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

An expert panel discussion recorded in March 2021

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- **Walter Murray Yarbrough, MD, FACP** has no conflicts of interest to disclose

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Agenda

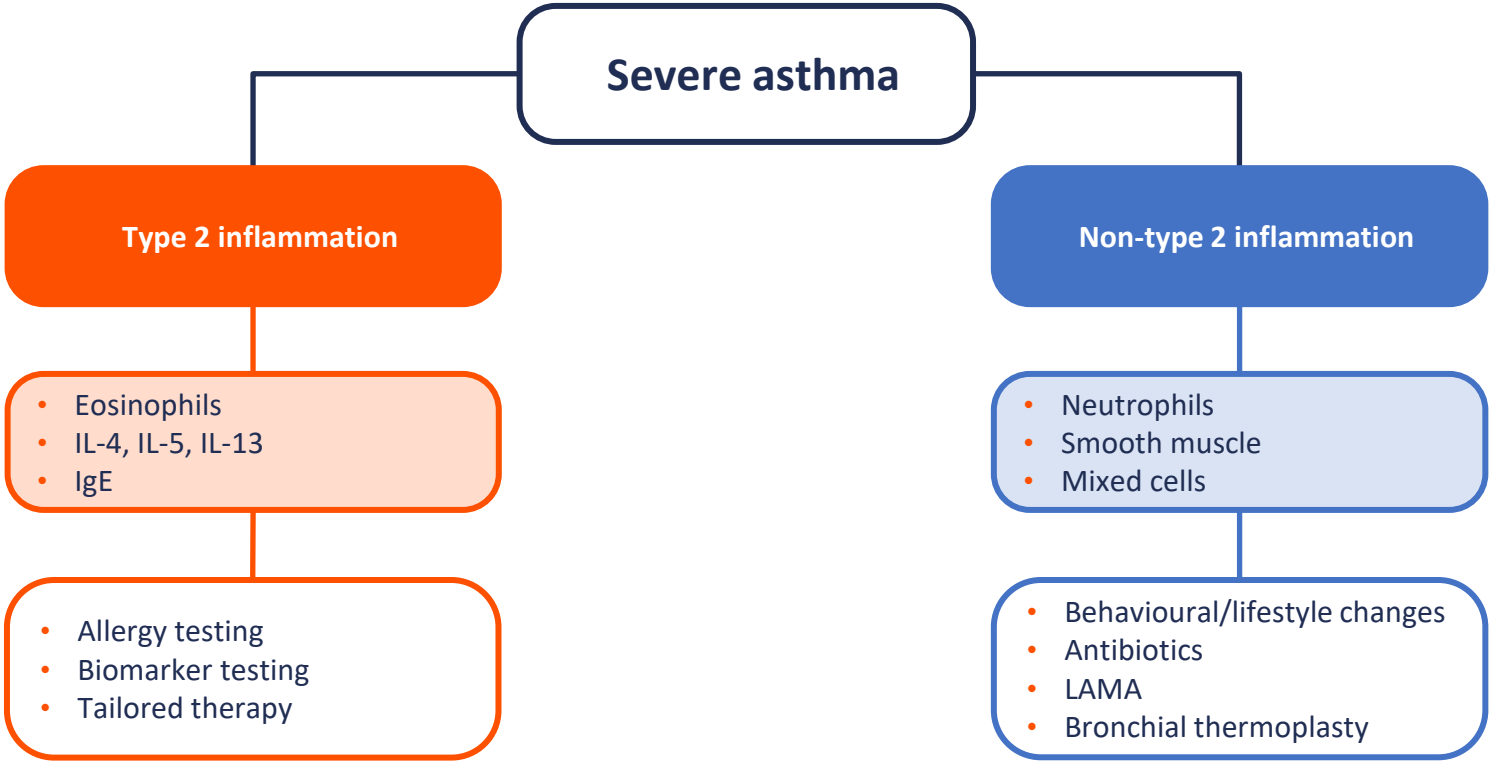
Unravelling the pathogenesis of type 2 asthma

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

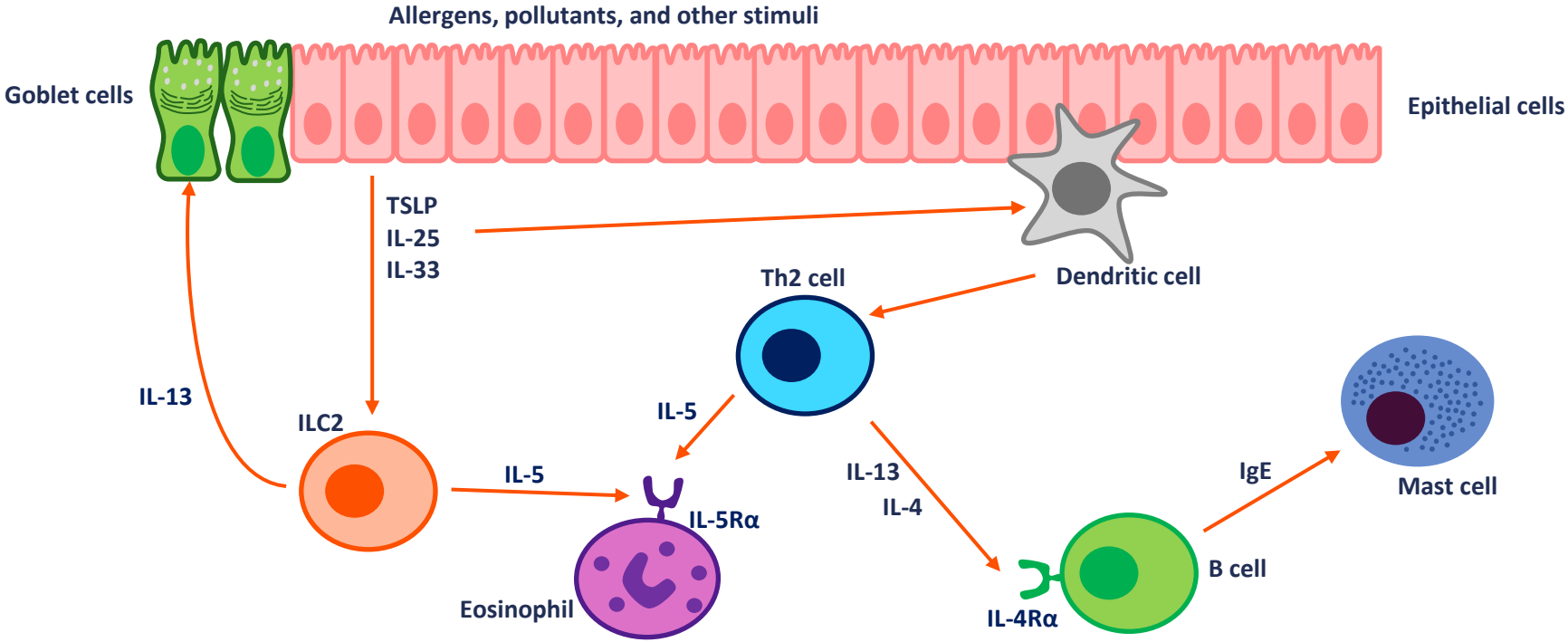
Severe asthma[1–3]



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.

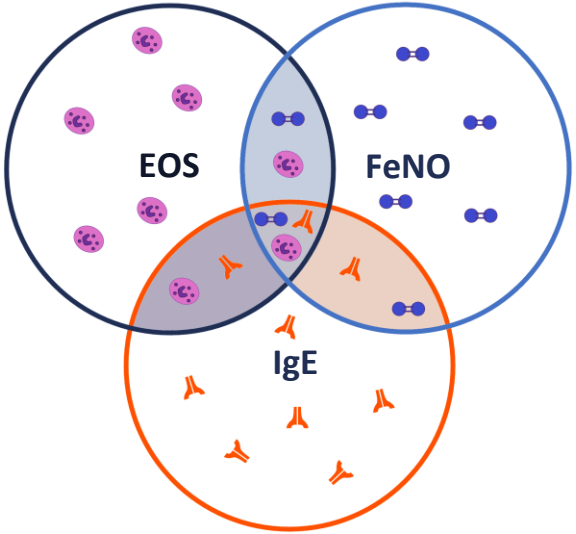
Pelaia C, et al. *Front Immunol.* 2020;11:603312.

Identifying patients with type 2 asthma: Clinical and molecular considerations

Guidelines for type 2 asthma diagnosis and treatment

Patient unresponsive to GINA-recommended controller treatments[1]

Type 2 inflammation detected through individual or combination of biomarkers[2,3]



Anti-IL-5/anti-IL-5 receptor[1]

- Exacerbations in previous year
- Blood eosinophils ≥300 cells/µL

Anti-IgE[1]

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

Anti-IL-4 receptor[1]

- Exacerbations in previous year
- Blood eosinophils ≥150 cells/µL or FeNO ≥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/ (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

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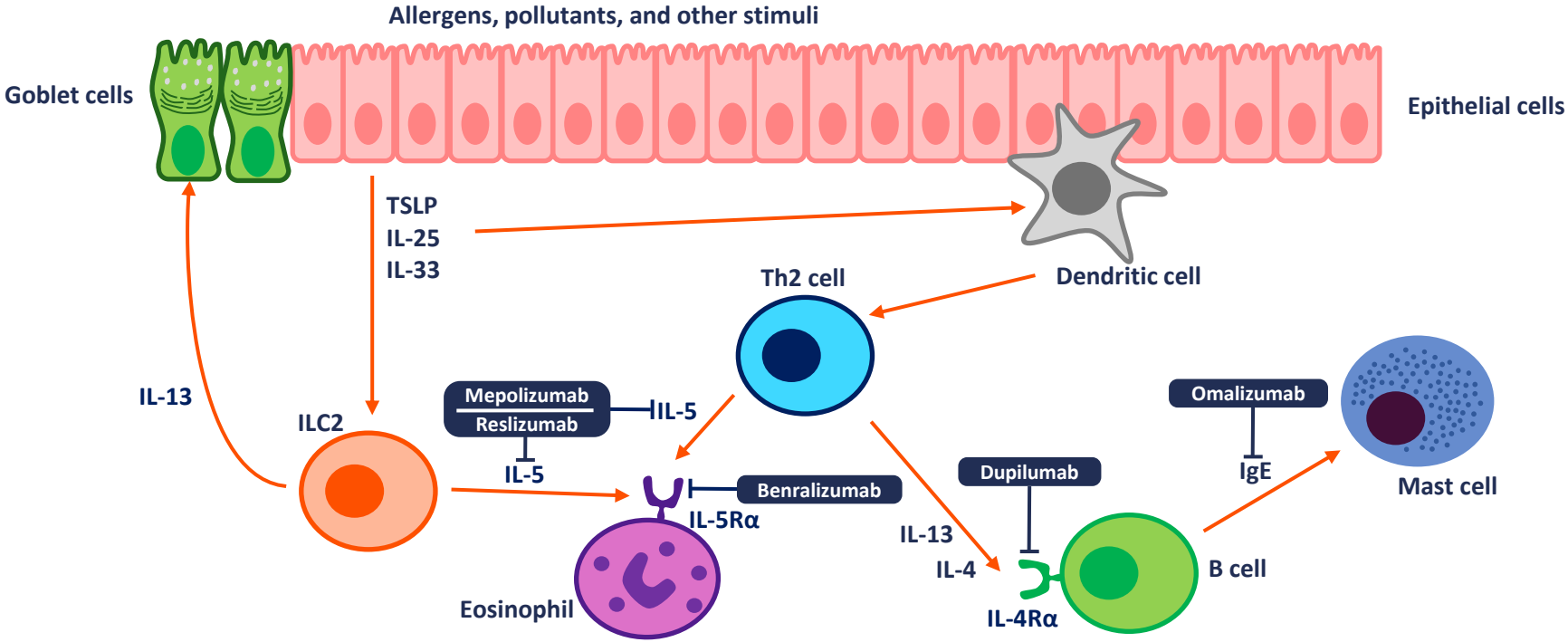
Approved biologics for type 2 asthma



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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

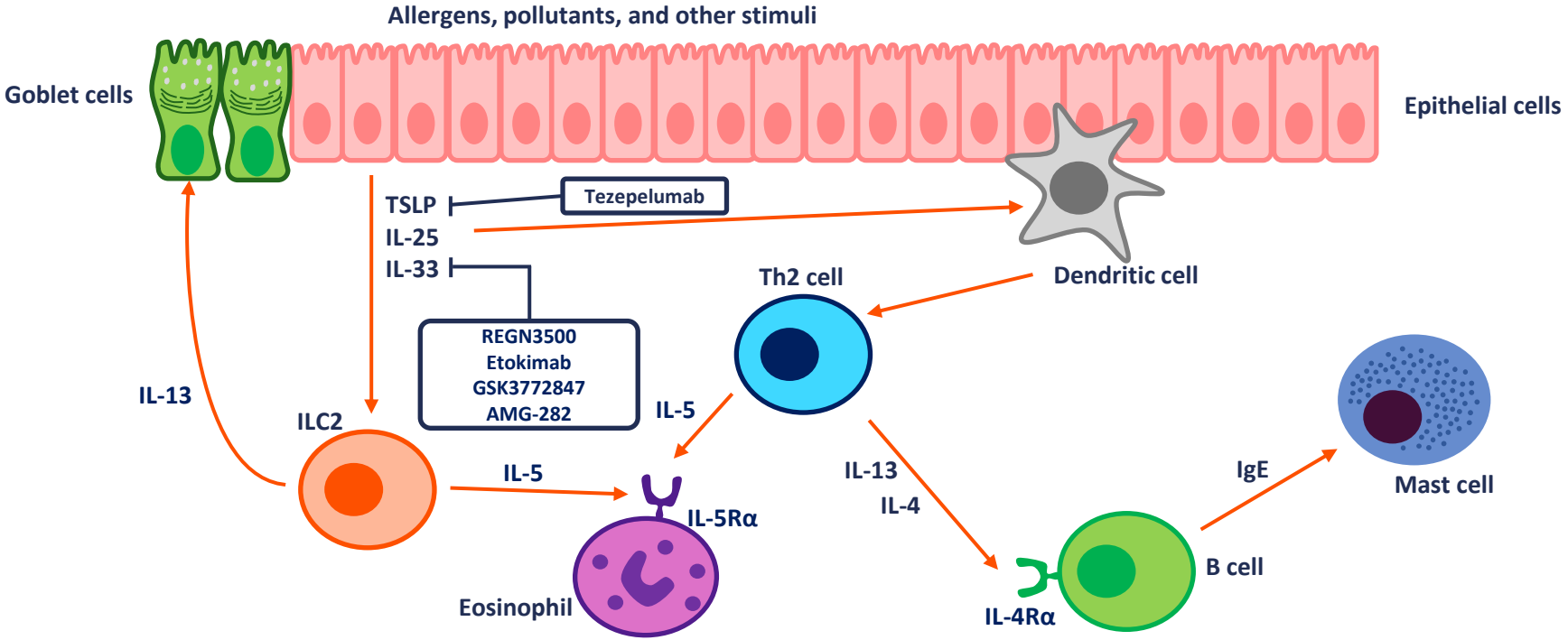
NCT03562195
Adolescents and adults (≥12 years)
Efficacy and safety in a Chinese cohort

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

ICS, inhaled corticosteroid; IL, interleukin; LABA, long-acting β_2-agonist; OCS, oral corticosteroid; PD, pharmacodynamic; PK, pharmacokinetic.
Clinical trials listed by their identifiers at: ClinicalTrials.gov (accessed 17 March 2021).

Emerging biologics for type 2 asthma



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