Real World Biologic Use and Switch Patterns in Severe Asthma: Data from the International Severe Asthma Registry and the US CHRONICLE Study

Andrew N Menzies-Gow, Claire McBrien, Bindhu Unni, Celeste M Porsbjerg, Mona Al-Ahmad, Christopher S Ambrose, Karin Dahl Assing, Anna von Bülow, John Busby, Borja G Cosio, J Mark FitzGerald, Esther Garcia Gil, Susanne Hansen, Liam G Heaney, Mark Hew, David J Jackson, Maria Kallieri, Stelios Loukides, Njira L Lugogo, Andriana I Papaioannou, Désirée Larenas-Linnemann, Wendy C Moore, Luis A Perez-de-Llano, Linda M Rasmussen, Johannes M Schmid, Salman Siddiqui, Marianna Alacqua, Trung N Tran, Charlotte Suppli Ulrik, John W Upham, Eileen Wang, Lakmini Bulathsinhala, Victoria A Carter, Isha Chaudhry, Neva Eleangovan, Ruth B Murray, Chris A Price, David B Price

Real world biologic use and switch patterns in severe asthma

CHRONICLE Study (USA)

Historical cohort study

Inclusion criteria

- ≥18 years old at biologic initiation
- Severe asthma (GINA Step 5 or uncontrolled asthma at GINA Step 4)
- Treated with a biologic
- ≥6 months of follow-up after biologic initiation

All subjects were treated in countries that had access to ≥2 biologics. Therefore continuation, stopping, or switching of biologics was feasible.

Analyses

Demographic and clinical characteristics pre-biologic initiation

Patterns of biologic use

- Patterns of biologic stopping, switching and continuations
- Time to cessation of first biologic
- Switch patterns by biologic class
- Reasons for stopping or switching biologics

Sensitivity analyses

- Prospective patients (n=2656)
- Non-US (n=1404)

GINA = Global Initiative for Asthma; CHRONICLE = Observational Study of Characteristics, Treatment and Outcomes With Severe Asthma in the United States; USA = United States of America

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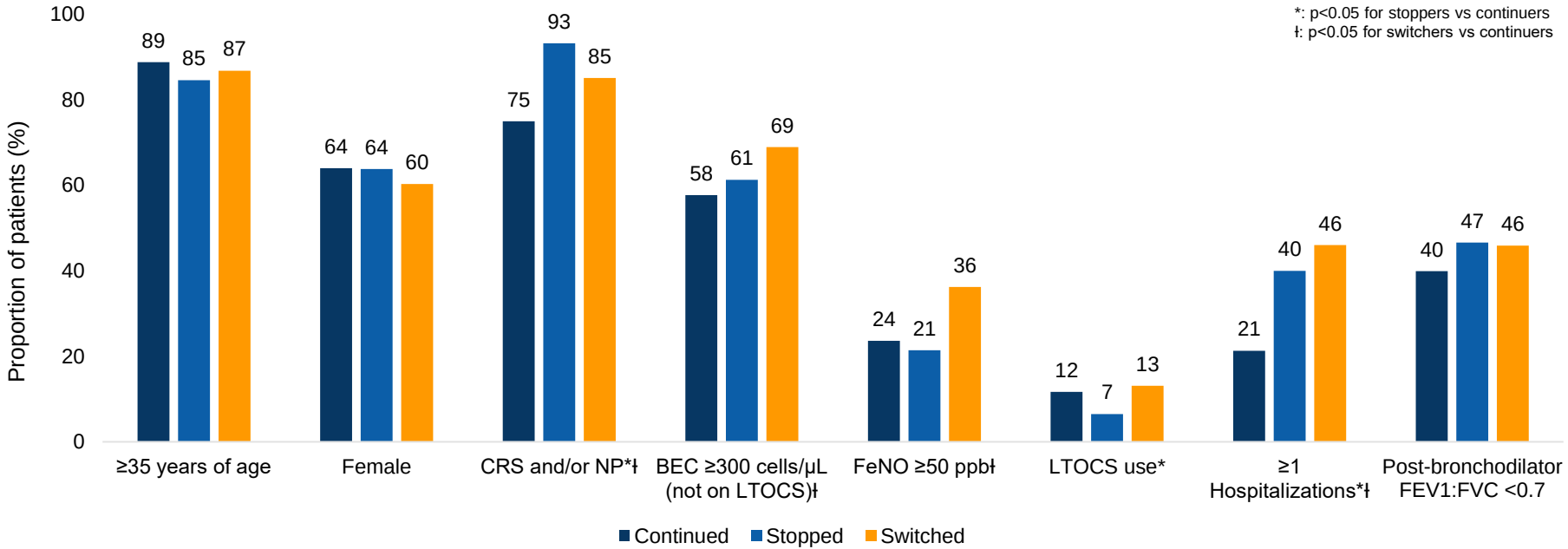
Demographic and clinical characteristics of severe asthma patients before initiation of the first biologic

Pre-biologic initiation, stoppers and switchers were more likely to have poorer lung function and greater healthcare resource utilization than continuers



CRS and/or NP refers to CRS with NP, eosinophilic CRS or CRS without nasal polyps.
BEC = Blood eosinophil count; CRS = Chronic rhinosinusitis; FeNO = Fractional exhaled nitric oxide; FEV1 = Forced expiratory volume in 1 second; FVC = Forced vital capacity; LTOCS = Long-term oral corticosteroids; NP = Nasal polyps

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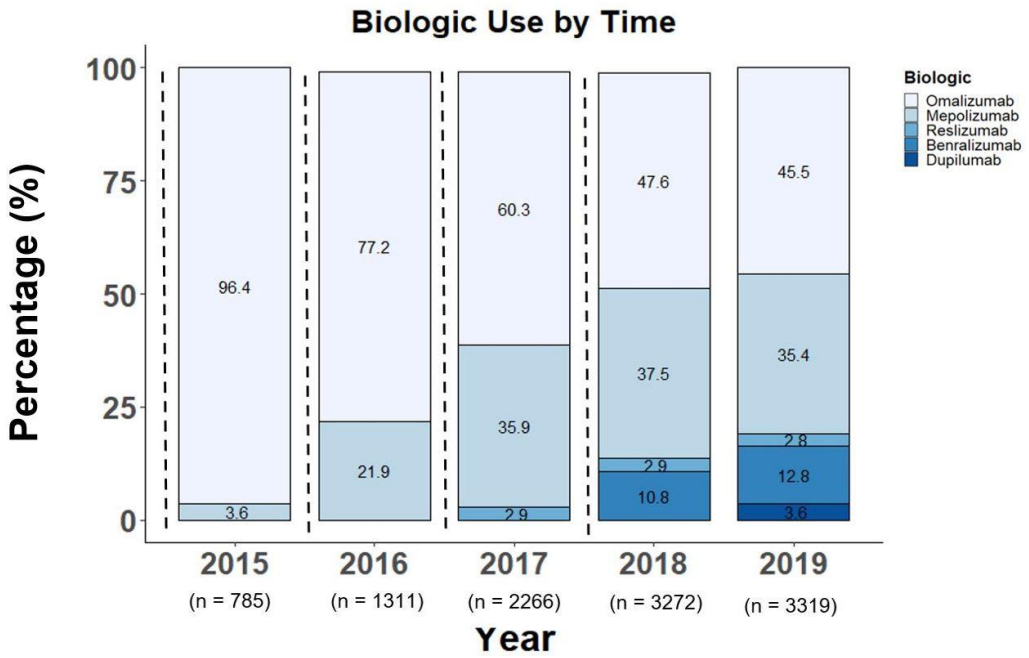
Patterns of biologic use over time by biologic class

Over time, the proportional use of Anti-IgE therapy ↓ while that of Anti-IL5/5R therapies ↑.



IgE = Immunoglobulin E; IL5/5R = Interleukin 5/5 receptor

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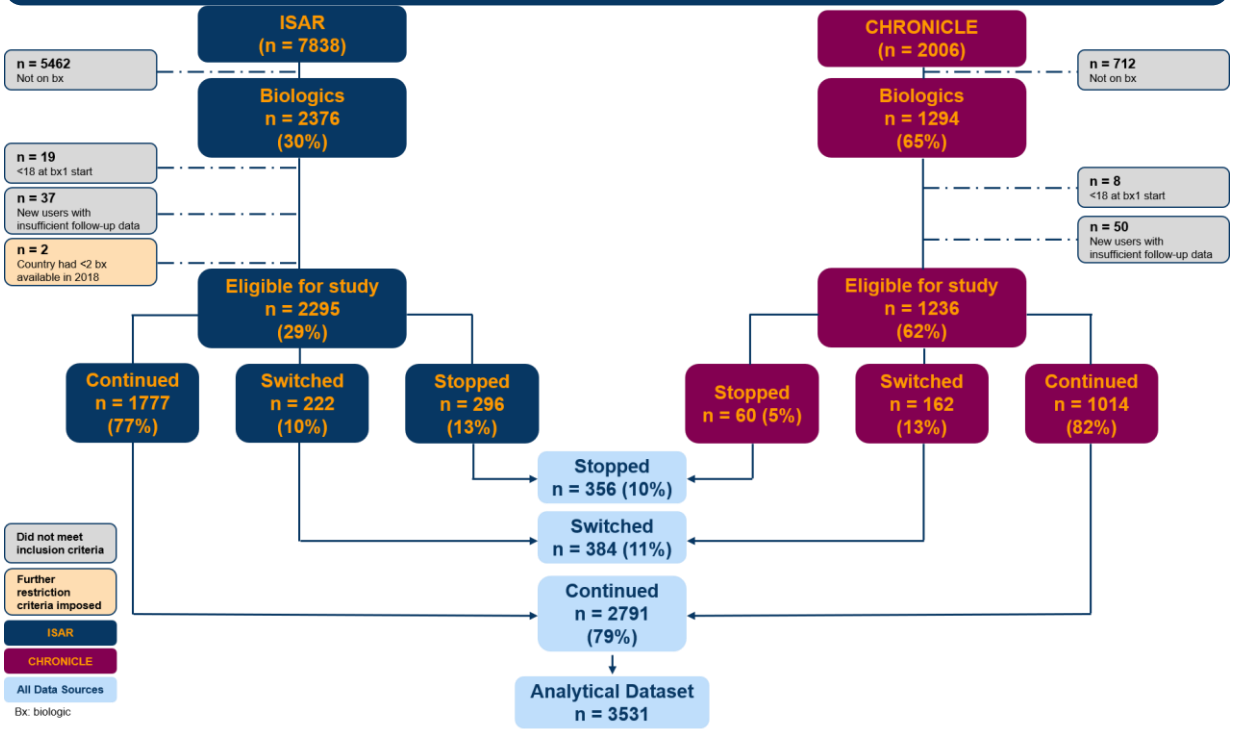
Patterns of biologic use in patients with severe asthma

79% of patients continued their first biologic for at least 6 months while 10.2% stopped and 10.8% switched during follow ups.



ISAR = International Severe Asthma Registry; CHRONICLE = Observational Study of Characteristics, Treatment and Outcomes With Severe Asthma in the United States
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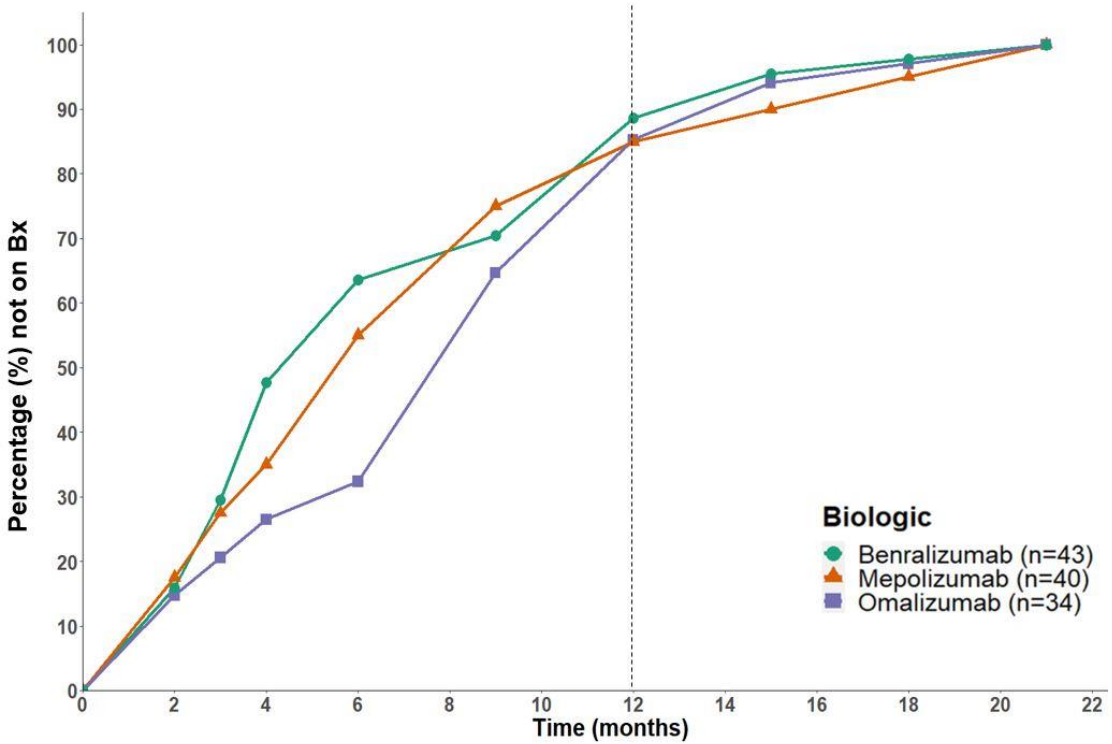
Time to biologic cessation in patients with severe asthma

Most patients stopped their first biologic within 12 months. The time patients received their initial biologic varied for those who switched.



Bx = Biologic

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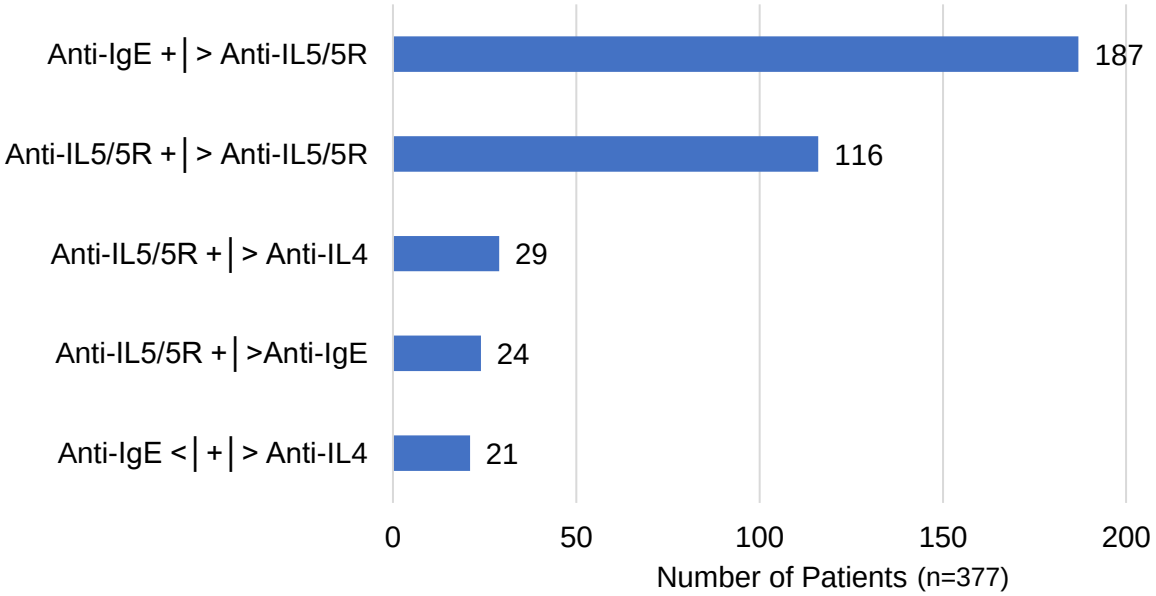
Patterns of biologic switches for patients with severe asthma

Of patients who stopped or switched their first biologic, the most common first switch was from omalizumab to (or, rarely, combined with) an anti–IL-5/5R.



Patterns are mutually exclusive; | : or, < , >: sequence of switch; +: add-on use

IgE = Immunoglobulin E; IL4/13 = Interleukin 4/13; IL5/5R = Interleukin 5/5 receptor

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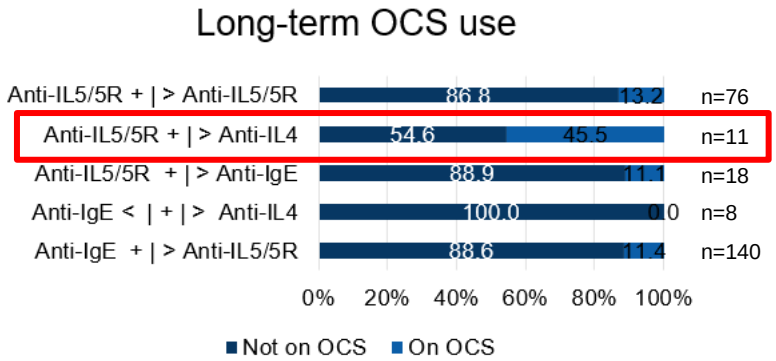
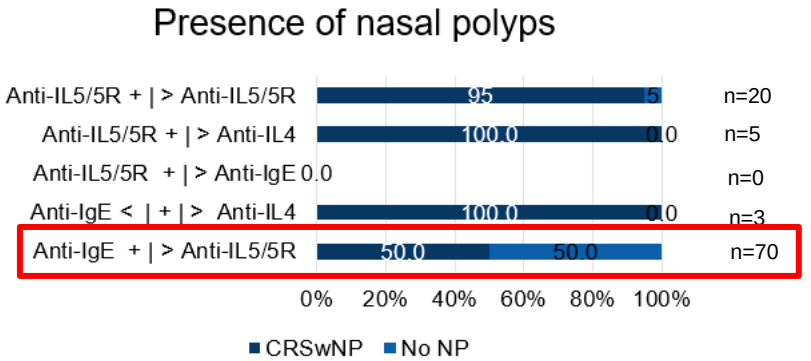
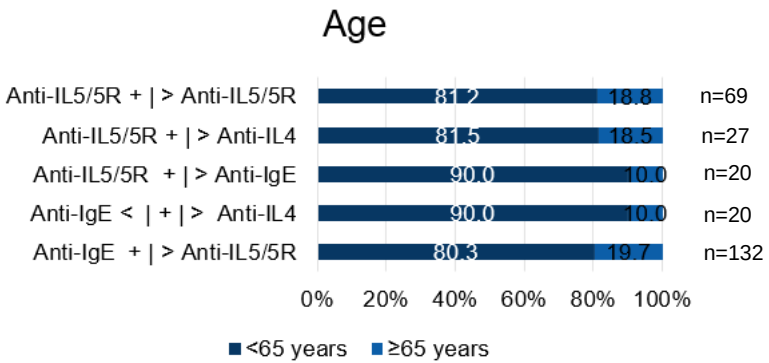
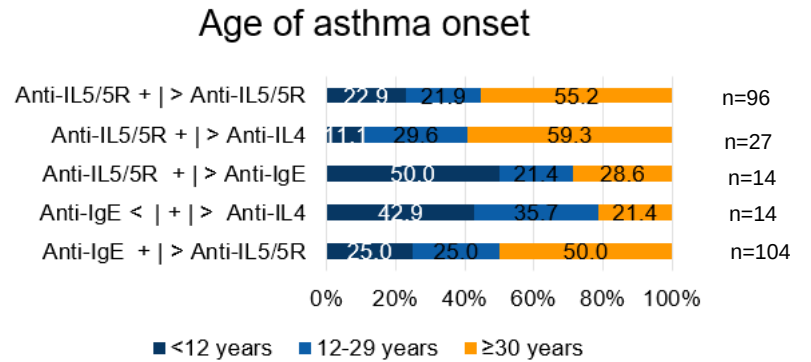
Patterns of biologic switches by age, LTOCS use, age of asthma onset and presence of nasal polyps









CRSwNP = Chronic rhinosinusitis with nasal polyps; IgE = Immunoglobulin E; IL4 = Interleukin 4; IL5/5R = Interleukin 5/5 receptor; LTOCS = Long-term oral corticosteroid; NP = Nasal polyps; OCS = Oral corticosteroids

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Reasons a patient stopped or switched their first-prescribed biologic

The most commonly cited reasons for stopping or switching a biologic were insufficient clinical efficacy and adverse outcomes.

Reason	Stopped (n=139)	Switched (n=280)
Reason available n (%)	113	183
Insufficient Clinical Efficacy	72 (63.7%)	158 (86.3%)
Potential Adverse Outcomes	18 (15.9%)	14 (7.7%)
Biologic Access Restriction	8 (7.1%)	5 (2.7%)
Patient Preference	4 (3.5%)	3 (1.6%)
Other	12 (10.6%)	11 (6.0%)

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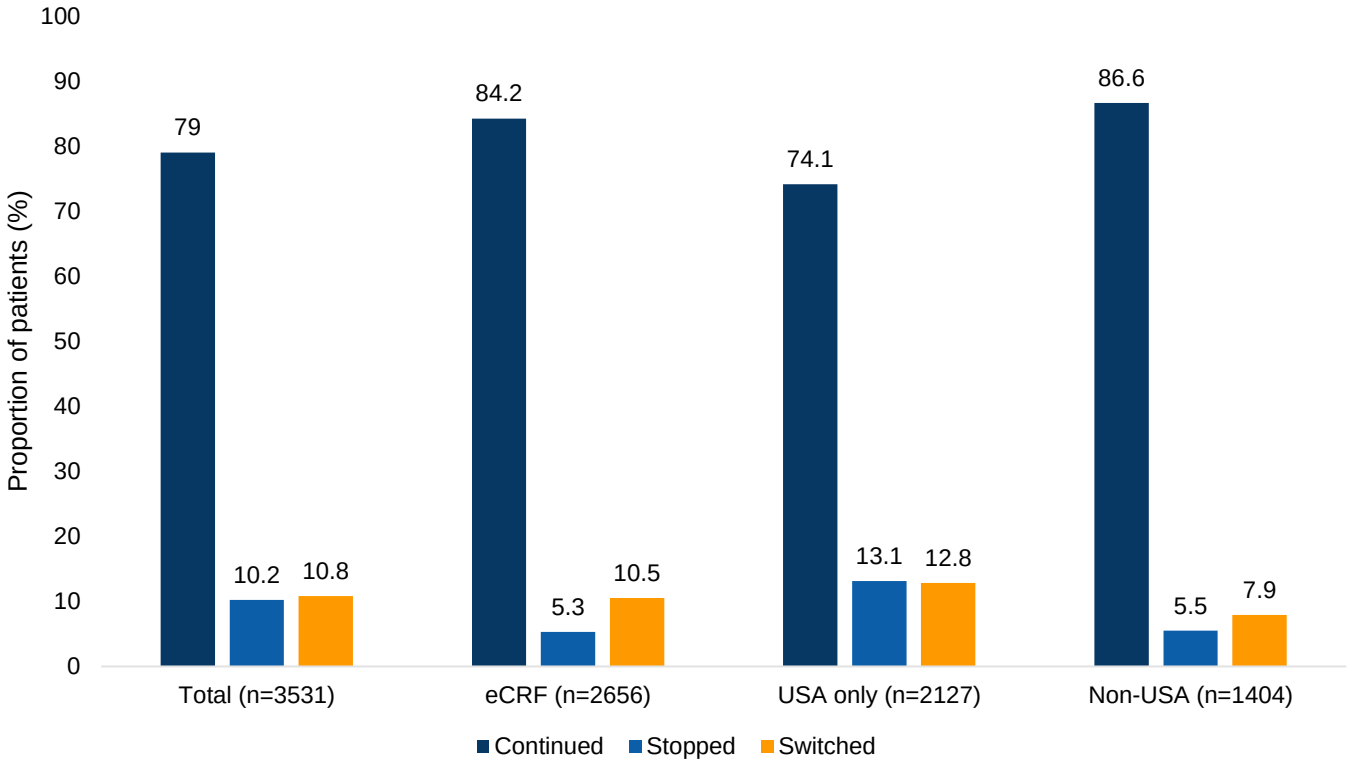
Sensitivity analyses of prospective and non-US patients: Patterns of biologic use



eCRF = Electronic case report form; US = United States

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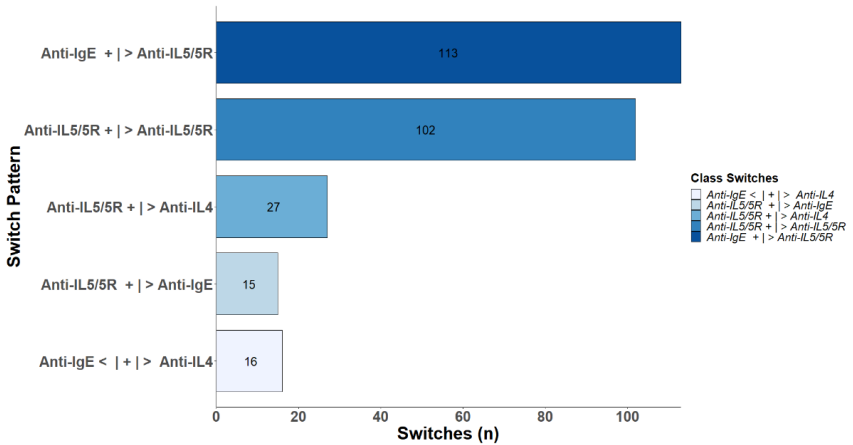
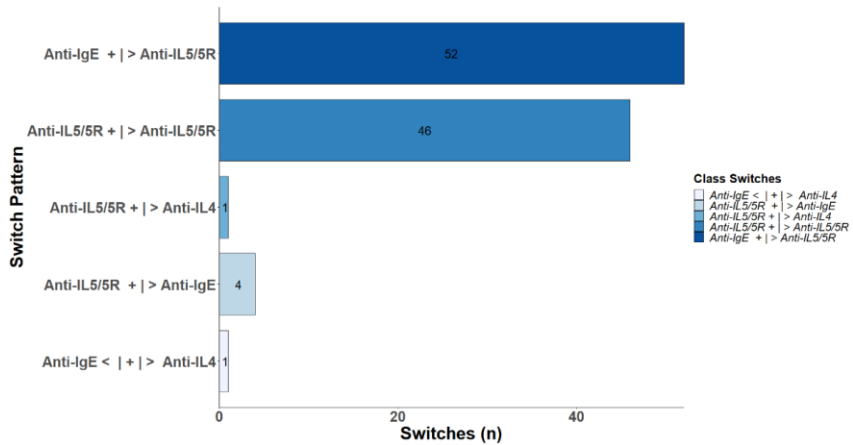
Sensitivity analyses of prospective and non-US patients: Patterns of first biologic switch

Like in the overall population, the most common first switch in prospective and non-US patients was from omalizumab to an anti-IL5/5R therapy.

eCRF data only (n=273)



Non-US data only (n=104)



eCRF = Electronic case report form; IgE = Immunoglobulin E; IL4 = Interleukin 4; IL5/5R = Interleukin 5/5 receptor; US = United States

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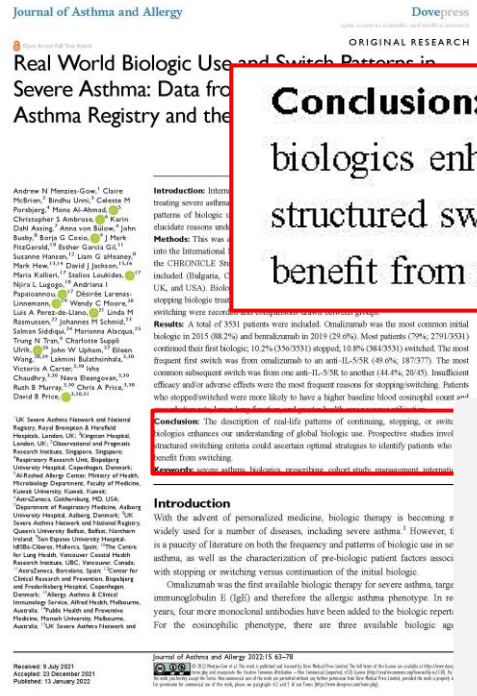
Conclusions



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Conclusion: The description of real-life patterns of continuing, stopping, or switching biologics enhances our understanding of global biologic use. Prospective studies involving structured switching criteria could ascertain optimal strategies to identify patients who may benefit from switching.

Introduction

Journal of Asthma and Allergy 2022:15 63–78

Received: 9 July 2021
Accepted: 23 December 2021
Published: 13 January 2022

Our findings naturally trigger the question: Is the first biologic prescribed to a patient usually the best one for that individual, or are we under-switching?

ISAR = International Severe Asthma Registry
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Acknowledgements

- **We would like to thank all patients and collaborators who contributed to this research study.**
- **This research study was funded and delivered by the Observational and Pragmatic Research Institute Pte Ltd (OPRI). The International Severe Asthma Registry (ISAR) is co-funded by Optimum Patient Care Global Limited and AstraZeneca.**

- Registration of the ISAR database with the European Union Electronic Register of Post-Authorization studies was also undertaken (ENCEPP/DSPP/23720). ISAR has ethical approval from the Anonymised Data Ethics Protocols and Transparency (ADEPT) committee (ADEPT0218). All data collection sites in the International Severe Asthma Registry (ISAR) have obtained regulatory agreement in compliance with specific data transfer laws, country-specific legislation, and relevant ethical boards and organizations.

ADEPT = Anonymised Data Ethics Protocols and Transparency; ENCePP = European Network of Centres for Pharmacoepidemiology and Pharmacovigilance; ISAR = International Severe Asthma Registry

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