

# Baseline characteristics of severe asthma patients initiating biologic treatment worldwide

Luis Pérez De Llano<sup>1</sup>, Aivaras Cepelis<sup>2</sup>, Trung N. Tran<sup>3</sup>, Ruth Murray<sup>4</sup>, David Price<sup>2,4</sup>, on behalf of the ISAR BEAM Working Group

<sup>1</sup>Department of Respiratory Medicine, Hospital Universitario Lucus Augusti - Lugo (Spain); <sup>2</sup>Observational and Pragmatic Research Institute, Singapore, Singapore; <sup>3</sup>AstraZeneca, Gaithersburg, MD, USA; <sup>4</sup>Centre of Academic Primary Care, Division of Applied Health Sciences, University of Aberdeen, Aberdeen, United Kingdom.

Poster #28272

## Introduction

To identify responders to biologic treatment, patients' pre-therapy characteristics must be understood.

## Aim

To describe the characteristics of biologic users at initiation.

## Methods

### Study Design and Population

- In this analysis, we described and compared the baseline characteristics of ISAR patients who initiated anti-IgE or anti-IL5/5R

### Patient Inclusion

- Observational, cohort study using patient ( $\geq 18$  years old, GINA Steps 5 or uncontrolled GINA 4) data from the International Severe Asthma Registry (ISAR; <http://isaregistries.org/>)
- Patients treated with anti-IL5/5R or anti-IgE during study period (May 2015 to July 2021)
- Available registry data from biologic initiation date until a follow-up visit that is closest to a 24-weeks period
- Had at least one year of pre-therapy information

## Results

Figure 1: BEAM study population

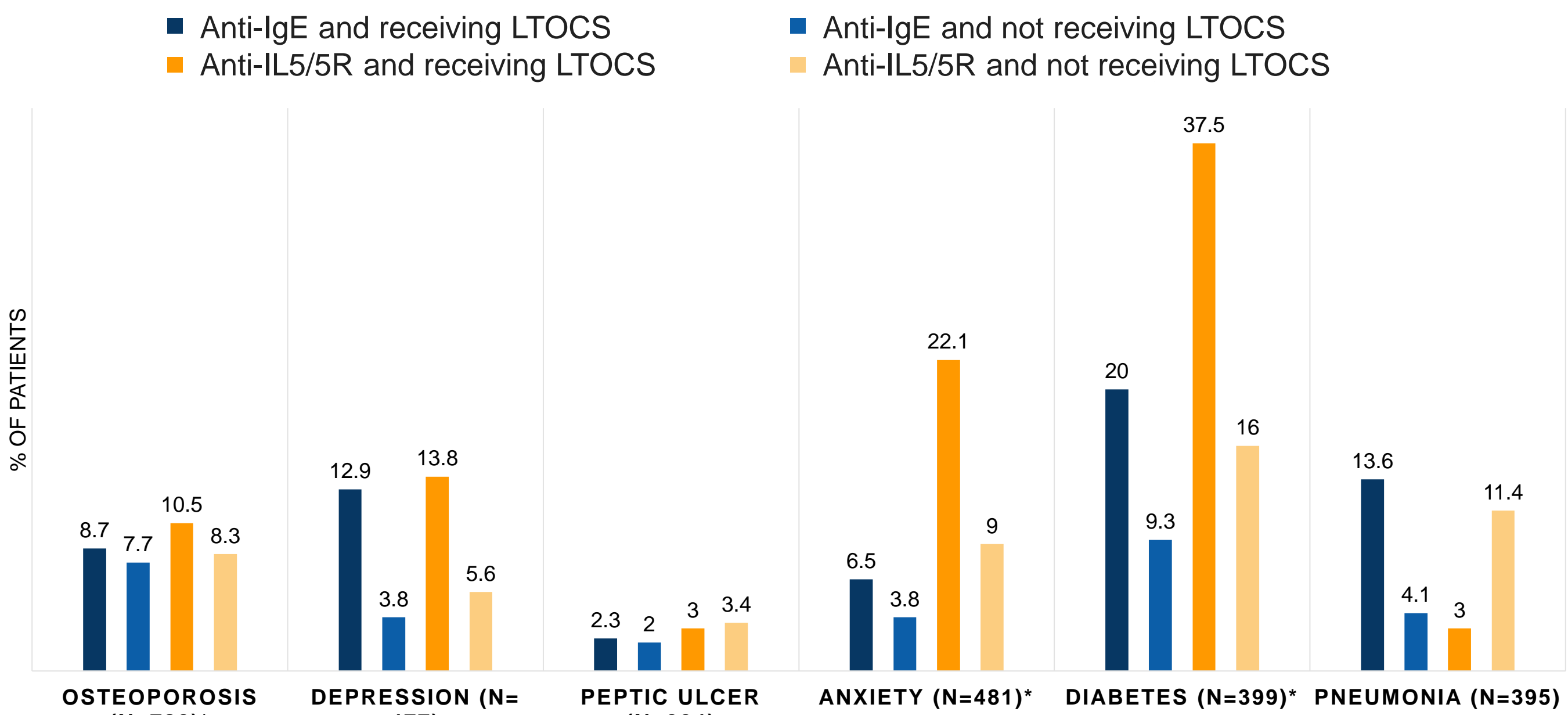
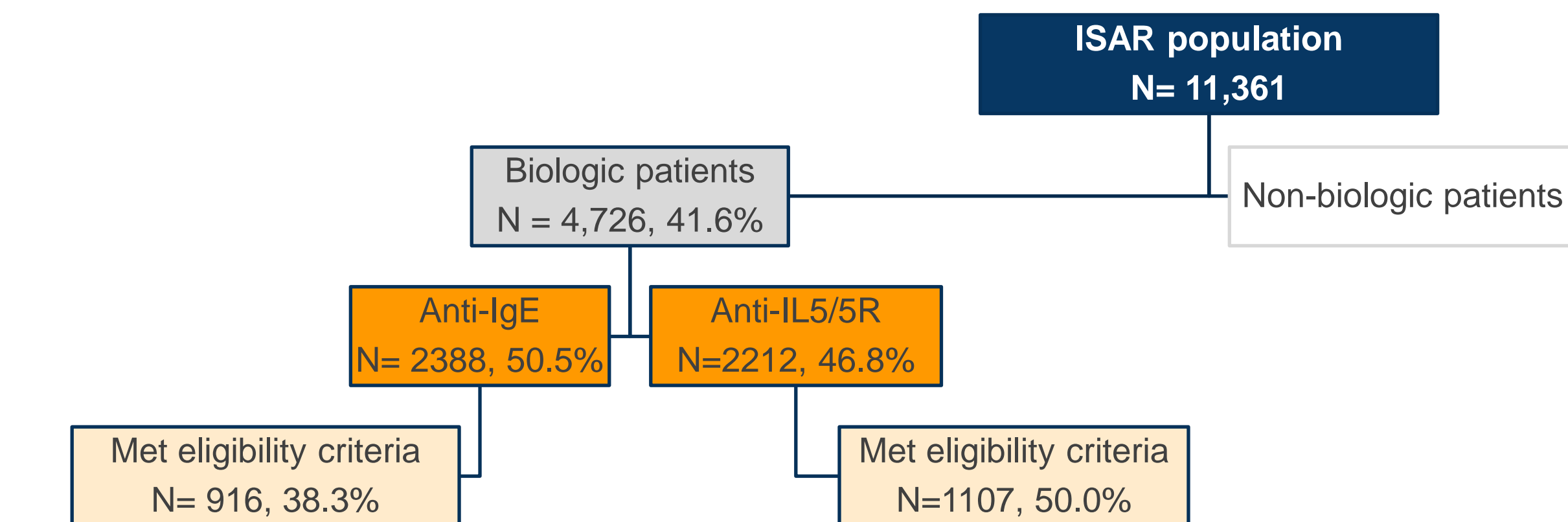


Figure 2: OCS related comorbidities among anti-IgE and anti-IL5/5R patients

Table 1: Baseline characteristics among anti-IgE and anti-IL5/5R patients in the BEAM study

Characteristics	Anti-IgE (N = 916)	Anti-IL5/5R (N = 1107)	P-value
<b>Age, N (%)</b>	<b>916 (100%)</b>	<b>1107 (100%)</b>	
18 - 34, N (%)	159 (17.4%)	98 (8.9%)	< 0.001
35 - 54, N (%)	351 (38.3%)	419 (37.9%)	
55 - 79, N (%)	382 (41.7%)	567 (51.2%)	
80+, N (%)	24 (2.6%)	23 (2.1%)	
<b>Gender, N (%)</b>	<b>916 (100%)</b>	<b>1107 (100%)</b>	
Female	593 (64.7%)	642 (58%)	< 0.001
<b>Age at onset, N (%)</b>	<b>429 (46.8%)</b>	<b>780 (70.5%)</b>	
mean (SD)	24.3 (17.2)	31.35 (18.6)	< 0.001
<b>BMI, N (%)</b>	<b>862 (94.1%)</b>	<b>989 (89.3%)</b>	
mean (SD)	33.57 (11.3)	29.97 (8.4)	< 0.001
<b>Smoking status, N (%)</b>	<b>843 (92%)</b>	<b>981 (88.6%)</b>	
Ex, N (%)	205 (24.3%)	311 (31.7%)	< 0.001
Current, N (%)	33 (3.9%)	16 (1.6%)	
Never, N (%)	605 (71.8%)	654 (66.6%)	
<b>Asthma control, N, (%)</b>	<b>527 (57.5%)</b>	<b>689 (62.2%)</b>	
Well controlled	153 (29%)	102 (14.8%)	< 0.001
Partially controlled	44 (8.3%)	108 (15.7%)	
Uncontrolled	330 (62.7%)	479 (69.5%)	
<b>Receiving LTOCS</b>	<b>426 (46.5%)</b>	<b>667 (60.3%)</b>	< 0.001
<b>LTOCS dose (mg), N (%)</b>	<b>224 (52.6%)</b>	<b>454 (68.1%)</b>	
mean (SD)	13.53 (10.4)	13.1 (10.2)	0.608
$\leq 5$ mg	67 (29.9%)	124 (27.3%)	0.049
<b>Percent of predicted FEV<sub>1</sub>, N (%)</b>	<b>835 (91.2%)</b>	<b>967 (87.4%)</b>	
mean (SD)	81.93 (23.0)	77.2 (23.5)	< 0.001
<80%	397 (47.5%)	531 (54.9%)	0.003
<b>FEV<sub>1</sub>/FVC Ratio, N (%)</b>	<b>864 (94.3%)</b>	<b>1045 (94.4%)</b>	
mean (SD)	0.71 (0.1)	0.67 (0.2)	< 0.001
<0.7	375 (43.4%)	573 (54.8%)	0.01
<b>Annual events</b>			
<b>Exacerbation, N (%)</b>	<b>442 (48.3%)</b>	<b>902 (81.5%)</b>	
2+	353 (79.9%)	690 (76.5%)	0.288
<b>Hospital admission, N (%)</b>	<b>897 (98%)</b>	<b>1068 (96.5%)</b>	
mean (SD)	0.29 (1.2)	0.53 (1.6)	< 0.001
<b>Emergency room admission, N (%)</b>	<b>897 (98%)</b>	<b>1068 (96.5%)</b>	
mean (SD)	1.26 (4.1)	0.87 (2.8)	0.002
<b>Invasive ventilation, N (%)</b>	<b>897 (98%)</b>	<b>1068 (96.5%)</b>	
mean (SD)	0.03 (0.3)	0.09 (0.5)	0.005

### Anti-IL5/5R patients at or before biologic initiation compared with anti-IgE patients:

- Were older
- Had a greater age of asthma onset
- Had lower proportion of female patients
- Had lower BMI
- Had worse lung function
- Had more uncontrolled asthma
- Received long-term oral corticosteroids (LTOCS)
- Reported more potential steroid-related comorbidities (Figure 2)
- Were more likely to report invasive ventilations and hospital admissions (Table 1)

There were no significant differences between annual events such as exacerbations. However, anti-IgE patients were more likely to report emergency room visits than anti-IL5/5R patients at biologic initiation.

## Conclusions

At biologic initiation, anti-IL5/5R patients seemed to have more severe asthma characteristics.

Clinical responses such as exacerbation, asthma control, LTOCS dosages, spirometry and healthcare resource utilization at post biologic periods will inform the effect of therapy on these patients.

## Abbreviations

LTOCS, Long-term oral corticosteroids; BD, bronchodilator.

## Acknowledgments

Writing, editorial support, and/or formatting assistance in the development of this poster was provided by Nasloon Ali, PhD, Juntao Lyu, PhD, Audrey Ang, BSc (Hons), and Joash Tan, BSc (Hons), of the Observational and Pragmatic Research Institute, Singapore, which was funded by AstraZeneca.

## Disclosures

This study was conducted by the Observational and Pragmatic Research Institute (OPRI) Pte Ltd and was partially funded by Optimum Patient Care Global and AstraZeneca Ltd. No funding was received by the Observational & Pragmatic Research Institute Pte Ltd (OPRI) for its contribution. **Presenter's conflict of interest disclosure:** Luis Perez-de-Llano declares non-financial support, personal fees, and grants from Teva; non-financial support and personal fees from Boehringer Ingelheim, Esteve, GlaxoSmithKline, Mundipharma, and Novartis; personal fees and grants from AstraZeneca and Chiesi; personal fees from Sanofi; and non-financial support from Menairi outside the submitted work.



Additional COI disclosures



Electronic copy of the poster



Audio Summary



Presented as an e-Poster presentation at the European Respiratory Society 2021 International Congress, 5-8 September 2021. Copyright © 2021 [OPRI/AstraZeneca]. All rights reserved.