29.84[+1.63]	NS

Compared to Dupilumab, ESS offers similar symptom benefits at 52 weeks

8/25/23

ESS v mepo 52 weeks

	Endpoints	Baseline (mean±SD)	Week 52 (mean±SD)	LS mean from baseline (±SE)	
ESS	NCS (n=48)	2.9 [±0.3]	0.8 [±0.8]	-2.1 [±0.13]	
	Loss of smell score (n=48)	2.8 [±0.5]	1.6 [±1.2]	-1.2 [±0.16]	
	SNOT-22 score (n=48)	57.7 [±18.9]	23.8 [±19.1]	-33.9 [±3.04]	
	Endpoints	Baseline (mean±SD)	Week 52 (mean±SD)	LS mean from baseline (±SE)	Statistics (comparison to ESS)
Mepo (n=206)	NCS	2.67 [±0.24]	1.4	-1.26 [±1.03]	p<0.001
	Loss of smell score	2.88 [±0.24]	2	-0.84 [±1.08]	p=0.039
	SNOT 22 score	63.7 [±17.6]	34.3	-29.4 [±24.67]	NS

Compared to Mepolizumab, ESS offers similar-to-superior symptom benefits at 52 weeks

8/25/23

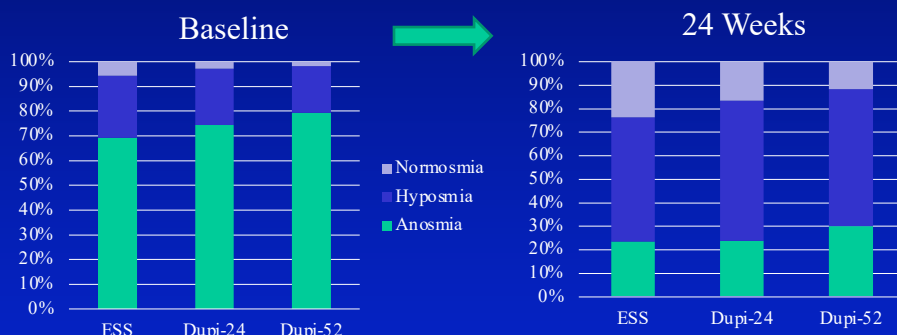
ESS v mepo 52 weeks

	Endpoints	Baseline (mean±SD)	Week 52 (mean±SD)	LS mean from baseline (±SE)	
ESS	NCS (n=48)	2.9 [±0.3]	0.8 [±0.8]	-2.1 [±0.13]	
	Loss of smell score (n=48)	2.8 [±0.5]	1.6 [±1.2]	-1.2 [±0.16]	
	SNOT-22 score (n=48)	57.7 [±18.9]	23.8 [±19.1]	-33.9 [±3.04]	
	Endpoints	Baseline (mean±SD)	Week 52 (mean±SD)	LS mean from baseline (±SE)	Statistics (comparison to ESS)
Mepo (n=206)	NCS	2.67 [±0.24]	1.4	-1.26 [±1.03]	p<0.001
	Loss of smell score	2.88 [±0.24]	2	-0.84 [±1.08]	p=0.039
	SNOT 22 score	63.7 [±17.6]	34.3	-29.4 [±24.67]	NS

Compared to Mepolizumab, ESS offers similar-to-superior symptom benefits at 52 weeks

8/25/23

Psychophysical olfaction at 24 wks



Improvements in psychophysical olfaction are similar between ESS and Dupilumab at week 24

8/25/23

Nasal polyp score analysis

Lund Kennedy Polyp Score (LK-NP)		Nasal Polyp Score (NPS)	
LK 0	No polyps	NPS 0	No polyps
LK 1	Polyps confined/restricted to the middle meatus	NPS 1	Polyps not reaching below inferior border of middle turbinate/confined to middle meatus
LK 2	Polyps extending beyond the middle meatus	NPS 2	Polyps reaching below the lower border of the middle turbinate
		NPS 3	Large polyps reaching the lower border of the inferior turbinate
		NPS 4	Large polyps causing complete obstruction of the inferior nasal cavity

8/25/23

24-week nasal polyp scores

Distribution of NPS at 24 weeks						
	% pts NPS=0	% pts NPS=1	% pts NPS=2	% pts NPS=3	%pt NPS=4	%pts NP>5
ESS (n=79)	48 (61%)	7 (9%)	14 (18%)	10 (13%)		
	87%					
Dupi-24 (n=143)	66 (46%)			27 (19%)	50 (35%)	
Oma-1&2 (n=128)	42 (31%)			30 (25%)	56 (44 %)	

ESS results in significantly lower NPS compared to Dupilumab and Omalizumab at week 24

8/25/23

52-week nasal polyp scores

Distribution of NPS at 52 weeks						
	% pts NPS=0	% pts NPS=1	% pts NPS=2	% pts NPS=3	%pts NPS=4	%pt NP>5
ESS (n=20)	9 (45%)	4 (20%)	6 (30%)	1 (5%)		
	95%					
Dupi-52 (N=295)	136 (46%)			47 (16%)	112 (38%)	
Mespo (n=206)	6 (2.9%)	16 (7.8%)	23 (11.2%)	29 (14.1%)	30 (14.6%)	104 (50 %)
	36%					

ESS results in significantly lower NPS compared to Dupilumab and Mepolizumab at week 52

8/25/23

Dupilumab-related adverse events among patients with chronic rhinosinusitis with nasal polyposis

Daniel J. Lee MD¹ | Hannah B. Cramer BS¹ | Rijul S. Kshirsagar MD² |
 Jennifer E. Douglas MD¹ | Michael A. Kohanski MD, PhD¹ |
 James N. Palmer MD¹ | Nithin D. Adappa MD¹ | John V. Bosso MD¹

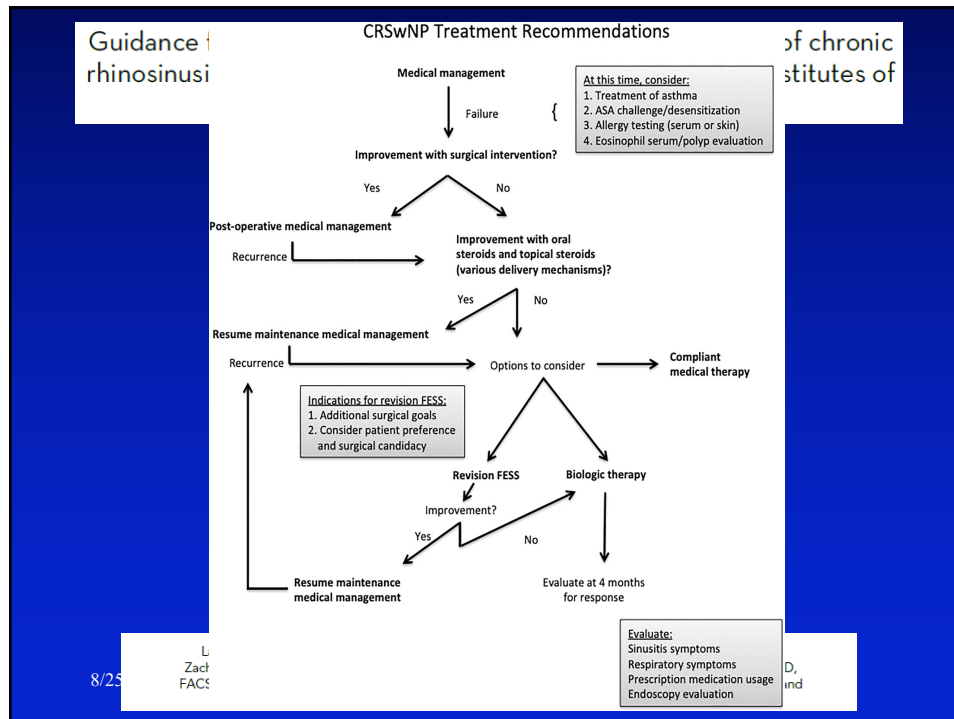
- N=58 consecutive pts
- 24.1% with AEs requiring d/c of dupi
- Rash 42.9%; joint pain 36%

8/25/23

Guidance for contemporary use of biologics in management of chronic rhinosinusitis with nasal polyps: discussion from a National Institutes of Health-sponsored workshop

8/25

Lauren T. Roland, MD, MSCI¹ | Timothy L. Smith, MD, MPH, FACS² | Rodney J. Schlosser, MD³,
 Zachary M. Soler, MD, MSc³, Anju T. Peters, MD, MSCI⁴, Tanya M. Laidlaw, MD⁵, Benjamin S. Bleier, MD,
 FACS⁶ | Vijay Ramakrishnan, MD⁷ | Elina Toskala, MD, PhD, MBA⁸, David W. Kennedy, MD, FACS⁹ and
 Amber U. Luong, MD, PhD, FACS¹⁰



Summary: Biologics and ESS

- Steroid rinses/Xhance may provide benefit prior to ESS
- ESS with postop topical steroid has good success rate
- Biologics generally reserved for ESS failures
- Hopefully have predictors in future
 - Mucus biomarkers, eosinophil count
 - Phenotype: AERD, AFRS

Shifting gears to COVID

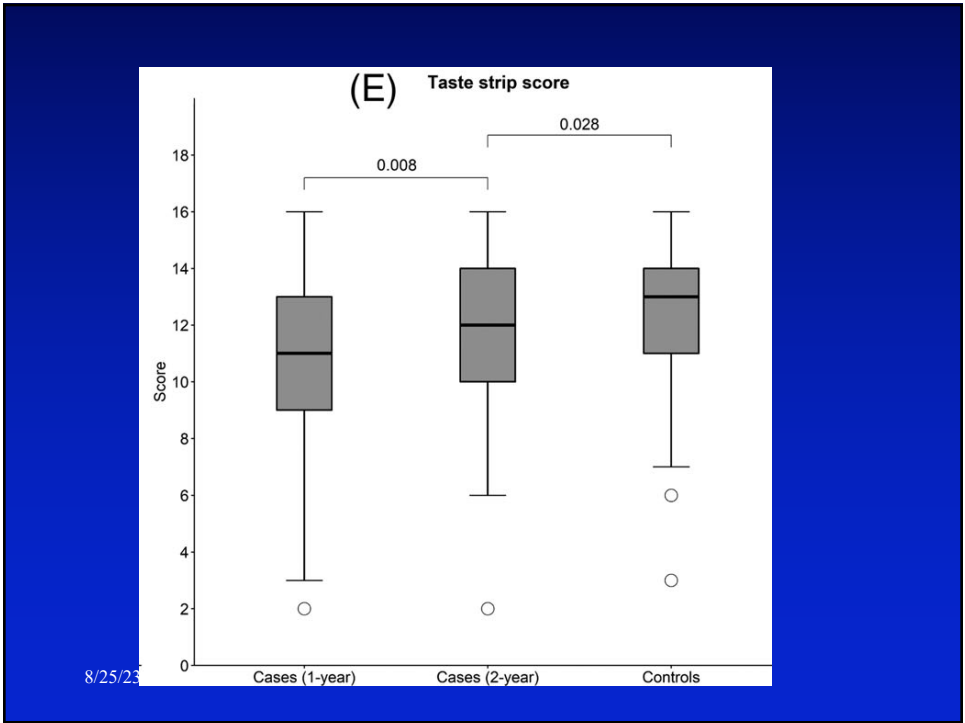
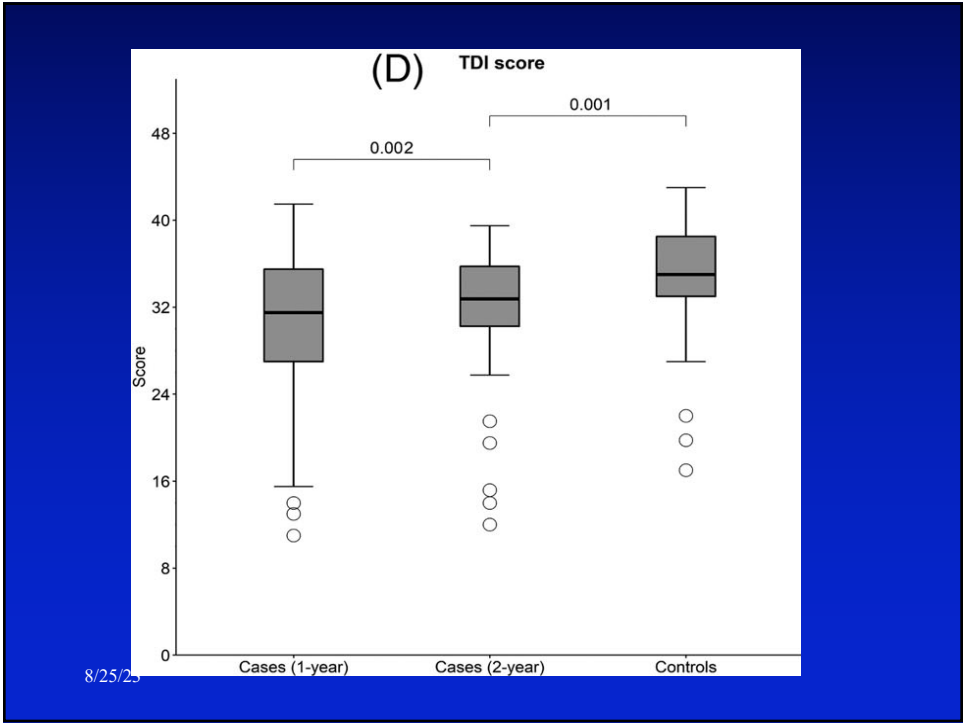
8/25/23

Psychophysical assessment of olfactory and gustatory function in post-mild COVID-19 patients: A matched case-control study with 2-year follow-up

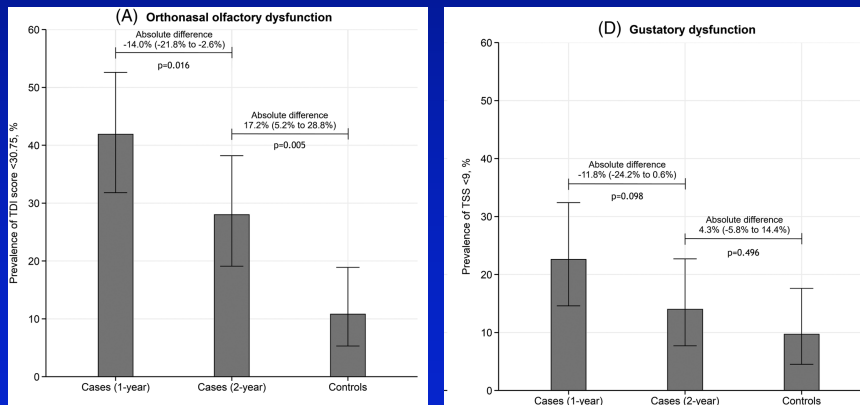
Paolo Boscolo-Rizzo MD¹ | Thomas Hummel MD² | Sara Invitto PhD³ |
 Giacomo Spinato MD^{4,5} | Michele Tomasoni MD⁶ | Enzo Emanuelli MD⁵ |
 Margherita Tofanelli MD, PhD¹ | Angelo Cavicchia MD¹ | Vittorio Grill MSc⁷ |
 Luigi Angelo Vaira MD⁸ | Jerome R Lechien MD, PhD⁹ | Daniele Borsetto MD¹⁰ |
 Jerry Polesel MD¹¹ | Michele Dibattista PhD¹² | Anna Menini PhD¹³ |
 Claire Hopkins MA(Oxon), DM¹⁴ | Giancarlo Tirelli MD¹

- N=93 COVID+ and 93 matched controls
- Median age 49 yrs, 59% female
- 1 and 2 year f/u post-COVID

8/25/23

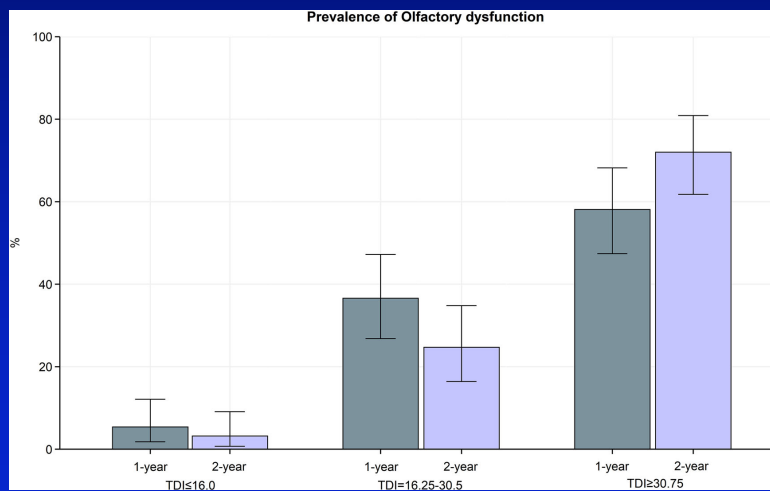


What % of pts are impaired?



8/25/23

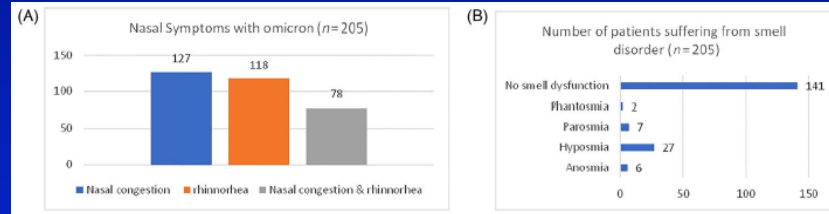
Most impairment is hyposmia



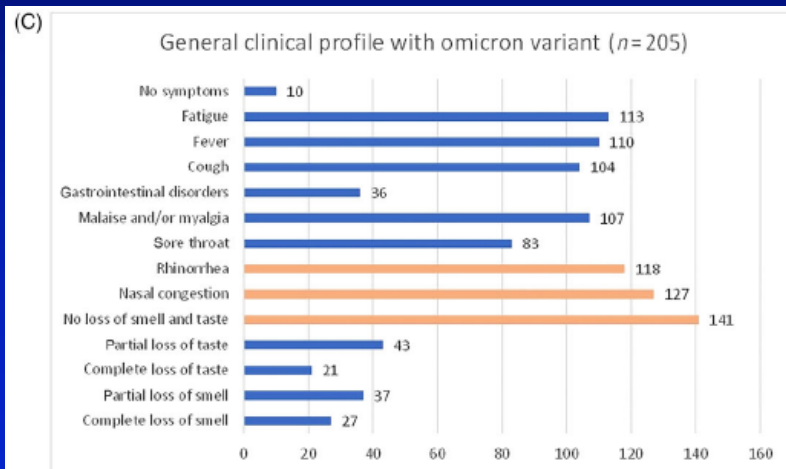
8/25/23

The Omicron variant of SARS-CoV-2 and its effect on the olfactory system

Puya Dehgani-Mobaraki MD¹ | Zara Patel MD² | Asiya Kamber Zaidi MBBS, MS ENT¹ | David Giannandrea MD¹ | Claire Hopkins DM³



8/25/23



8/25/23

Gabapentin improves parosmia after COVID-19 infection

Jaime A. Pena Garcia MD¹ | Emily Miller MD¹ | Timothy G. Norwood MD¹ |
 Natalie A. Dorin MD¹ | Jessica Grayson MD¹ | Bradford Woodworth MD^{1,2} |
 Do-Yeon Cho MD^{1,2,3} 

- N=12 pts, OD 7-15 mos duration
- 9 pts with phone f/u
- 100 mg qd x 7d; increase 100-300 mg weekly as tolerated
- 6/9 with significant subjective improvement
- SIT40 in 3 pts, no change

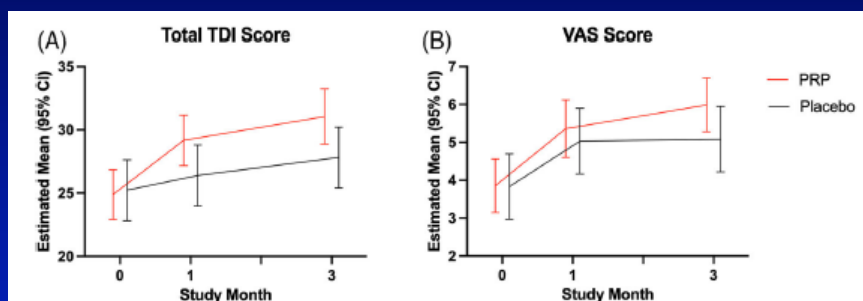
8/25/23

Use of platelet-rich plasma for COVID-19-related olfactory loss: a randomized controlled trial

Carol H. Yan MD¹  | Sophie S. Jang MD¹ | Hung-Fu C. Lin NP-C² | Yifei Ma MA, MS² | Ashoke R. Khanwalkar MD²  | Anthony Thai MD²  | Zara M. Patel MD² 

- N=35 pts (26 completed study), COVID-OD
- OD duration 6-12 mos w SIT40 $\leq$ 33
- 3 injections into olfactory cleft at weeks 0,2,4 of PRP or saline
- Follow up at 1 and 3 mos

8/25/23



- Responder rate
 - 1 mo: 25% vs 41%
 - 3 mos: 8.3% vs 57%
- Topical PRP study pending

8/25/23

COVID dysosmia summary

- Incidence decreasing, but still a problem
- Rxs: Smell training (fifthsense.org.uk), topical steroid
- 2nd level rx: PRP, gabapentin
- Future rx: Theophylline spray?

8/25/23