

Characterisation of severe, steroid-dependent asthma patients who initiate biologics versus those who do not

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Introduction

- High exposure to oral corticosteroids (HOCS) is common in treating severe asthma patients
- Initiating biologic therapy may be beneficial for severe asthma patients with HOCS
- Information about the characteristics of those who initiate biologics and those who do not is limited

Aim

To describe the characteristics of an international severe asthma population with HOCS, comparing between those who initiated biologics and those that did not.

Methods

Study Design and Population

Prospective cohort study using patient-level data from the International Severe Asthma Registry (ISAR <http://isaregistry.org/>)

Patient Inclusion

- ≥18 years of age
- HOCS (maintenance use of OCS for at least 1 year, or ≥4 courses of rescue steroid bursts over a 12-month period)
- No prior use of biologics or bronchial thermoplasty

Exposures of Interest

- Initiation of a biologic therapy (day of initiation varied from 7 Feb 2007 to 5 Dec 2020)

Statistical Analysis

- Continuous variable, T-test, categorical variable, Pearson Chi-square

Figure 1: Population eligible for GLITTER

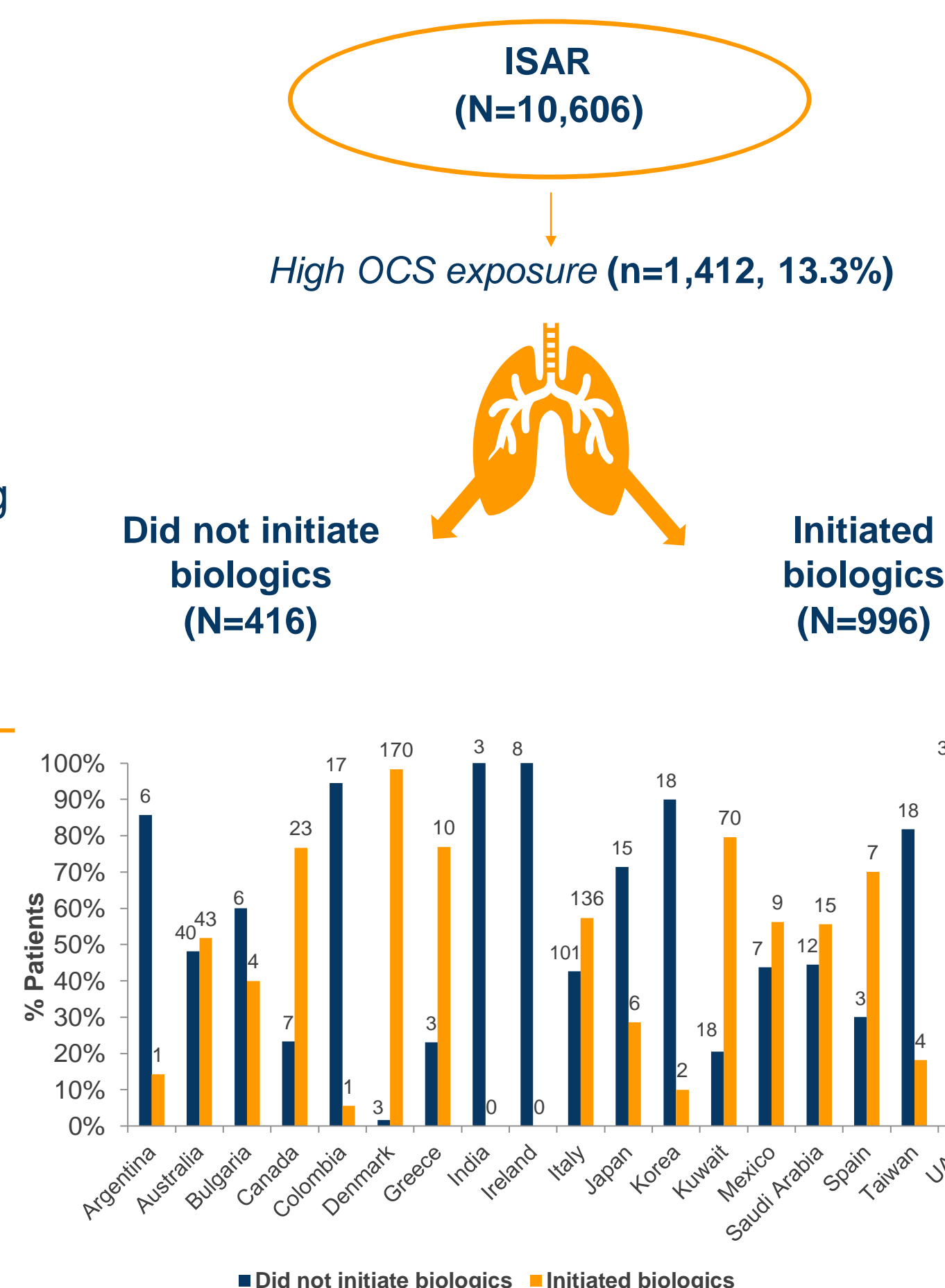


Figure 2: Geographic distribution of ISAR patients with severe asthma who had HOCS

Geographic variations (Figure 1 & 2):

- 71% of HOCS patients-initiated biologics
- Substantial variation with regards to countries among HOCS users

Results

Table 1: Baseline Characteristics of study population

Mean (SD) or %	BX initiated (N=996)	BX not initiated (N=416)	P-value
Age, y	51.7 (13.9)	53.2 (14.5)	0.075
Age of onset, y	27.9 (18.7)	29.5 (18.7)	0.150
Asthma duration, y	23.7 (16.7)	23.8 (16.3)	0.910
BMI, kg/m ²	29.3 (6.8)	29.7 (7.7)	0.310
# of exacerbations in past 12 months	5.7 (3.9)	5.3 (4.0)	0.147
Hospitalization in past 12 months	28.7%	31.5%	0.297
Ever use of invasive ventilation	6.9%	6.5%	0.766
Comorbidities	anxiety, depression, peptic ulcer, type 2 diabetes, pneumonia, chronic rhinosinusitis, eczema		≥0.05
Add-on treatments	long-term OCS, LTRA, theophylline, long-term macrolide, steroid-sparing		≥0.05

Biologic initiators and non-initiators with HOCS had (Table 1):

- Similar age (52 vs 53 years of age)
- Similar BMI (29 vs 30 kg/m²)
- Similar ages at asthma onset and similar pre-index exacerbation (5.7 vs 5.3)

Compared to non initiators, biologic initiators were (Figure 3):

- More likely to be male, White, and an ex-smoker, but less likely to be a current smoker
- More likely to have uncontrolled asthma but less likely to have emergency department visits
- More likely to be eosinophilic, with higher BEC and FeNO level
- More likely to be atopic, with nasal polyps
- Higher presence of airflow limitation

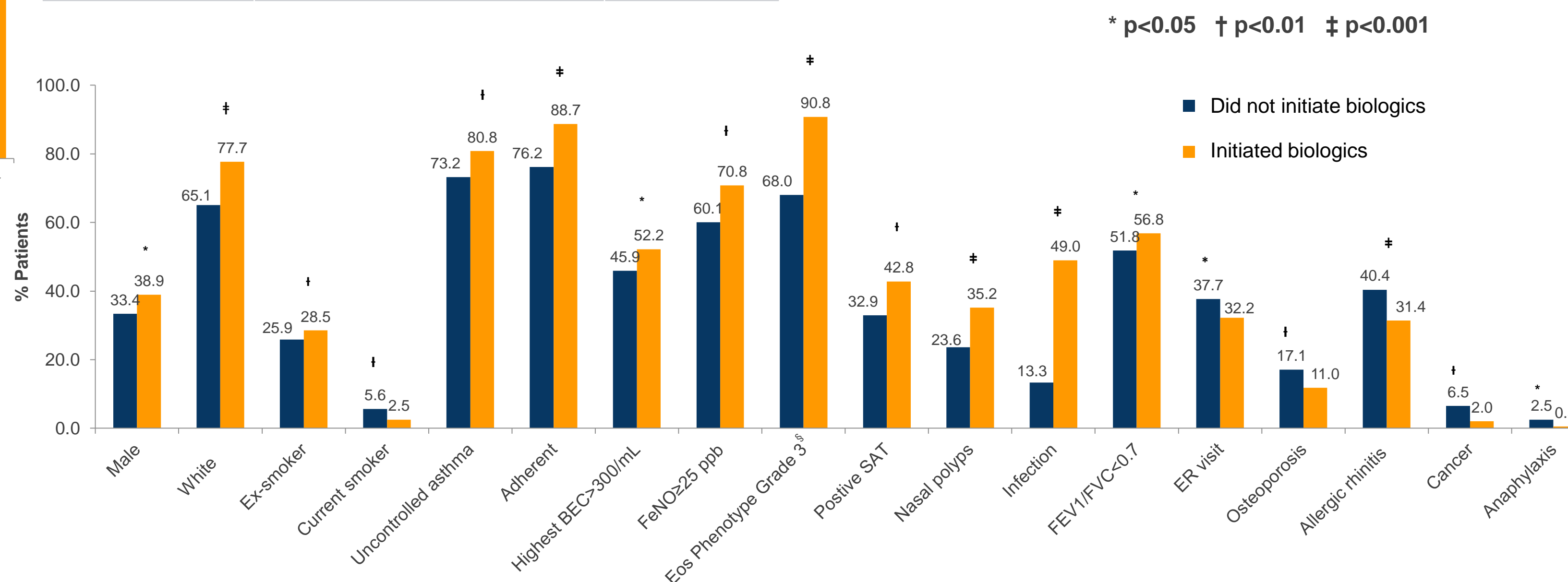


Figure 3: Different baseline characteristics between severe asthma patients with HOCS who initiated biologics and those who did not

Conclusions

- About 71% of ISAR patients with HOCS initiated biologics.
- Biologic initiators were likely to be **eosinophilic, atopic, and uncontrolled**, compared to those who did not initiate biologics.
- Both groups reported **similar burden of exacerbation, hospitalization, and use of add-on therapies.**
- Future research needed on **comparative effectiveness** of initiating biologics over time.

§For Figure 3: Eosinophilic Phenotype Grade 3: Most likely to be eosinophilic, defined as BEC ≥300 cells/μL OR Anti-IL5 Treatment OR BEC ≥150 cells/μL and Long-term OCS OR BEC ≥150 cells/μL and at least 2 of the following: (1) Nasal Polyps, (2) FeNO ≥25 ppb, (3) Adult Onset of Asthma

Abbreviations

BMI, body mass index; BX, biologics; HOCS, High exposure to oral corticosteroids; LTRA, leukotriene receptor antagonist; y, year, SAT; Serum aeroallergen test; BEC, Blood eosinophil count; Eos, Eosinophilic.

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Additional COI disclosures



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Audio Summary



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