

Asthma exacerbation and steroid burden in Australian primary care

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Introduction/Aim:

The prevalence of asthma in the Australian population is 11%, well above 4% globally^{1,2}. The aim of the present study was to assess severe asthma exacerbations over a 12-month period in the Australian adult population living with asthma.

Methods:

Electronic medical records (EMR) and questionnaires from the Optimum Patient Care Research Database Australia (OPCRDA) were utilised. Primary care patients aged ≥ 18 years with a clinician diagnosis of active asthma were included in the current study. The primary outcome was severe asthma exacerbations (over a 12-month period), stratified by Global Initiative in Asthma (GINA) treatment steps.

Results:

EMR data from 7,868 diagnosed asthma patients was included, with 19% recording ≥ 1 exacerbation in the last 12 months. From the total cohort, a subgroup of 515 individuals completed the questionnaire. Of these questionnaire respondents, 32% self-reported ≥ 1 exacerbation. Increased exacerbation frequency was observed with greater treatment intensity (Table 1). 2% of patients had long-term oral corticosteroid (OCS) use documented in their EMR and 12% of questionnaire respondents reported using this to manage their condition.

Statistics:

Exacerbations in the Australian adult population living with asthma are presented as absolute values (%) and were descriptively assessed.

Table 1: Percentage of patients with ≥ 1 exacerbations in the previous year stratified by GINA treatment steps.

	Total cohort	Questionnaire cohort	
	EMR data	EMR data	Self-reported
GINA 1	353 (14%)	11 (10%)	28 (25%)
GINA 2	57 (16%)	7 (22%)	8 (25%)
GINA 3	257 (16%)	24 (22%)	32 (30%)
GINA 4	485 (23%)	32 (25%)	41 (33%)
GINA 5a*	335 (31%)	31 (40%)	39 (50%)
GINA 5b**	34 (27%)	13 (21%)	18 (30%)
All GINA categories	1,521 (19%)	118 (23%)	166 (32%)

*High dose inhaled corticosteroids; ** biologics or long-term oral corticosteroids

Conclusion:

There is a high exacerbation burden in Australian adults living with asthma. Self-reported exacerbation frequency and long-term OCS use was higher than what was observed in EMRs, suggesting there are a large proportion of Australian Adults who self-manage their exacerbations. Additionally, the high steroid and exacerbation burden in GINA 4 and 5a/b patients suggest more of these individuals could benefit from specialist referral if not already receiving specialist care.

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References

1. Australian Institute of Health and Welfare. 2019. Asthma Cat no ACM 38. Canberra: AIHW
Viewed 18th February 2021 <https://www.aihw.gov.au/reports/chronic-respiratory-conditions/asthma-monitoring-based-on-current-indicators/contents/indicators>
2. To T, Stanojevic S, Moores G, Gershon AS, Bateman ED, Cruz AA, Boulet LP. 2012. Global asthma prevalence in adults: findings from the cross-sectional world health survey. *BMC Public Health*, 12:204.

Key words

Asthma, exacerbations, oral corticosteroids, adults, Australia

Abbreviations

EMR - Electronic medical records; GINA - Global Initiative in Asthma; OCS - Oral corticosteroids