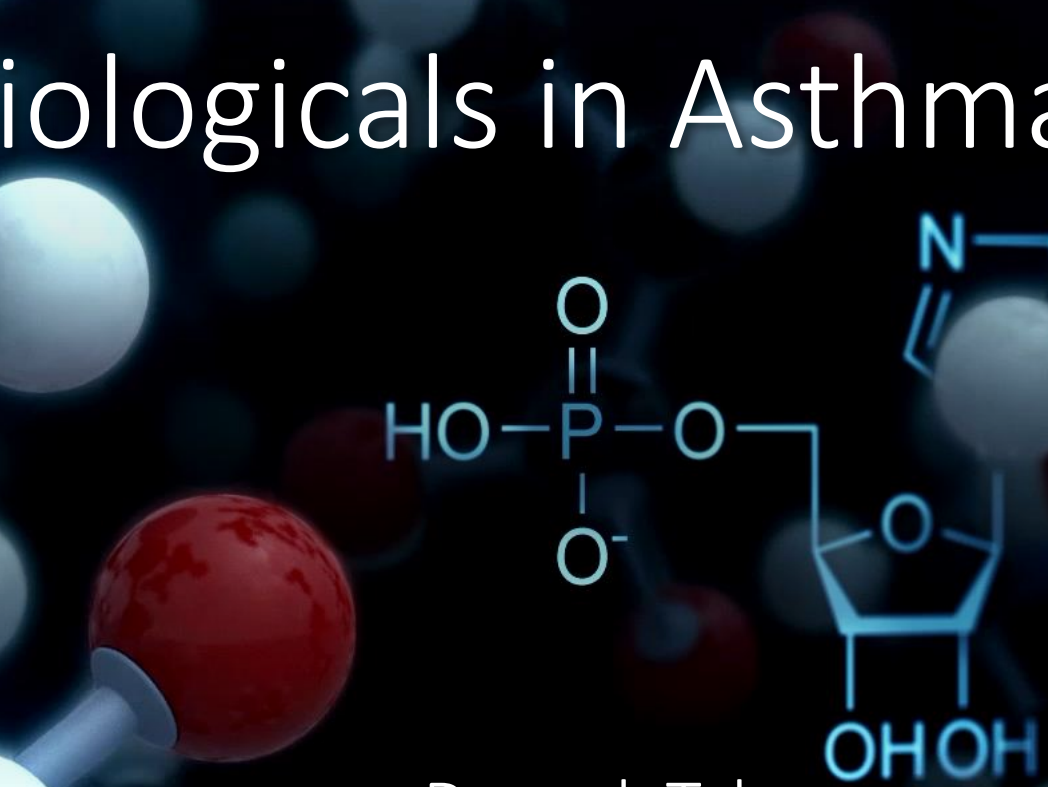
PULMONIS - 2025

# Biologicals in Asthma :

*Why, When Which & How ?*




Deepak Talwar
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Metro Hospitals & Institute
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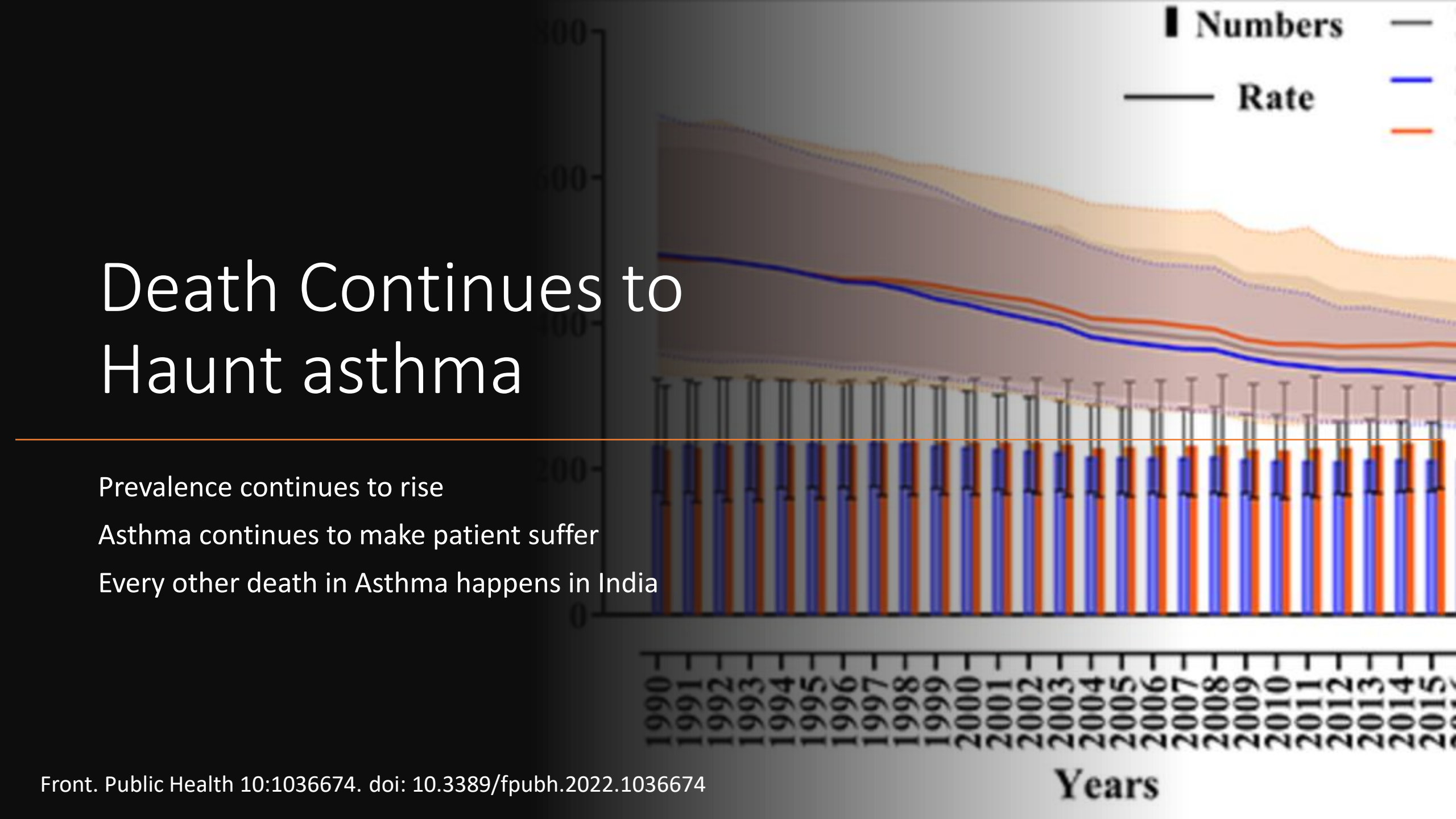
# Death Continues to Haunt asthma

Prevalence continues to rise

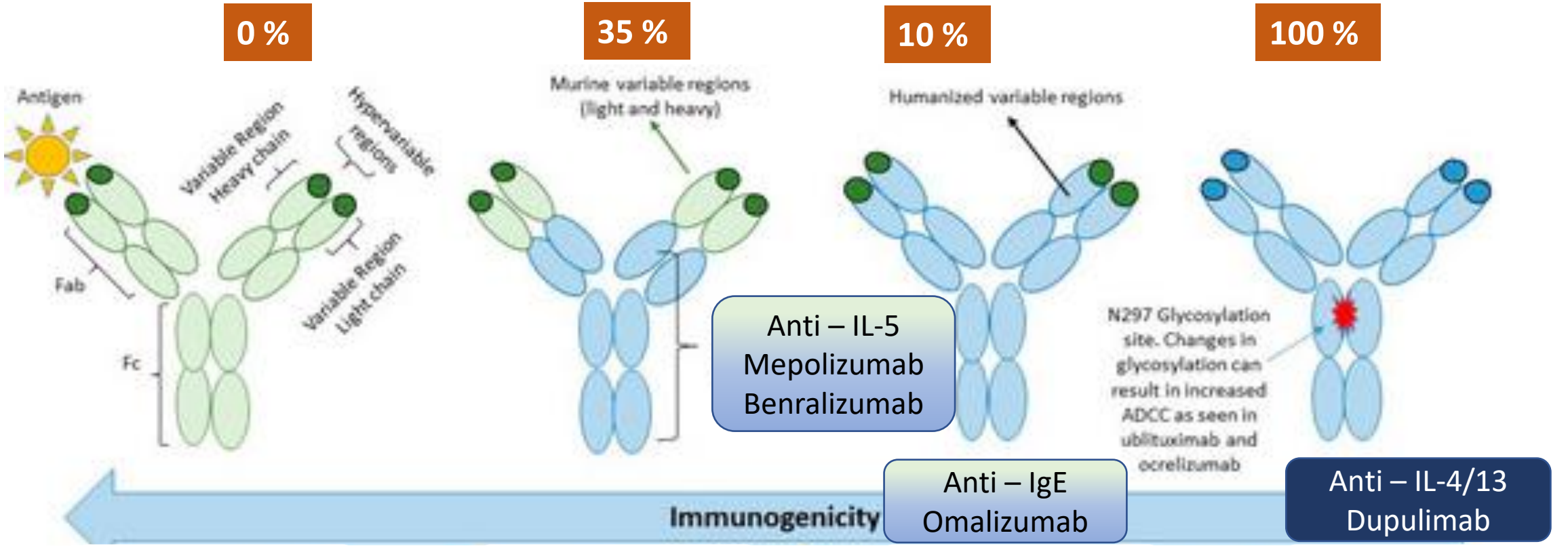
Asthma continues to make patient suffer

Every other death in Asthma happens in India



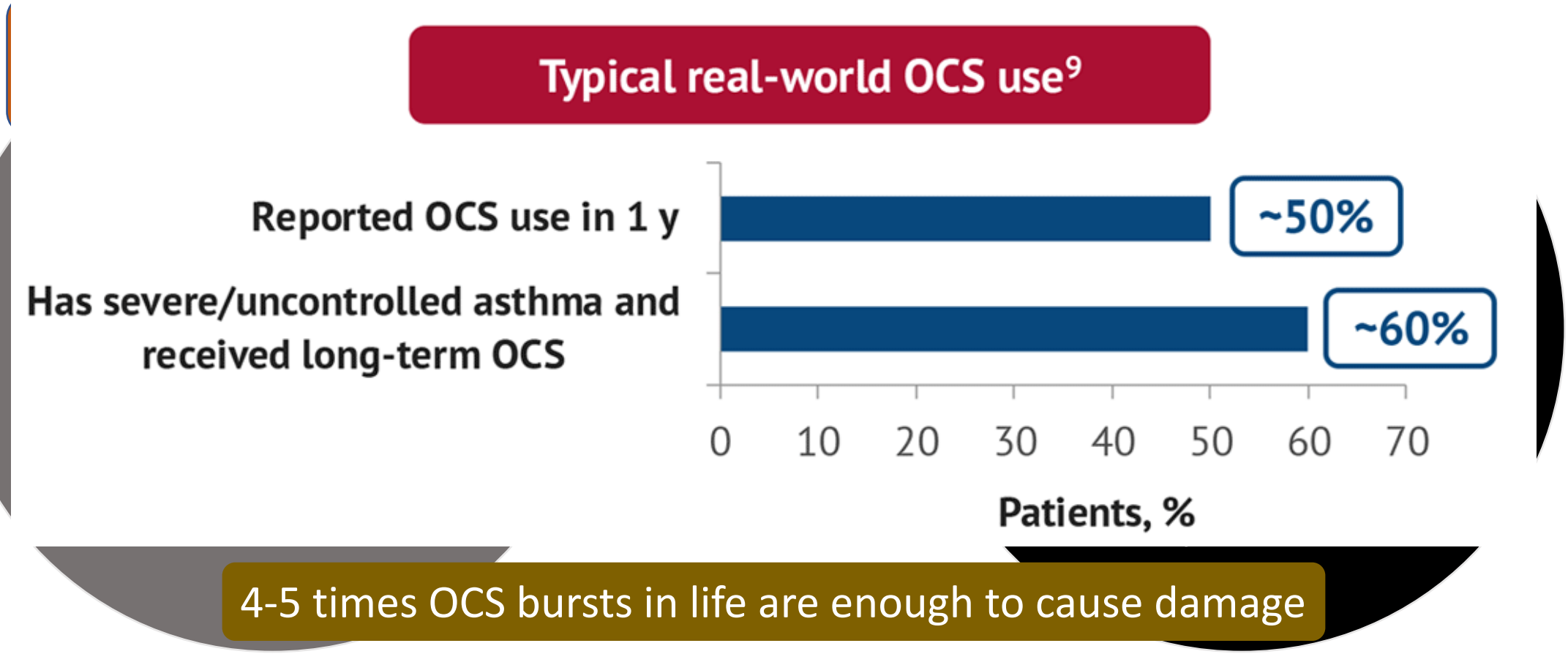

Front. Public Health 10:1036674. doi: 10.3389/fpubh.2022.1036674

# Biologicals : *Targeted Therapies*



# Why ??? NO to OCS !

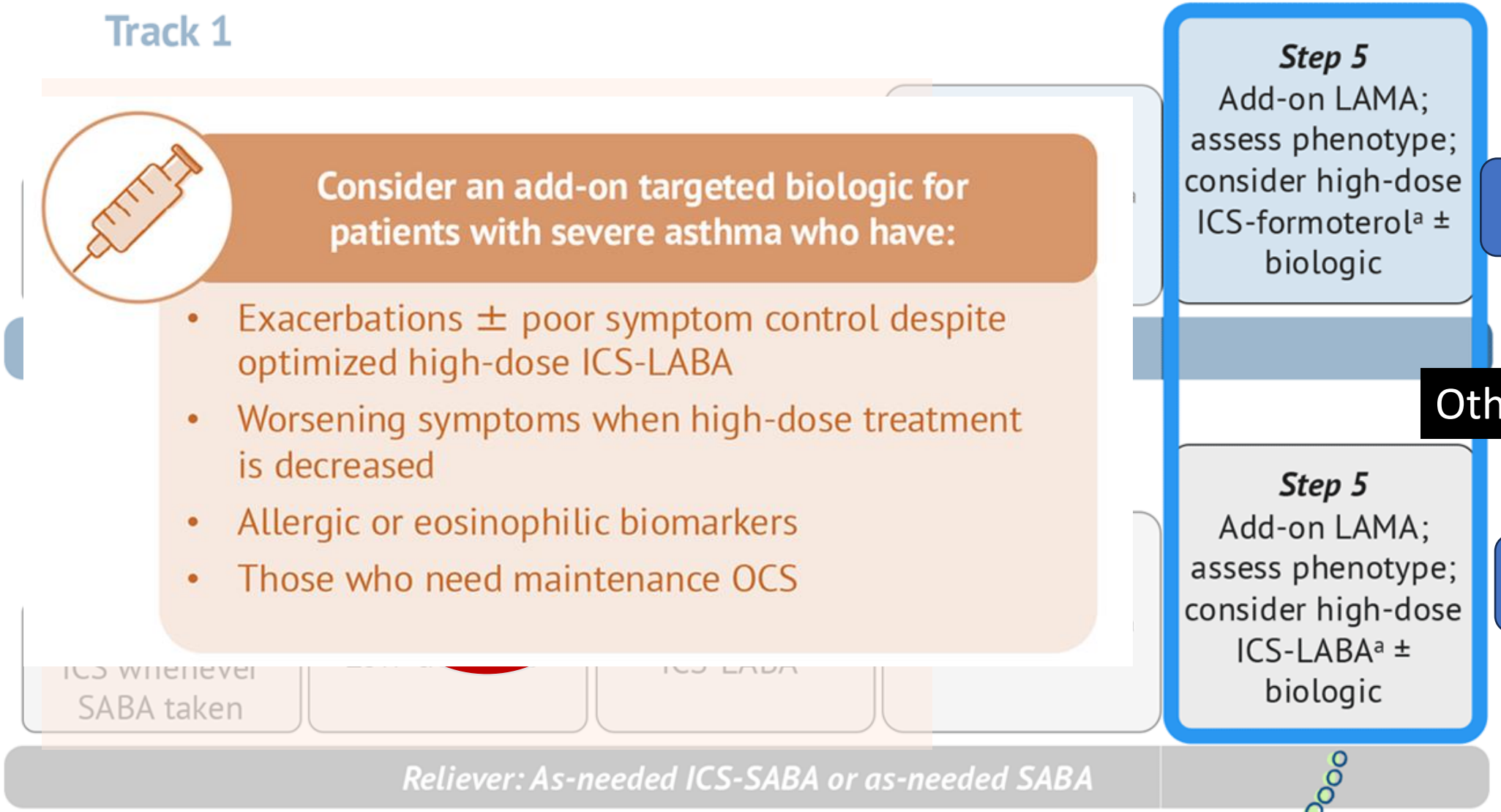
Prevent complications of Low Dose maintenance or Bursts of OCS




4-5 times OCS bursts in life are enough to cause damage

Sullivan PW, et al. J Allergy Clin Immunol 2018;141:110–116

# When ??? Severe Asthma




GINA 2024

# Remember : All Uncontrolled Asthma is *NOT* Severe Asthma

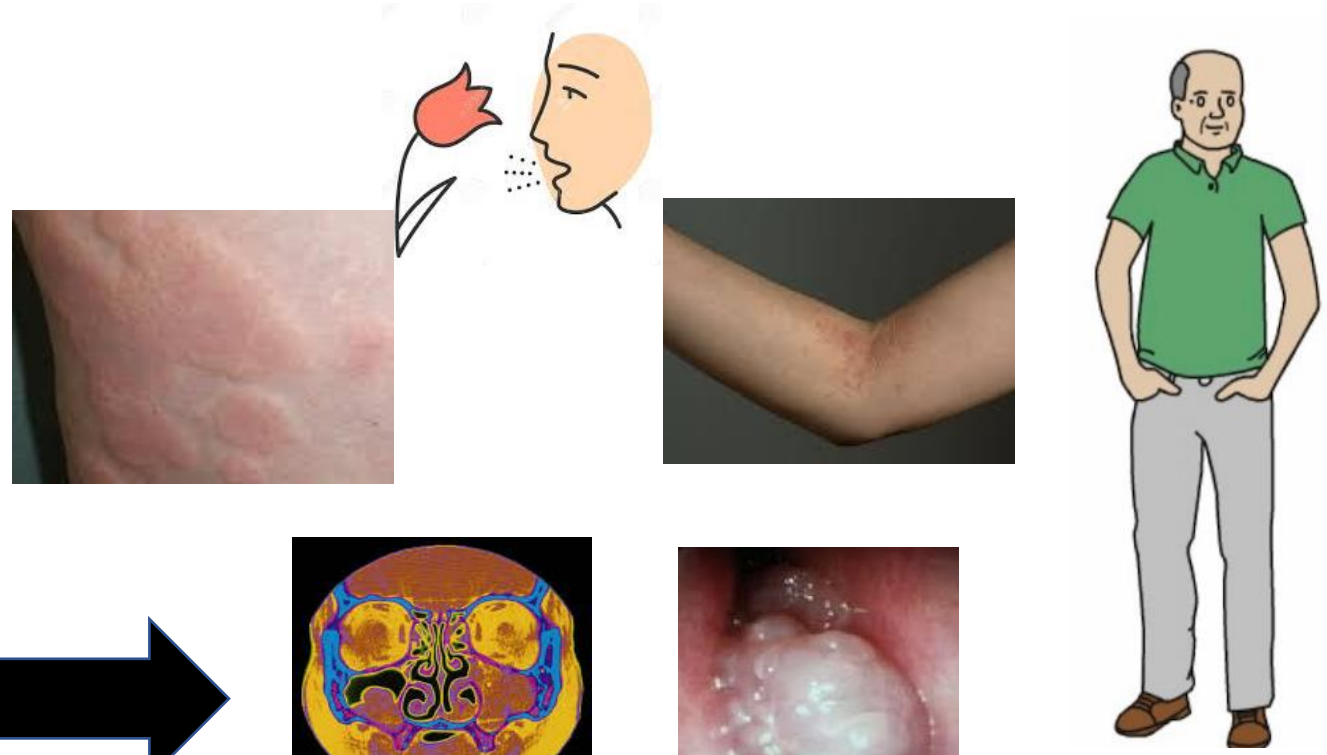

*World Allergy Organization Journal 2013, 6(Suppl 1):P3*

# Which ??? Type 2 Inflammation

## Type 2 Severe Asthma : Atopic / Eosinophilic Phenotype

### Type 2 Inflammation

- Age of onset of asthma: Childhood / Early adulthood
- Allergic comorbidities : Atopic dermatitis, AR, CSwNP, ABPA, EGA
- Oral steroids responsive

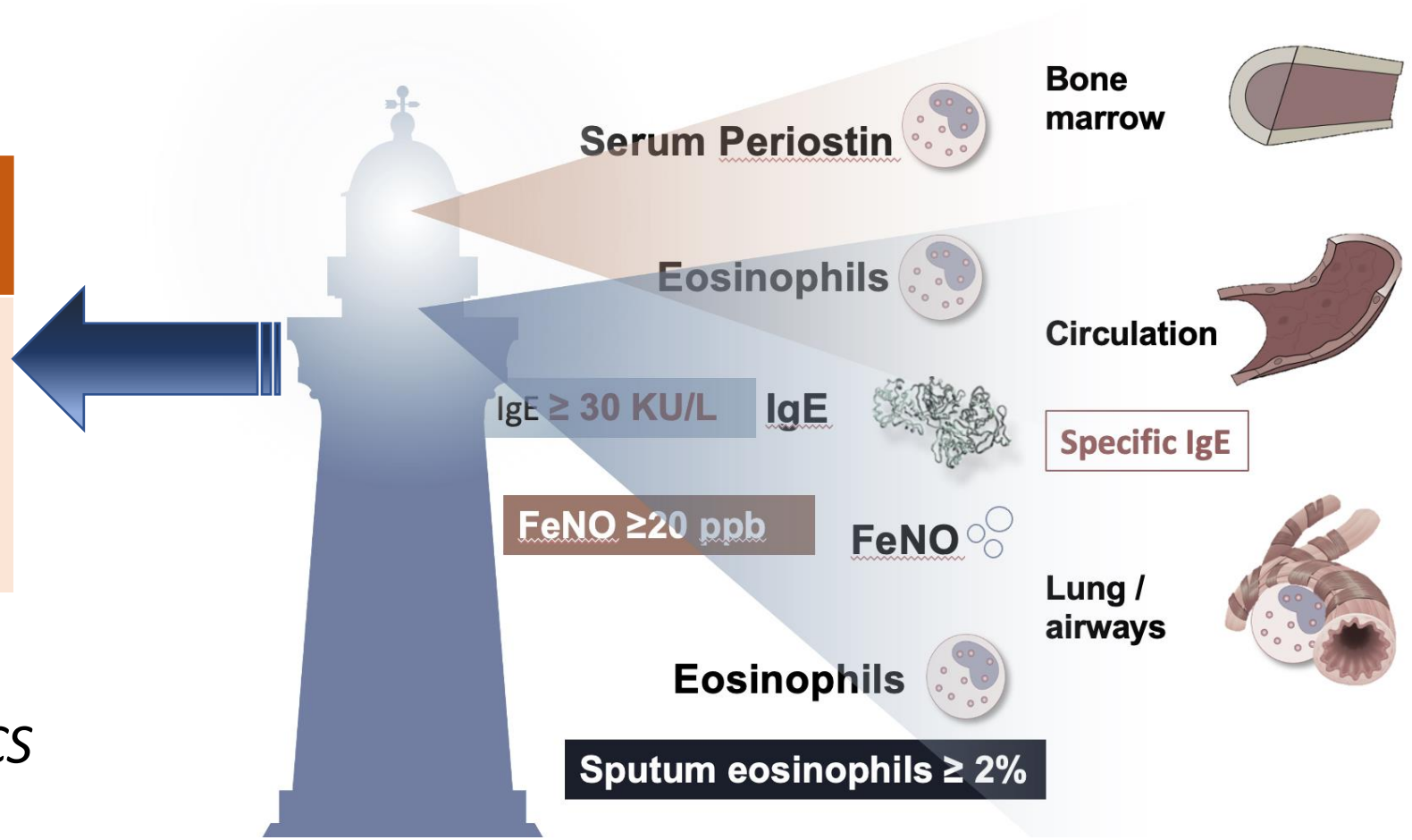


GINA 2023

# Remember: Identify T 2 Asthma- Biomarkers!

## Type 2 Inflammation*

- **Blood Eosinophils : ≥ 300** * cells/uL
- **FeNO*: ≥20** ppb
- **Sputum Eosinophils :** ≥ 2%




** Depends on dose of OCS & ICS*

Scheerens et al. Clin Exp Allergy 2014; 44:38–46; Sidhu et al. Proc Natl Acad Sci USA 2010; 107:14170–14175; Suresh et al. Am J Respir Cell Mol Biol 2007; 37:97-104

# Type 2 Severe Asthma ~ 85 % & Biologicals Eligible ~ 91%


Original Article

## A retrospective observational study on pheno-endotypes of severe asthma among adults attending asthma clinic in a tertiary care centre in India

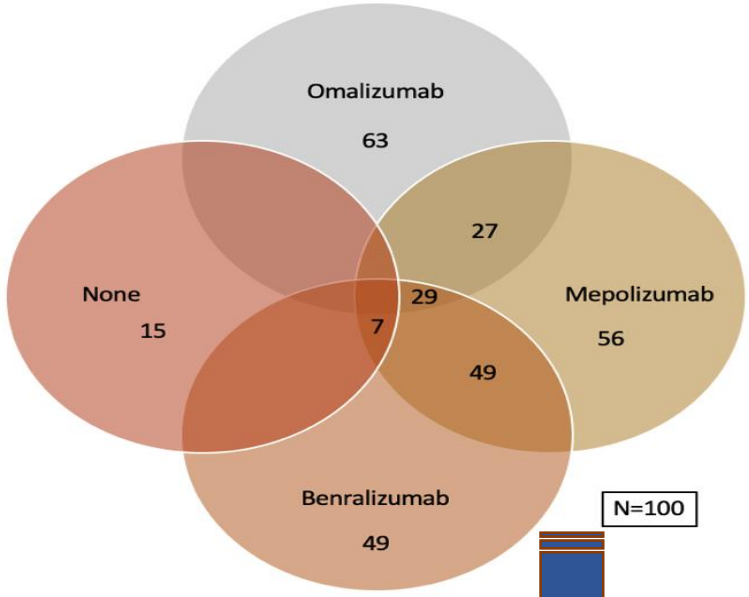
*Deepak Talwar[1], Dhruv Talwar[2], Nitin Jain[3], Deepak Prajapat[4], Sourabh Pahuja[4]*

*[1]Director and Chair, Metro Centre for Respiratory Diseases, Noida, Uttar Pradesh, India, [2]PGY III, JNMC Sawangi, Wardha, Maharashtra, India, [3]Senior Resident, Rajiv Gandhi Superspeciality Hospital, Tahirpur, New Delhi, India, [4]Consultant, Metro Centre for Respiratory Diseases, Noida, Uttar Pradesh, India*

Single center, retrospective , observational study:

- 100 Adult severe asthmatics from SA Clinic
- Measurements :
  - Total/ Specific IgE
  - AEC
  - Skin prick tests
  - History of allergy,

$T_2$ Low asthma is only 15% at AEC cut off of 300 & 9% at @ AEC -150




~ 50% of our Severe Asthmatics were eligible for both group of biologicals

Lung India 2022;39:393-400.

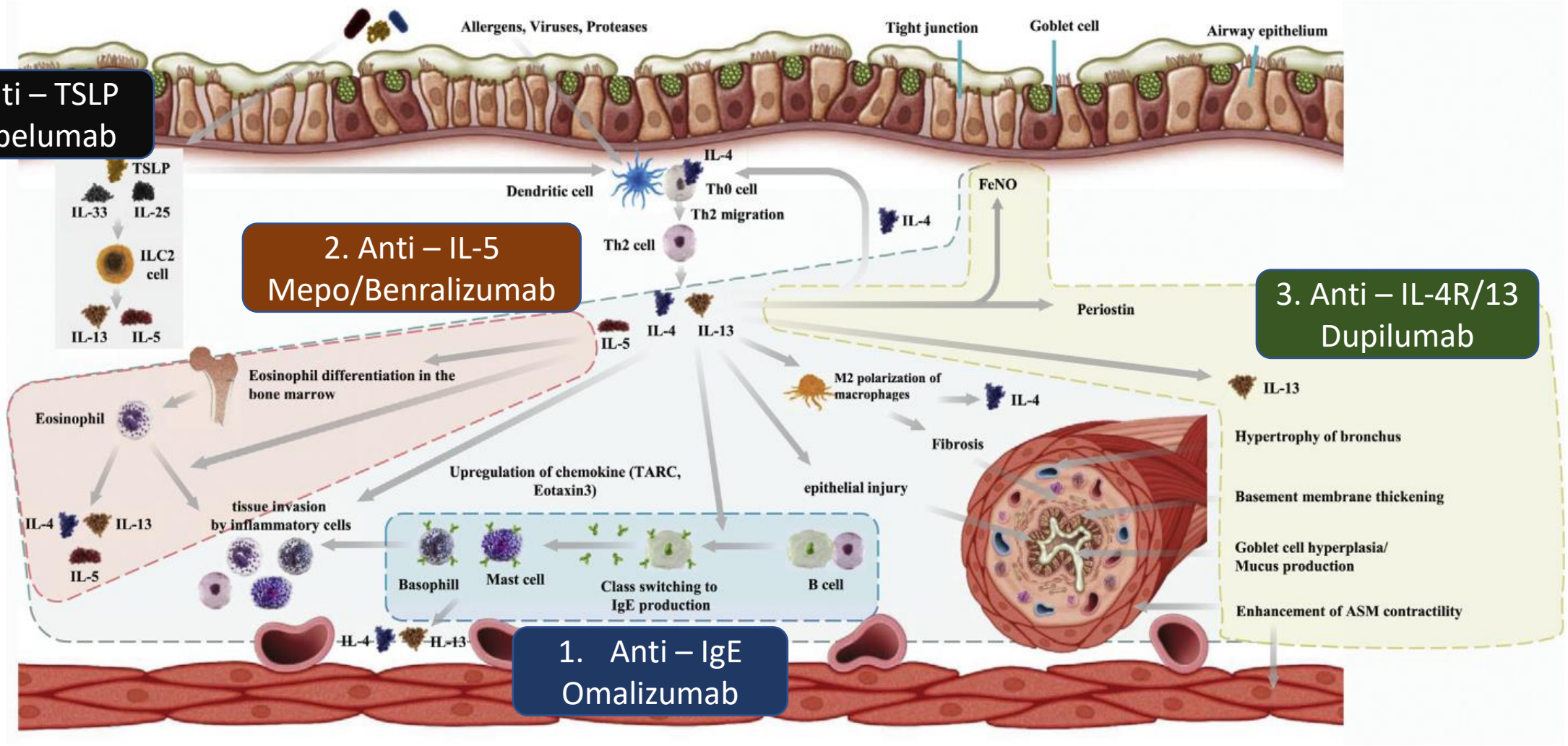
# How ?? : Choose Appropriate Biologicals - *Drivers*

4. Anti – TSLP
Tezepelumab

2. Anti – IL-5
Mepo/Benralizumab

3. Anti – IL-4R/13
Dupilumab

1. Anti – IgE
Omalizumab




K. Matsunaga et al. / Allergology International 69 (2020) 187e196

# Remember : Match Expectations with Research

| SA Outcomes | Omalizumab | Mepolizumab | Benralizumab |
|---|---|---|---|
| Reduction in Exacerbations | 25% reduction | ~ 50 % | 40 -70 % |
| Reduction in maintenance dose of OCS | 50% dose reduction in those at 15 mg/day baseline | 50% dose reduction 2- 6 months | 50 - 80% |
| $FEV_1$ | 2.1% | 100 ml | **100 -160 ml @ 4 weeks** |
| QoL | SGRQ<br>Asthma diaries | ACQ5 + 0.4<br>SGRQ +7 points | ACQ < 0.5<br>SGRQ +8.1 points |
| Real World Data | Reduction in AE in 42% vs 63 % & 28% vs 48% @ baseline | **Reduction in AE ~ 50%**<br>Reduction in mOCS ~ 50% | **All improved with 70% exacerbation free** @2years |
| Comorbidities | CRwNP, Food Allergy<br>Chronic Idiopathic Urticaria | EGPA ( 300 mg/ month )<br>CRSwNP | EGPA<br>Mucus Impaction |

# Biologicals in Severe Asthma– Indian Experience

ISSN: 2754-4761

Journal of Pulmonology Research & Reports

SCIENTIFIC Research and Community

Research Article Open Access

## Efficacy & Safety of Omalizumab in Indian Adult Patients with Severe Allergic Asthma: A Retrospective Observational Study

**Arjun Khanna[1]*, Deepak Talwar[2], Linija K Nair[3]**

**Conclusions:**

Omalizumab led to improved asthma control, lung function, and QoL and allowed a reduction in the dosage of medications for asthma. The improvement was observed irrespective of age and biomarker levels.

*J Pulmonol Res Rep, 5(2): 4-6 2023* **Published:** April 28, 2023

F1000Research F1000Research 2023, 12:1225 Last updated: 27 SEP 2023

Check for updates

CLINICAL PRACTICE ARTICLE

## An early Indian experience with benralizumab - A compendium on severe asthma cases: a case series [version 1; peer review: awaiting peer review]

**Deepak Talwar * [1], Manoj Yadav[2], Nagarjuna Maturu[3]**

**Conclusions:**

In all cases, management with Benralizumab resulted in optimal clinical and functional improvement, a decline in systemic steroid use, and improved QoL.

*F1000 Research 2023, 12:1225 Last* ***updated: 27 SEP 2023***

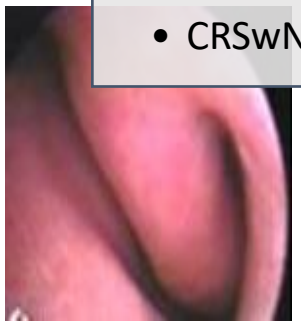
# How ?? Choosing Biologicals in SA - 2025 !

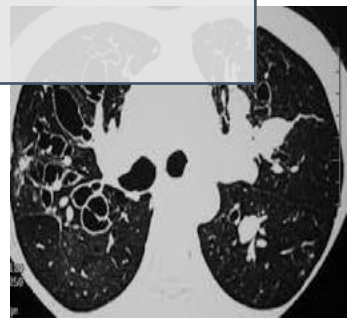
## *Omalizumab*

Childhood Onset asthma

Comorbidities :

- Allergic rhinitis
- Chronic idiopathic urticaria
- Food Allergy
- CRSwNP



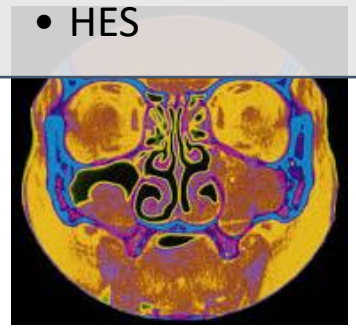
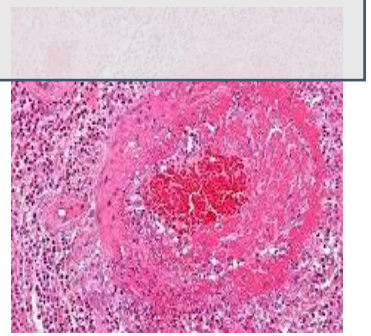


## *Mepolizumab*

Late Onset asthma

Comorbidities :

- Chronic Sinusitis with NP
- EGPA
- HES

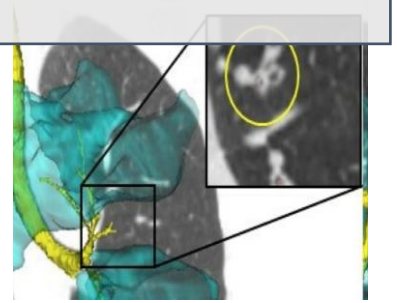



## *Benralizumab*

Adult / Late Onset asthma

Comorbidities :

- Nasal Polyposis
- Airway Mucus
- EGPA / CEP

NO safety signal has come up with antibodies directed against IL-5 after up to 5 years administration for mepolizumab and > 4 years for Benralizumab

# Assessing Effectiveness of Biologicals : *FU@ 6 months*


Initial Trial for 4 months Minimum

Good /Response

Continue

**No standard criteria for good response, but consi**

- Symptom burden
- Exacerbations
- Treatment side effects
- Lung function
- Treatment intensity
- Patient satisfaction/concerns

**Poor response**

- Stop biologic
- Switch to a different biologic or T2-targeted therapy

**Unclear response**

- Extend trial to 6-12 mo

# Biologicals In Asthma : Conclusions

| | |
|---|---|
| Why | Zero OCS Use |
| When : | Uncontrolled Asthmatics on GINA Step 5 |
| Which : | Type 2 Severe Asthma ( Biomarkers ) |
| How : | Match comorbidities & Expectations |
| When to stop : | NOK |

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**Dr Deepak Prajapat**

Senior Consultant

**Dr Rahul Khera**

Consultant

# Thank You

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BLOCK YOUR DATE
15TH 16TH 17TH AUGUST 2025