



# Paving the way for optimal disease control in moderate-to-severe type 2 asthma

An expert panel discussion recorded in March 2021



## Expert panel



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# Agenda

**Unravelling the pathogenesis of type 2 asthma**

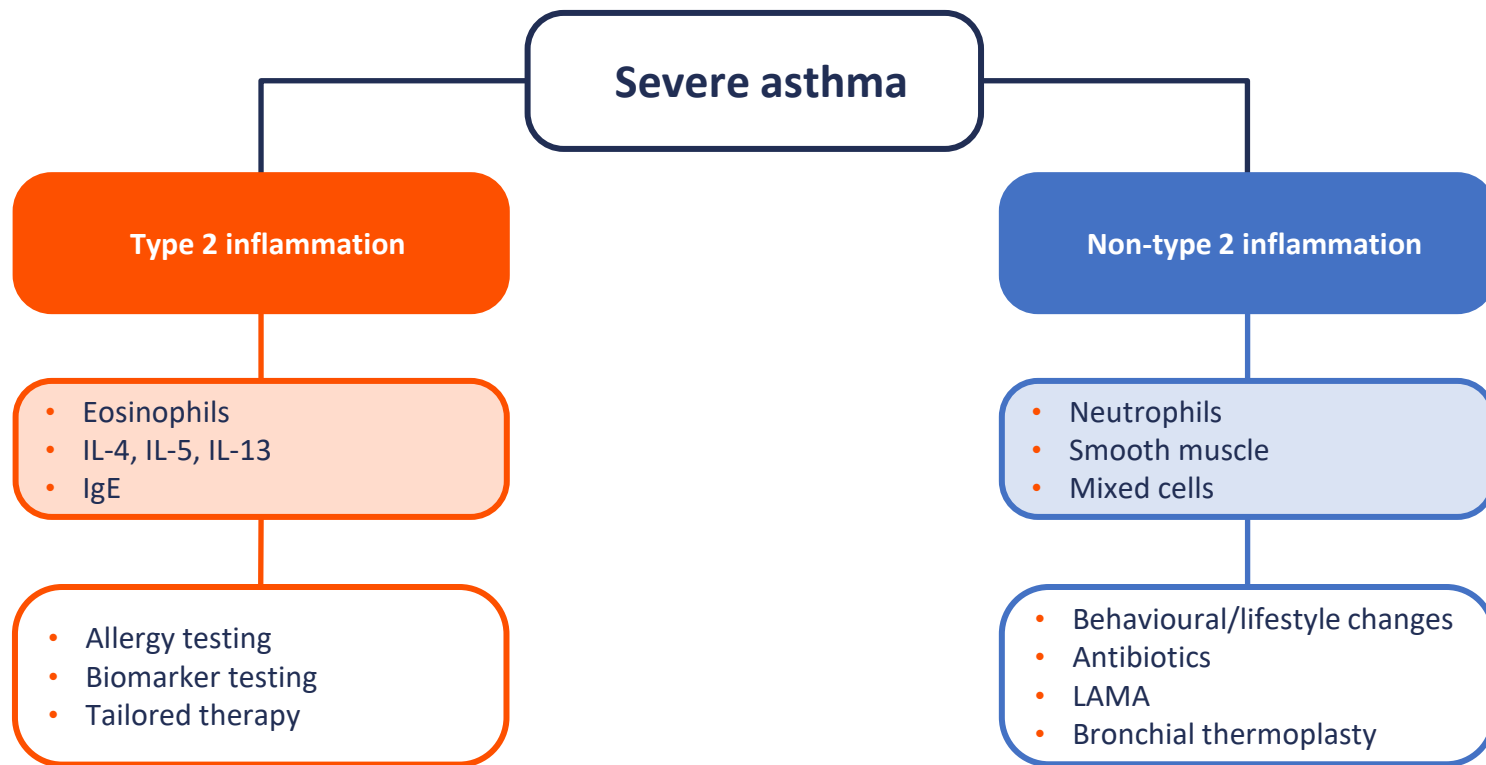
**Identifying patients with type 2 asthma: Clinical and molecular considerations**

**Biologics in moderate-to-severe type 2 asthma: Current and future perspectives**



# Unravelling the pathogenesis of type 2 asthma

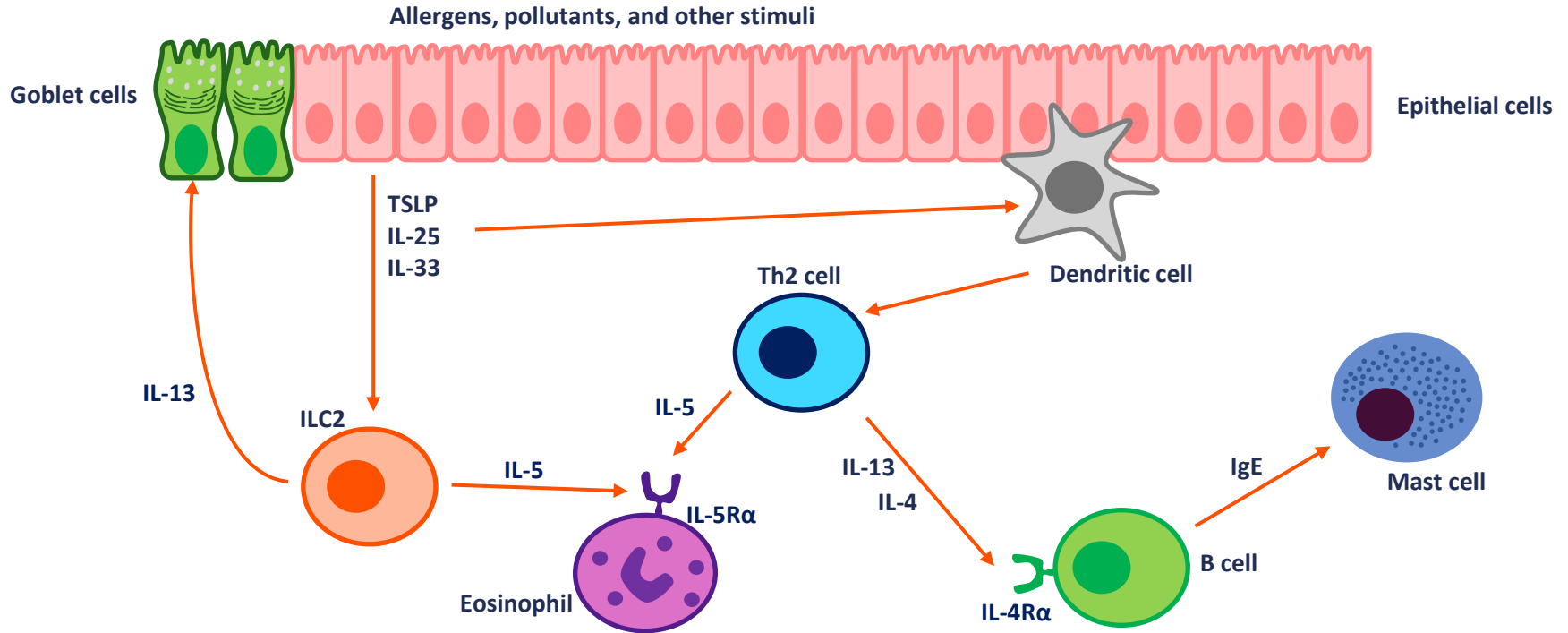
# Severe asthma<sup>1-3</sup>



IgE, immunoglobulin E; IL, interleukin, LAMA, long-acting muscarinic antagonist.

1. Godar M, et al. *MAbs* 2018;10:34–45; 2. Stoodley I, et al. *Breathe*. 2019;15:e50–61; 3. Fajt ML, Wenzel SE. *Allergy Asthma Immunol Res.* 2017;9:3–14.

# What is type 2 inflammation?



IgE, immunoglobulin E; IL, interleukin; IL-4Rα, IL-4 receptor alpha; IL-5Rα, IL-5 receptor alpha; ILC2, group 2 innate lymphoid cell; Th2, T helper 2; TSLP, thymic stromal lymphopoietin.  
Pelaia C, et al. *Front Immunol.* 2020;11:603312.

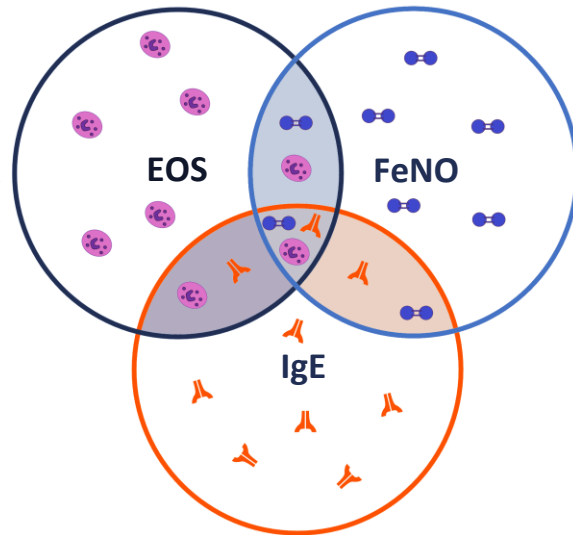


# Identifying patients with type 2 asthma: Clinical and molecular considerations

# Guidelines for type 2 asthma diagnosis and treatment

Type 2 inflammation detected through individual or combination of biomarkers<sup>2,3</sup>

Patient unresponsive to GINA-recommended controller treatments<sup>1</sup>



## Anti-IL-5/anti-IL-5 receptor<sup>1</sup>

- Exacerbations in previous year
- Blood eosinophils  $\geq 300$  cells/ $\mu$ L

## Anti-IgE<sup>1</sup>

- Skin prick sensitization/specific IgE
- Total serum IgE and weight within dosage range
- Exacerbations in previous year

## Anti-IL-4 receptor<sup>1</sup>

- Exacerbations in previous year
- Blood eosinophils  $\geq 150$  cells/ $\mu$ L or FeNO  $\geq 25$  ppb

EOS, eosinophils; FeNO, fractional exhaled nitric acid; GINA, Global Initiative for Asthma; IgE, immunoglobulin; IL, interleukin; ppb, parts per billion.

1. Global Initiative for Asthma: Global strategy for asthma management and prevention. 2020. Available at: [www.ginasthma.org/gina-reports/](http://www.ginasthma.org/gina-reports/) (accessed 17 March 2021);

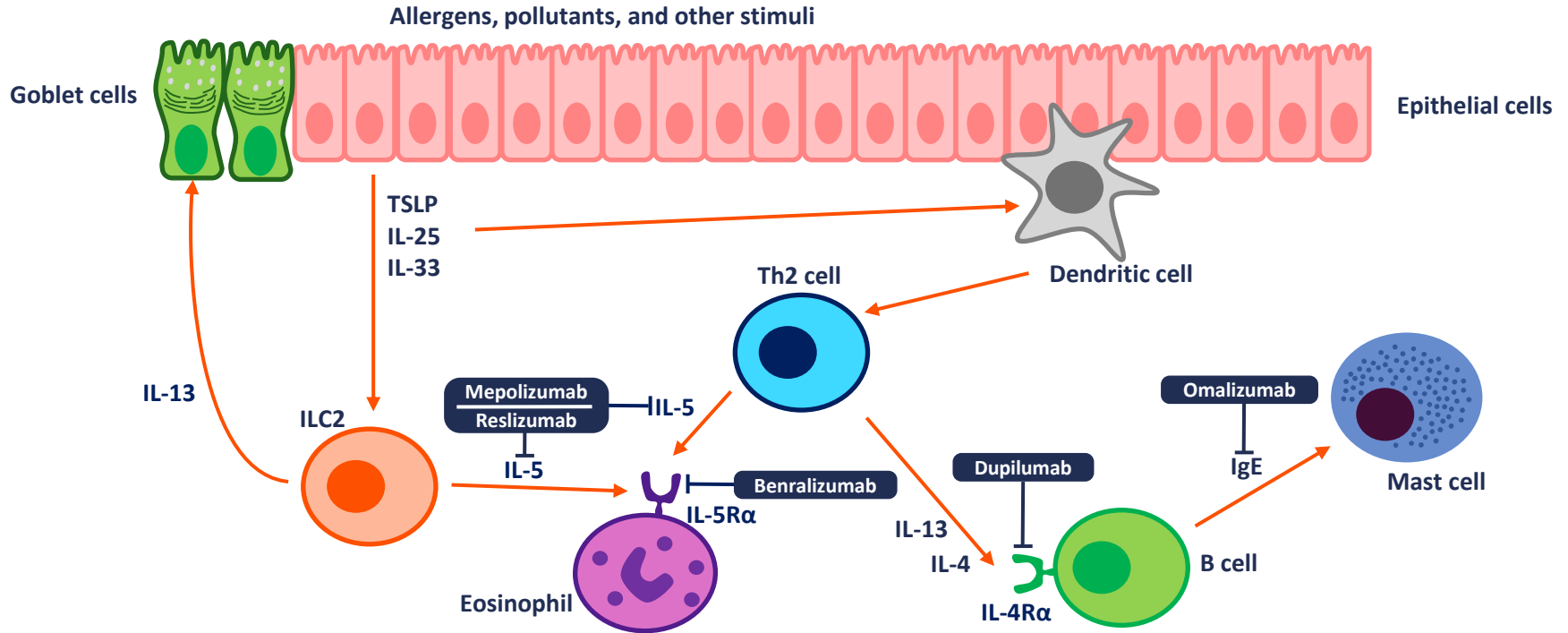
2. Ray A, et al. *Am J Physiol Lung Cell Mol Physiol*. 2015;308:L130–40; 3. Brusselle GG, et al. *Nat Med*. 2013;19:977–9.





# **Biologics in moderate-to-severe type 2 asthma: Current and future perspectives**

# Approved biologics for type 2 asthma



IgE, immunoglobulin E; IL, interleukin; IL-4R $\alpha$ , IL-4 receptor alpha; IL-5R $\alpha$ , IL-5 receptor alpha; ILC2, group 2 innate lymphoid cell; Th2, T helper 2; TSLP, thymic stromal lymphopoietin.  
Pelaia C, et al. *Front Immunol.* 2020;11:603312.

# Future perspectives for approved biologics

## Ongoing phase III trials in moderate-to-severe asthma

### Benralizumab

PONENTE NCT03557307

MIRACLE NCT03186209

TATE NCT04305405

NCT03470311

Adults  
(≥18 years)

Adolescents and adults  
(12–75 years)

Children  
(6–11 years)

Adults  
(≥18 years)

To reduce OCS in patients  
receiving ICS and LABA

Uncontrolled asthma  
despite ICS, LABA, and OCS

PK, PD, and  
long-term safety

Prednisone-dependent  
eosinophilic asthma

### Mepolizumab

NCT03562195

Adolescents and adults  
(≥12 years)

Efficacy and safety in a  
Chinese cohort



### Dupilumab

Continuation of TRAVERSE  
NCT03620747

Liberty Asthma Excursion  
NCT03560466

NCT03884842

NCT03782532

Adolescents and adults  
(≥12 years)

Children  
(7–12 years)

Adults  
(≥18 years)

Adolescents and adults  
(≥12 years)

Long-term  
safety

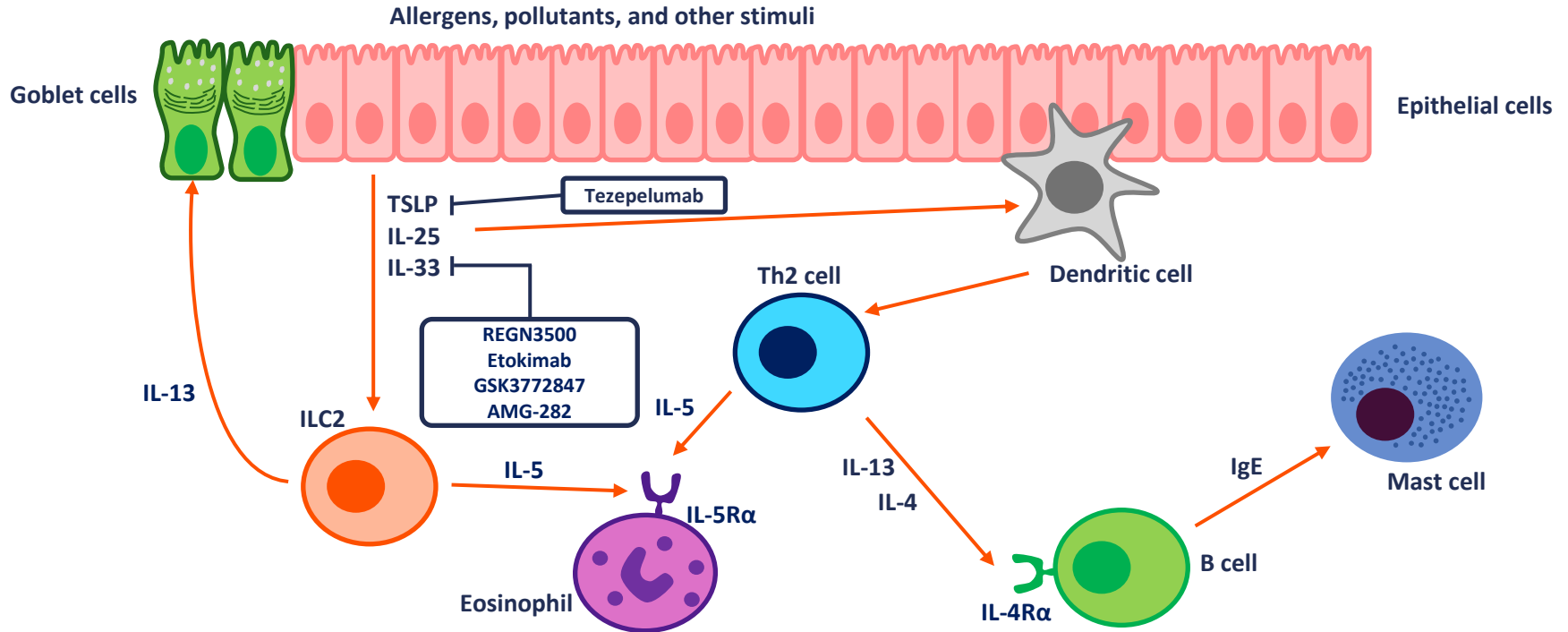
Long-term safety  
and tolerability

To suppress airway  
hyperresponsiveness

Efficacy in  
persistent asthma



# Emerging biologics for type 2 asthma



IgE, immunoglobulin E; IL, interleukin; IL-4Rα, IL-4 receptor alpha; IL-5Rα, IL-5 receptor alpha; ILC2, group 2 innate lymphoid cell; Th2, T helper 2; TSLP, thymic stromal lymphopoietin.

McGregor MC, et al. *AJRCCM*. 2019;199:433-45.