

# Decoding Asthma: A Tale of Two Databases

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## Introduction

In Spain, asthma prevalence is estimated at 5–10%, with regional differences. It is the most common chronic disease in childhood. Treatment depends on severity: short-acting bronchodilators (SABA) as needed, inhaled corticosteroids (ICS) with long-acting bronchodilators (LABA), and biologics or oral steroids for severe asthma.

## Objectives

To estimate and compare asthma incidence, demographic patterns, and treatment profiles using two large-scale real-world databases in Spain: Telotróñ® and The Andalusian Population Health Database (BPS).

## Results

### Incidence:

The incidence ranged from 3.4-5.1 per 1,000 population in BPS and 4.0-6.2 in Telotróñ®. (Figure 1)

The incidence ranged between 3.8 and 5.9 per 1,000 in men and between 4.3 and 6.4 in women in Telotróñ®, and between 3.0 and 4.6 in men and between 3.7 and 5.6 in women in BPS.

A bimodal age distribution was observed in both datasets: in Telotróñ®, 23.5% of cases were in those aged 0-15 and 24.5% in those aged 30-45; in BPS, 33.2% and 19.4%, respectively. (Figure 2)

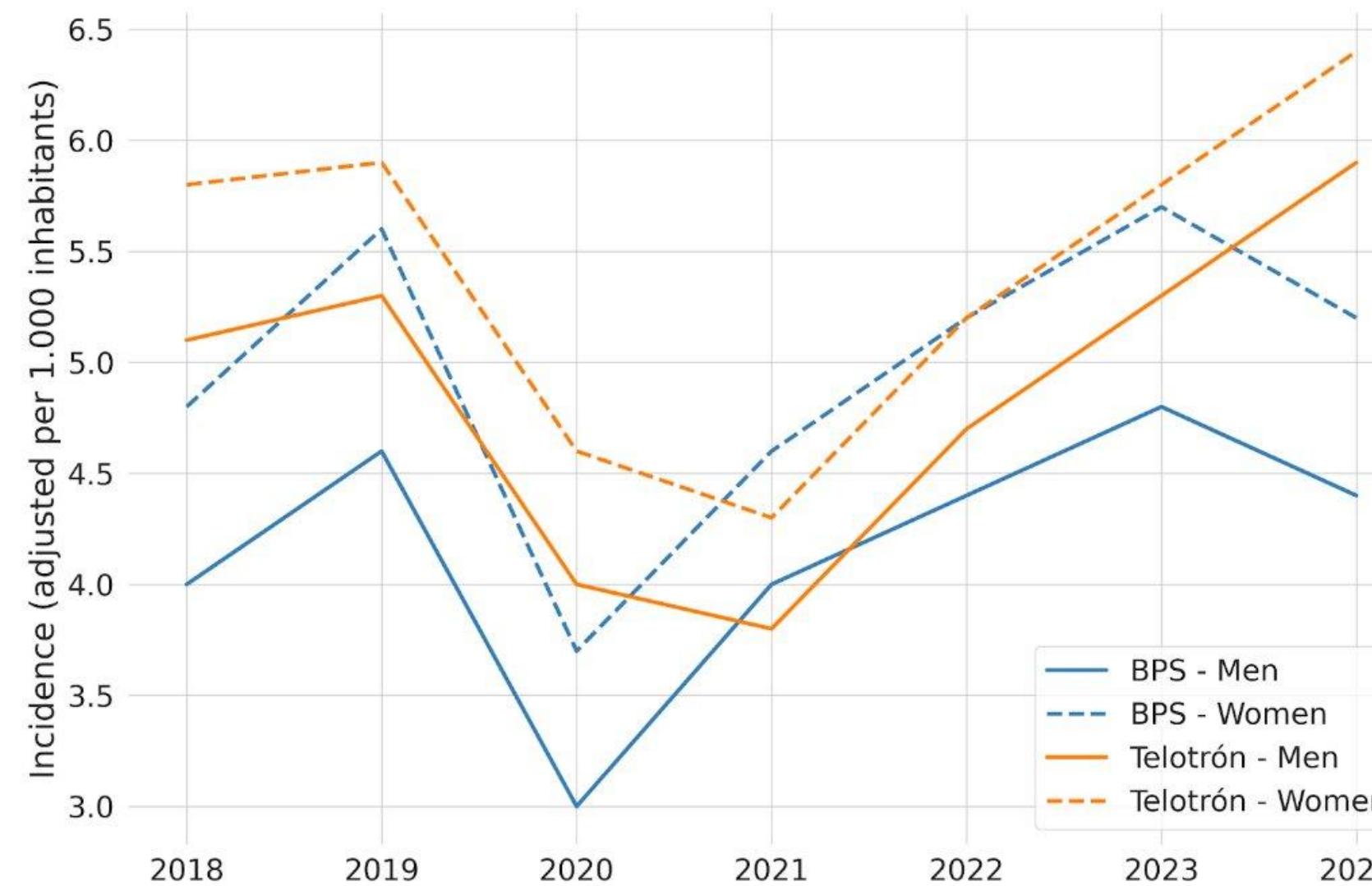


Figure 1. Incidence per year and sex per 1,000 people

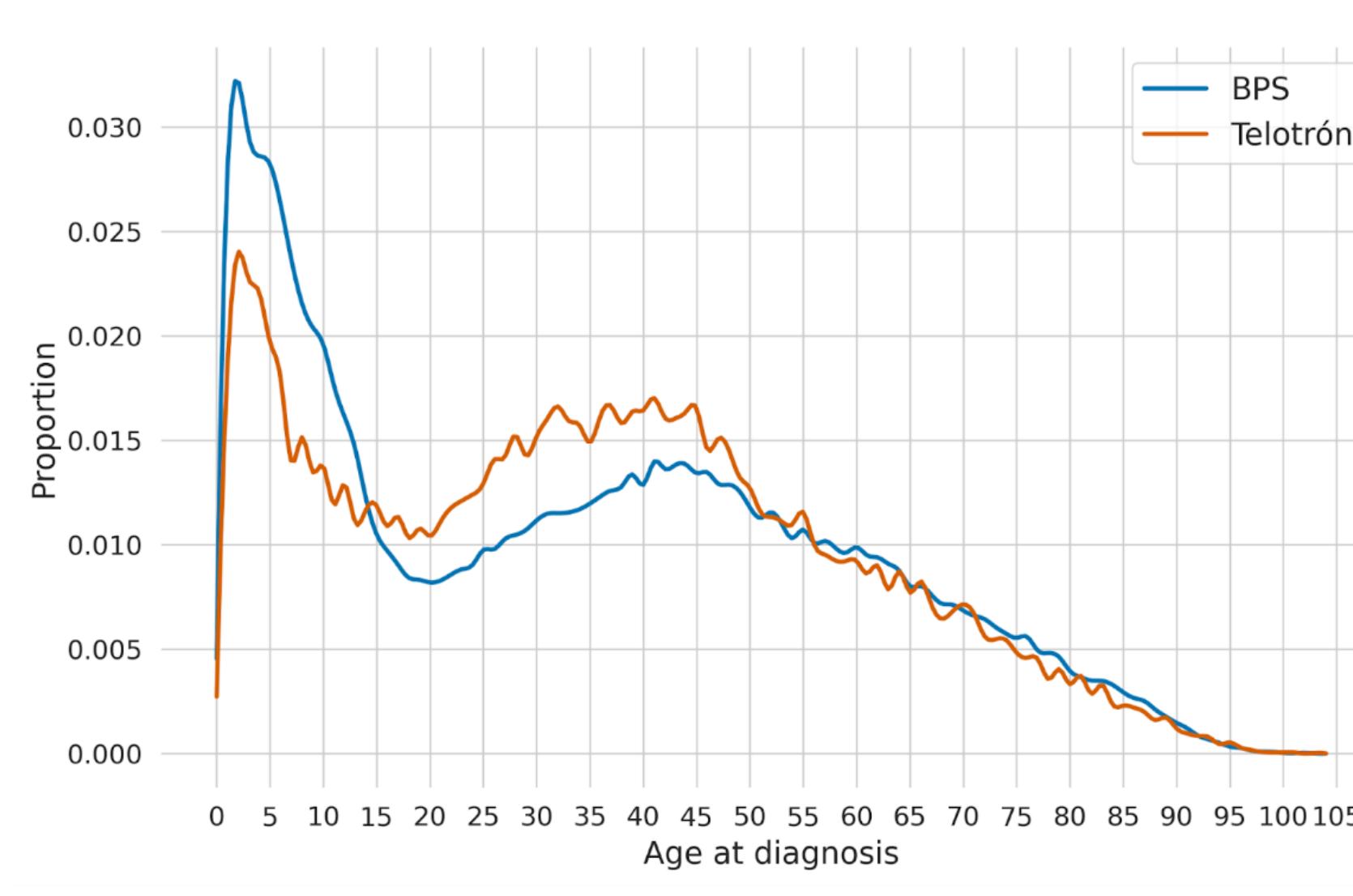


Figure 2. Distribution of age at first diagnosis

### Seasonal patterns:

**BPS:** highest number of diagnoses between March and May. Almost one in four people in Andalusia suffers from respiratory allergy, which is consistent with the increase in asthma diagnoses observed during the spring months.

**Telotróñ®:** higher number of diagnoses in May, November and December.

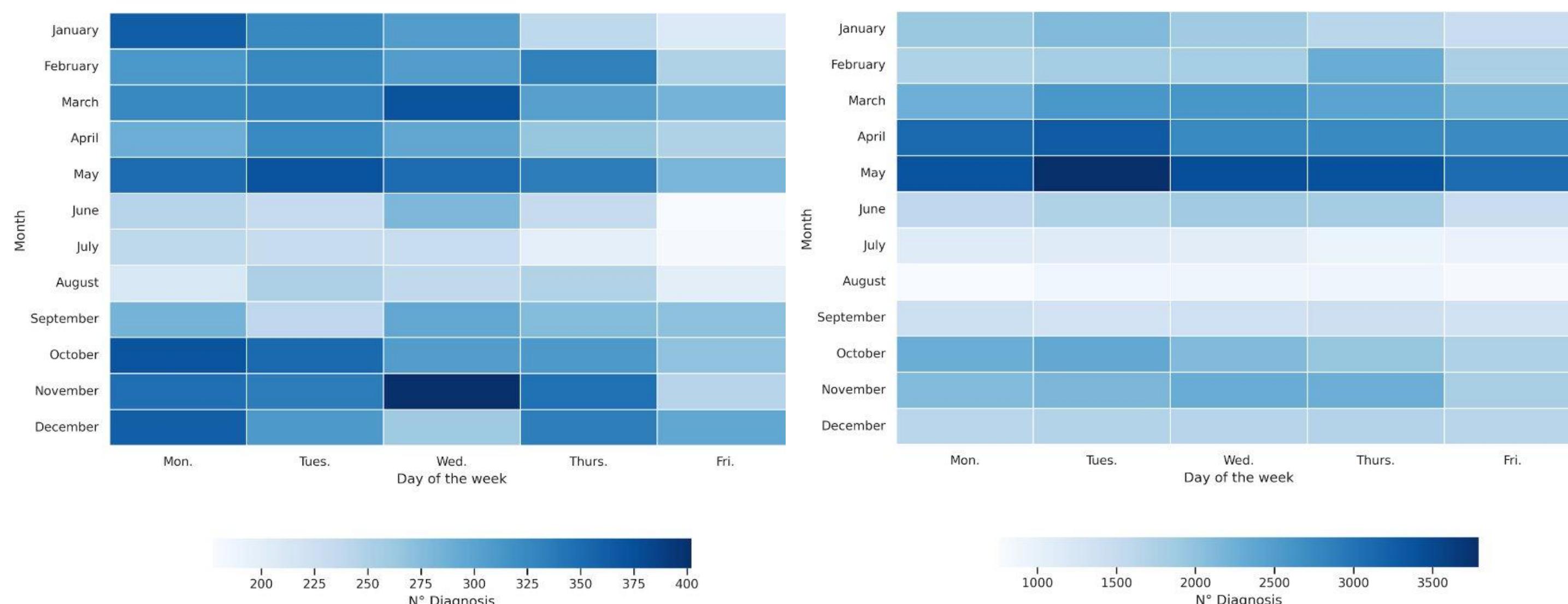


Figure 3. Incidence per month since 2021 in both databases: Telotróñ® (left) and BPS (right)

## Methods

This retrospective observational study (2018–2024) used data from the Telotróñ® and BPS databases to identify new asthma diagnoses (ICD-10: J45 and ICD-9: 493), analyze incidence rates by sex and age group, and compare drug dispensing trends between 2020 and 2024.

Telotróñ®	BPS
<ul style="list-style-type: none"> <li>- Largest clinical database of patients in Spain. 2.2 million patients.</li> <li>- Data from 7 Autonomous Communities representing 52% of the Spanish population. Estimated representativeness of 5% of the total population.</li> <li>- Clinical, demographic and health resource use data.</li> <li>- Monthly update</li> <li>- Registered in the EMA.</li> </ul>	<ul style="list-style-type: none"> <li>- Health information system of the Andalusian Health Service (SSPA).</li> <li>- Complete coverage of the Andalusian population.</li> <li>- Clinical, demographic and health resource use data.</li> <li>- Periodic update</li> </ul>

### Treatments:

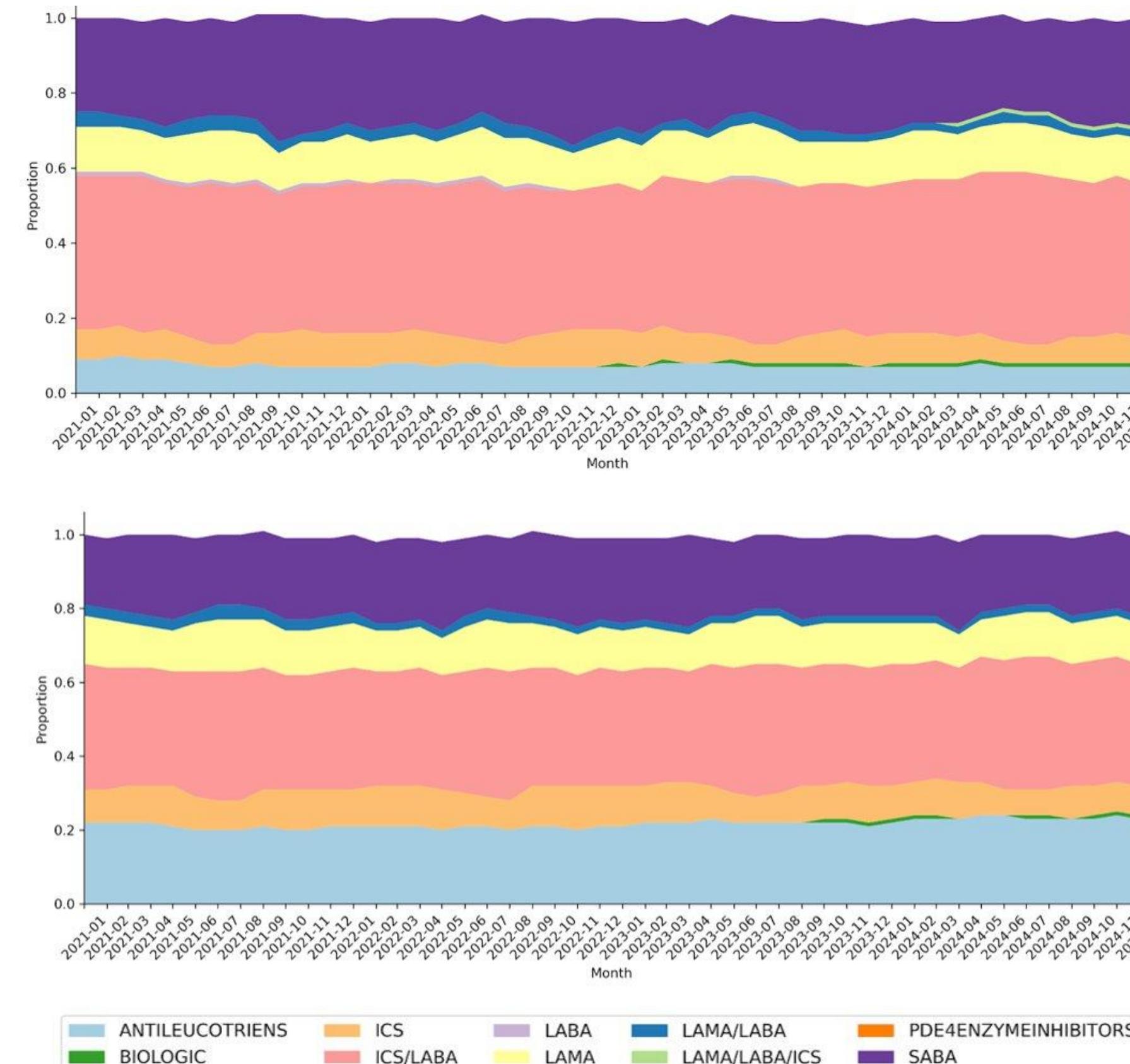


Figure 4. Monthly distribution of prescribed asthma treatments. Telotróñ® (top) BPS (bottom)

BPS shows a higher relative use of antileukotrienes, while Telotróñ® is dominated by ICS/LABA and SABA.

ICS/LABA combinations and LAMA remain stable across both databases.

Use of biologics and PDE4 inhibitor is low but present, showing consistent patterns over time without major seasonal variations.

These differences may reflect variations in clinical profiles or prescribing practices between databases.

Table 1. Patient profiles by biologic treatment (BPS vs. Telotróñ®)

BPS	Asthma (%)	Overall	Dupilumab	Benralizumab	Mepolizumab	Tezepelumab	Omalizumab
		Adult	85.4	80.0	100.0	94.1	96.1
	Child	14.6	20.0	0.0	5.9	3.9	28.9
Telotróñ®	Asthma (%)	Men	45.1	49.1	44.0	48.4	45.5
		Women	54.9	50.9	56.0	51.6	54.5
	Sex (%)	Adult	63.1	46.1	100.0	83.4	100.0
	Child	36.9	53.9	0.0	16.6	0.0	45.1
	Men	44.1	45.6	56.5	42.5	27.3	43.8
	Women	55.9	54.4	43.5	57.5	72.7	56.2

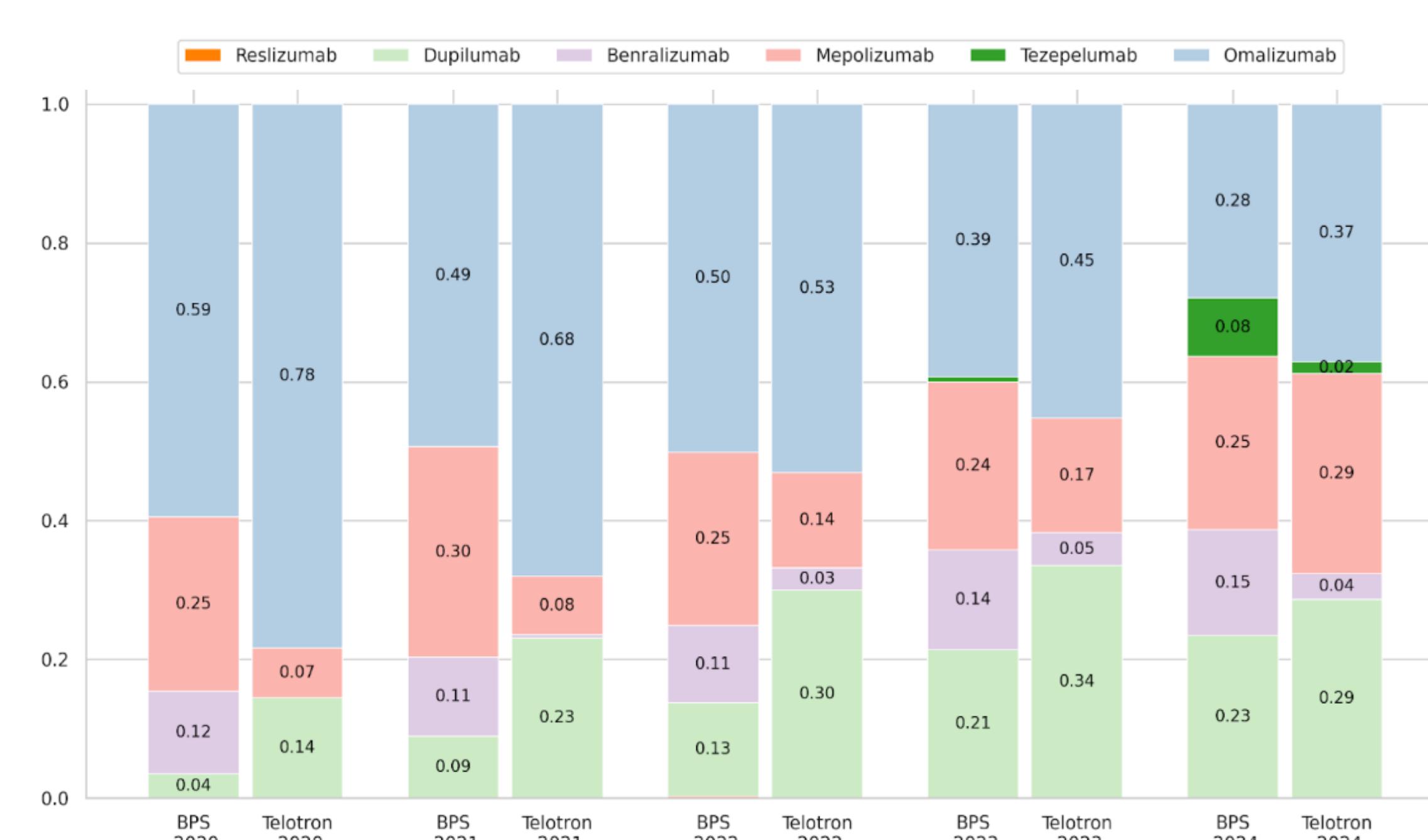


Figure 5. Dispensing of biologic drugs from 2021 to 2024

Omalizumab is the most widely used biologic on both data bases. Differences could be due to clinical criteria, availability or patient profile.

## Conclusions

- Incidence rates were consistent between BPS and Telotróñ®, with slightly higher values in Telotróñ®.
- Higher incidence in women and bimodal pattern by age (peaks in 0-10 and 30-45 years) in both bases.
- The most prescribed class was ICS/LABA (inhaled glucocorticoids + long-acting bronchodilators).
- The results support the validity of both sources (BPS and Telotróñ®) for Real World Evidence studies in different populations.