INTRODUCTION

- Asthma is a complex, heterogeneous disease that can be subdivided into numerous overlapping phenotypes based on the basis of clinical, pathophysiological, and inflammatory markers. Novel treatments including biologics have targeted immunological phenotypes within moderate-severe asthma.
- Lack of consistency in definitions of severity and control status among studies reporting the prevalence of various asthma phenotypes.

OBJECTIVES

- Assess the prevalence of asthma patient segments based on the definitions of control and severity using Global Initiative for Asthma guidelines (GINA) and identify gaps in literature.

METHODS

- A systematic review was conducted in PubMed and Embase to identify publications reporting prevalence of severe (GINA step 4 and 5) or moderate (GINA step 3) asthma patients and GINA asthma control (i.e., controlled, partially controlled or uncontrolled). Search was limited to studies published in English language, between 1999 and 2016, and assessing prevalence in adults and/or adolescents.

RESULTS

- Of 405 titles and abstracts screened, eight studies were included with six studies from Europe, one from Nigeria, and one was a multinational study.
- Across Europe and Nigeria, majority of patients (66%-84%) with uncontrolled asthma were severe asthma.
- In a study conducted in Germany in allergic asthma patients, 13% were severe (19% of whom were uncontrolled) and 29% were moderate (4% uncontrolled) asthma while in Spain, the prevalence of severe, uncontrolled asthma was 4% of all asthmatics.
- In Italy, 43% of patients with Asthma-COPD Overlap Syndrome (ACOS) had uncontrolled asthma.
- Detailed results from each study are reported in the table below.

DISCUSSION AND GAP ANALYSIS

- Moderate-severe uncontrolled asthma represent the highest clinical and economic burden and unmet needs.
- Literature reporting prevalence of asthma segments is sparse with inconsistent definitions and denominators.
- Gap exists in literature for prevalence estimates of various asthma phenotypes in key countries such as China, with a stable clinical representation.
- Robust real-world data are needed to determine and define phenotypes and their respective overlaps empirically to aid in mapping opportunities, unmet needs, designing trials, establishing care pathways, and defining payer and pricing policies.

STRENGTHS

- This is the first systematic review to comprehensively assess the global prevalence of various asthma phenotypes to the best of our knowledge.
- For each asthma phenotype available in the literature, we reported the estimates based on asthma control and severity.

LIMITATIONS

- Grey literature studies published in conferences were not assessed, which may have led to exclusion of epidemiological data.
- It is challenging to compare the prevalence estimates within phenotypes due to differences in population criteria, diagnostic tools, and country design.

REFERENCES


Study – Country - Phenotype

<table>
<thead>
<tr>
<th>Study design</th>
<th>Population</th>
<th>Diagnostic criteria</th>
<th>Prevalence reported</th>
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<tbody>
<tr>
<td>Cross-sectional, clinical epidemiological study in a nationally representative stratified prevalence sample of outpatients diagnosed with AA</td>
<td>Age 16-85 years</td>
<td>Documented asthma severity before the onset of specialty care according to the criteria of the GINA 2007 classification</td>
<td>Severe (Stage IV) Patients: 12/154 (8.5%)</td>
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