

Treatment Pattern and Disease Burden of Severe Asthma: A Real-World Study Based on Claims Data in China

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BACKGROUNDS

- Asthma is a chronic airway inflammatory disease involving many kinds of cells and cell components, and **3.4% ~ 8.4%**^[1-3] of which accounted for severe asthma.
- As a critical subset of asthma, severe asthma is known for **escalating the risk of asthma-related symptoms**^[4].
- However, current research on the treatment pattern and disease burden of patients with severe asthma remains limited, especially in China.

OBJECTIVES

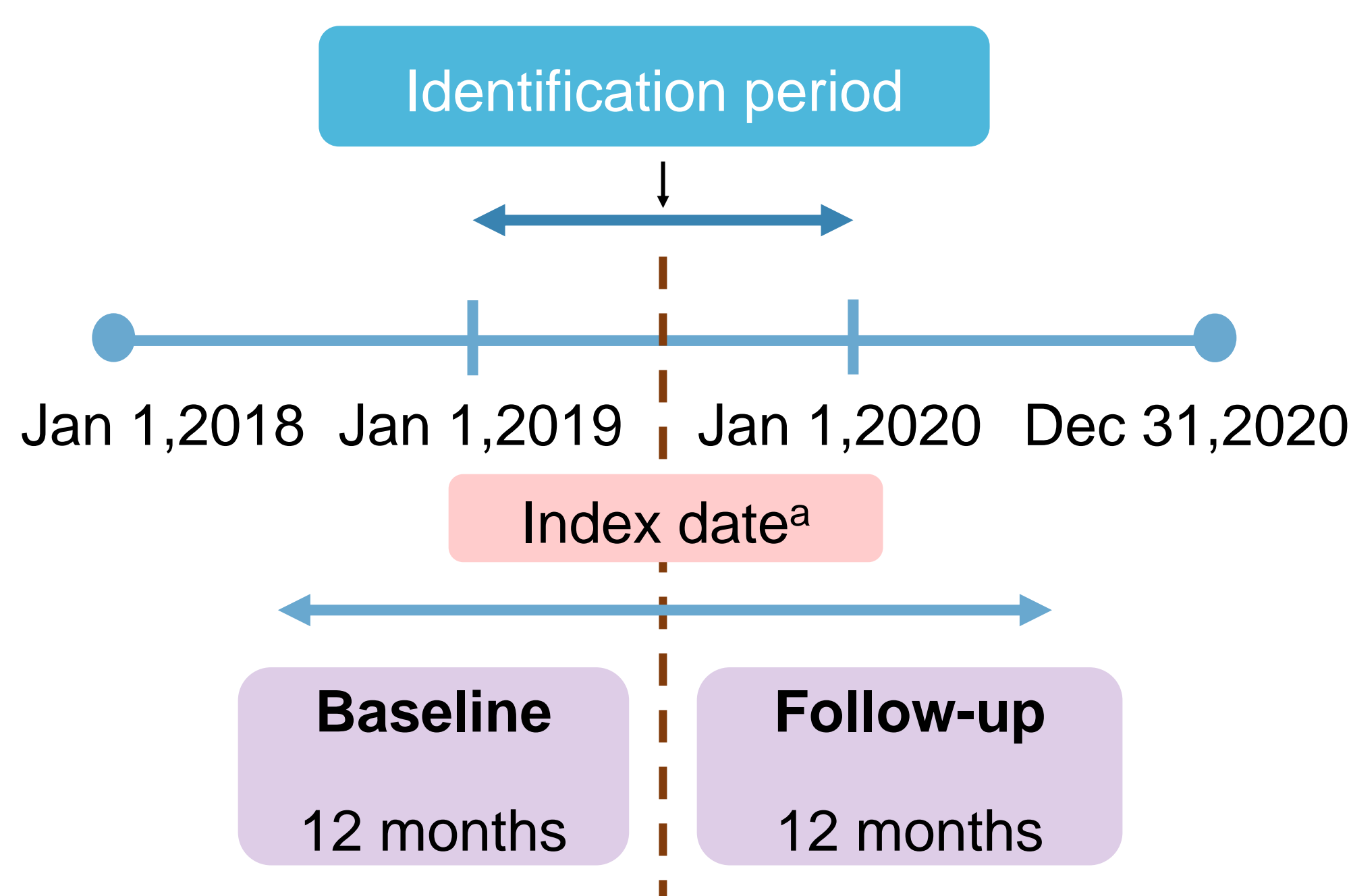
- This study aims to assess the treatment pattern and disease burden in adults with severe asthma in China.

METHODS

Data Source

Data were randomly extracted from the Urban Employee Basic Medical Insurance database (2018-2020) in a city in China, which covered nearly 7 million residents.

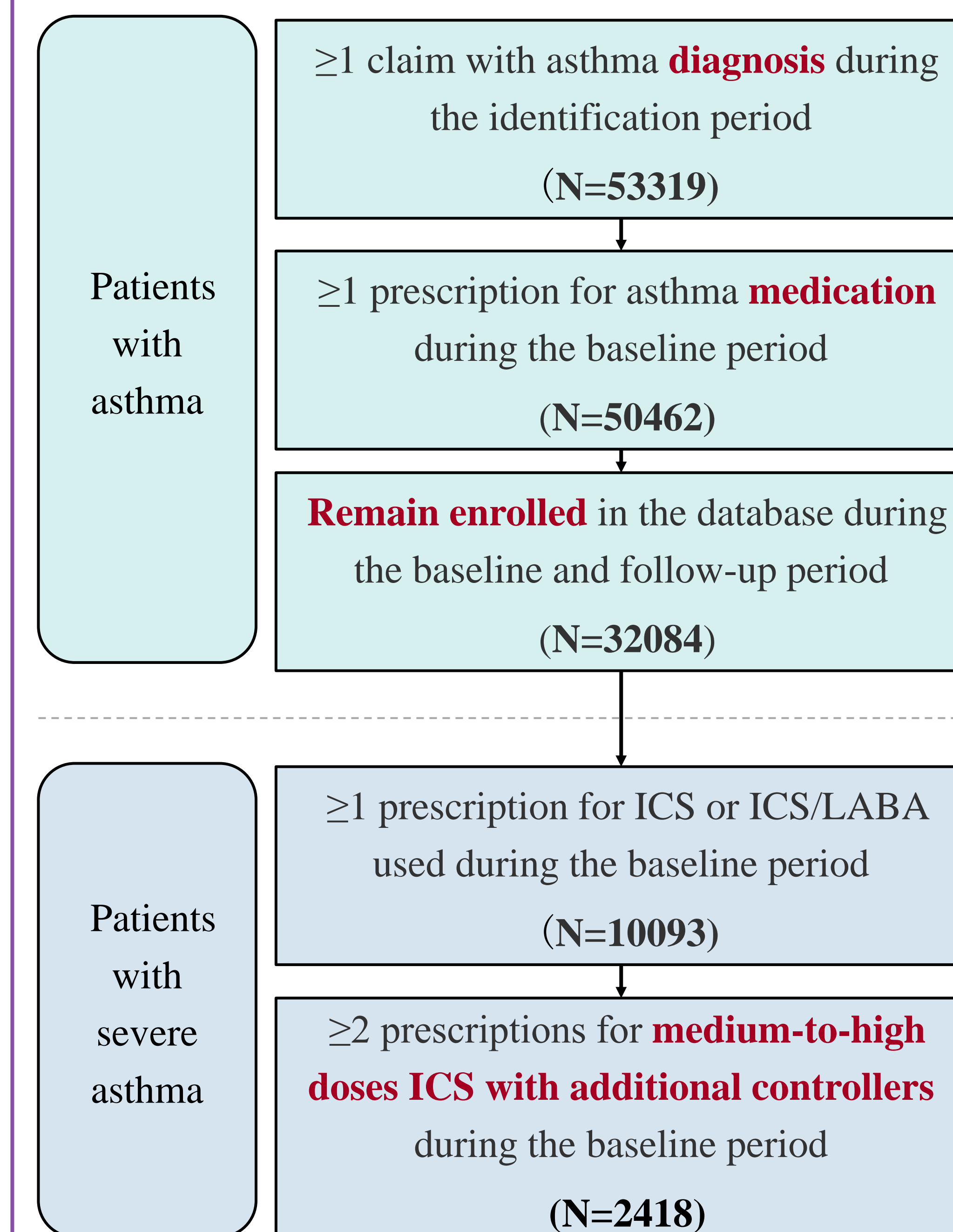
Fig.1 Overview of the study period



Study population

Patients diagnosed with asthma, who had **≥2 prescriptions for medium to high doses of inhaled corticosteroids (ICS)** along with additional controllers, were identified to represent severe asthma population in China.

Fig.2 Patient selection

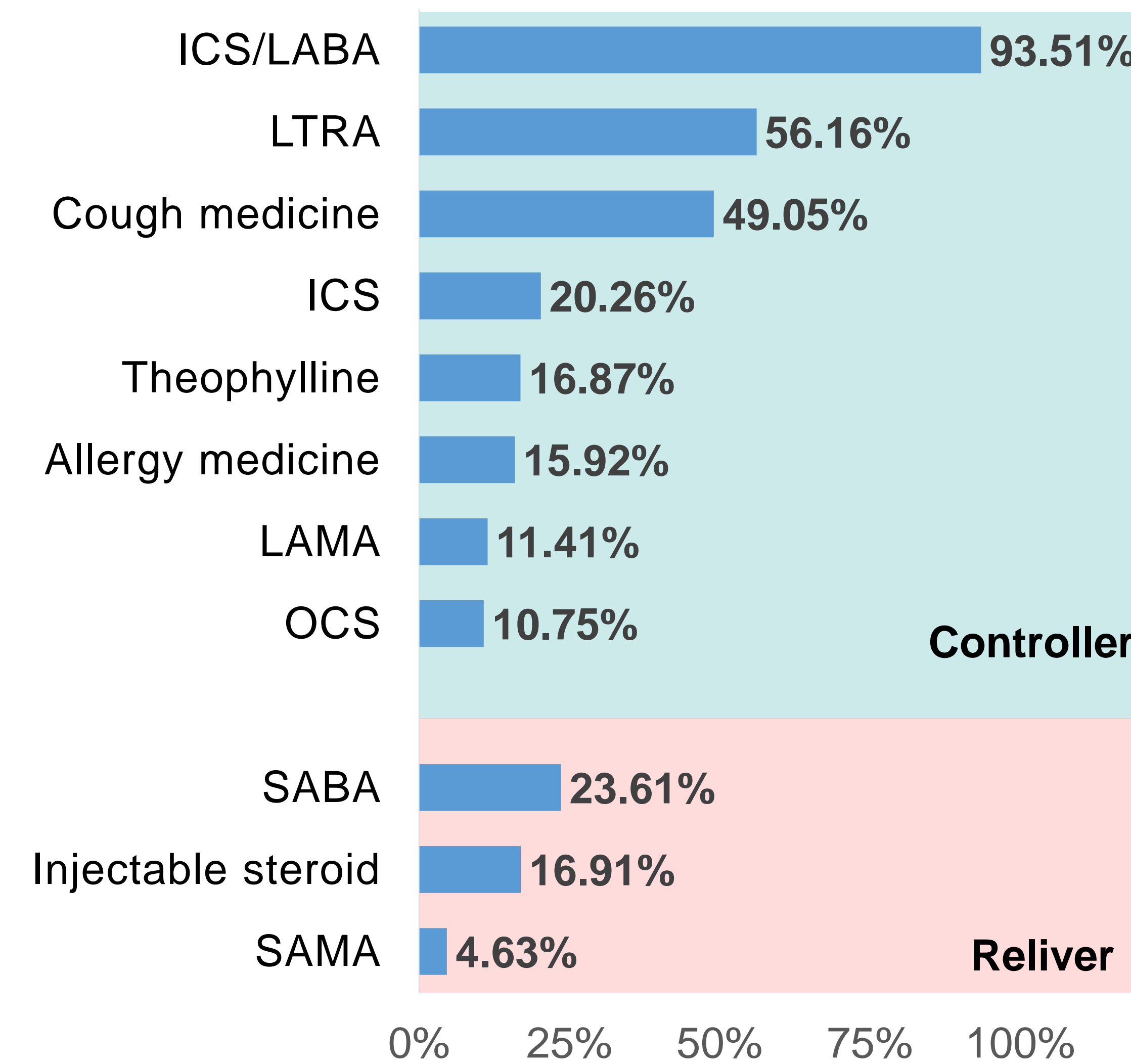


Measures

- Treatment pattern:** Medication for asthma treatment and medication adherence (estimated through proportion of days covered).
- Clinical prognosis:** Incidence and frequency of asthma exacerbation, all-cause mortality.
- Economic burden:** Asthma-related direct medical cost.

RESULTS

Fig.3 Proportion of asthma medication being used^a



Tab.1 Basic characteristics and costs

Variables	Total (N=2418)
Basic characteristics	
Age (mean, SD)	56.15 (14.39)
Female (N, %)	1073 (44.38%)
CCI (mean, SD)	2.55 (2.10)
Comorbidities (N, %)	
COPD	818 (33.83%)
Allergic rhinitis	771 (31.89%)
Osteoporosis	344 (14.23%)
Costs^a (Mean(SD))	
Total	2846.08 (4677.92)
Outpatient service	2632.86 (3643.90)
--Medication	2490.81 (3573.46)
--Examination	107.06 (312.67)
Inpatient	213.22 (2885.62)
--Medication	88.23 (1387.14)
--Examination	59.74 (766.17)

*Abbreviations: CCI, Charlson Comorbidity Index; COPD, chronic obstructive pulmonary disease.
a) Measured in CNY.

Treatment pattern

The most widely used medications for asthma treatment was ICS/LABA, which prescribed for **93.45%** of patients with severe asthma (Fig.3). Mean (SD) duration of OCS administration among OCS users was 82.73 (108.64) days, with **19.62% over 180 days**. For asthma control treatment, the mean (SD) medication adherence was **0.44**.

Clinical prognosis

10.67% of patients experienced ≥ 1 exacerbation and 3.93% experienced ≥ 2 exacerbations. The average frequency of annual exacerbations was **0.21**. The all-cause mortality was 1.16%.

Economic burden

The mean asthma-related annual cost was **CNY 2846.08** (Tab.2), The mean cost per exacerbation was CNY **1441.83**, among which requiring emergency, requiring systemic corticosteroids and **requiring hospitalization** were CNY 471.02, 502.82 and **10073.66**, respectively.

CONCLUSIONS

- This study shows the treatment pattern that **ICS/LABA is widely used**, while the biologic treatment is rarely used in China. The high medication cost, poor adherence to medication regimen, and high exacerbation frequency and cost reveal an unmet need to **more effective management and treatment**.