Asthma exacerbation and steroid burden in Australian primary care

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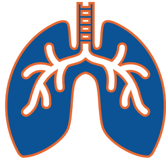
Speaker Disclosure

- In accordance with the policy of the Thoracic Society of Australia and New Zealand the following presenter has indicated that they have a relationship which could be perceived as a real or apparent conflict of interest. The nature of the conflict is listed:
- David Price has advisory board membership with Amgen, AstraZeneca, Boehringer Ingelheim, Chiesi, Circassia, Viatris, Mundipharma, Novartis, Regeneron Pharmaceuticals, Sanofi Genzyme, Teva Pharmaceuticals and Thermofisher; consultancy agreements with Amgen, AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Viatris, Mundipharma, Novartis, Pfizer, Teva Pharmaceuticals and Theravance; grants and unrestricted funding for investigator-initiated studies (conducted through Observational and Pragmatic Research Institute Pte Ltd) from AstraZeneca, Boehringer Ingelheim, Chiesi, Circassia, Viatris, Mundipharma, Novartis, Pfizer, Regeneron Pharmaceuticals, Sanofi Genzyme, Teva Pharmaceuticals, Theravance and UK National Health Service; payment for lectures/speaking engagements from AstraZeneca, Boehringer Ingelheim, Chiesi, Cipla, GlaxoSmithKline, Viatris, Mundipharma, Novartis, Pfizer, Regeneron Pharmaceuticals, Sanofi Genzyme and Teva Pharmaceuticals; payment for travel/accommodation/meeting expenses from AstraZeneca, Boehringer Ingelheim, Circassia, Mundipharma, Novartis, Teva Pharmaceuticals and Thermofisher; funding for patient enrolment or completion of research from Novartis; stock/stock options from AKL Research and Development Ltd which produces phytopharmaceuticals; owns 74% of the social enterprise Optimum Patient Care Ltd (Australia and UK) and 74% of Observational and Pragmatic Research Institute Pte Ltd (Singapore); 5% shareholding in Timestamp which develops adherence monitoring tech peer reviewer for grant committees of the UK Efficacy and Mechanism Evaluation programme, and Health Technology Assess was an expert witness for GlaxoSmithKline.

Asthma in Australia



11% prevalence, well above global estimates of 4%[1,2]

>70,000 annual emergency presentations[3]

Median of 2 OCS bursts annually for exacerbations[4*]

Defining the level of asthma control could help to reduce the burden of disease

Aims:

- **Primary aim –** Assess severe asthma exacerbations, as per GINA treatment intensity steps
- **Secondary aim -** Explore OCS prescribing patterns

1) AIHW, 2019, Asthma Cat no 38; 2) To T et al, BMC Public Health 2012, 12:204; 3) AIHW, 2017, Aust Hospital statistics, Cat no HSE 194; 4) McDonald VM et al, Respirology, 2019, 24:37.

*Australian patient's with severe asthma had a median of 2 OCS bursts for treatment of exacerbations in a 12-month period.

Methods

- EMRs and questionnaires from the Optimum Patient Care Research Database Australia (OPCRDA) were utilised*
- EMRs from primary care patients aged ≥18 years with a clinician diagnosis of active asthma were included** (**Figure 1**)
- The primary outcome was severe asthma exacerbations, over a 12-month period***
- Acute and long-term OCS prescription patterns were also explored

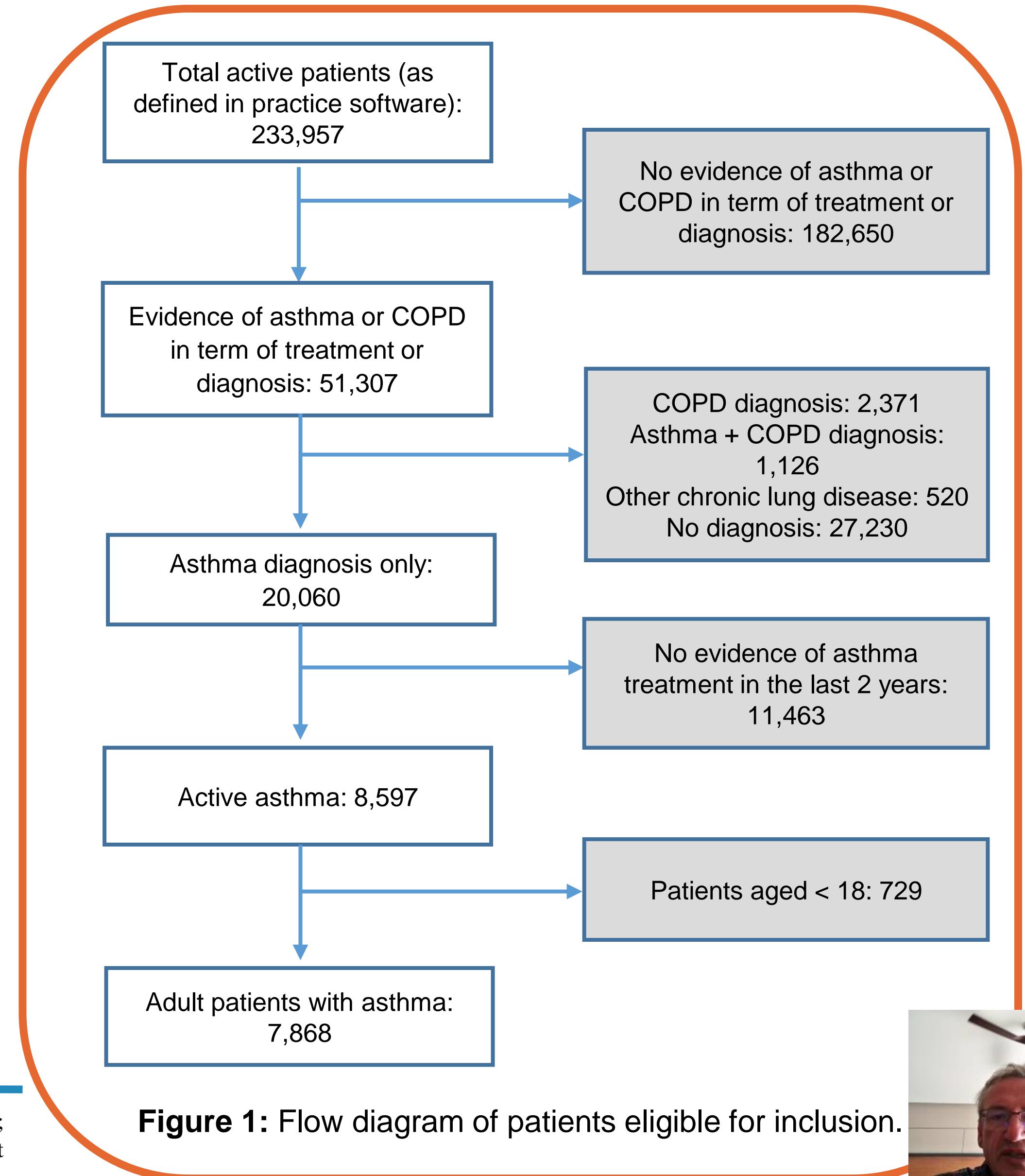


Figure 1: Flow diagram of patients eligible for inclusion.

*Questionnaires were conducted as part of quality improvement programs intended to assess the delivery of asthma care in primary care; **Patients were excluded if they had any chronic lung disease that wasn't asthma; ***Exacerbations were stratified by GINA treatment steps and a severe exacerbation was defined as needing a course of acute OCS (defined as ≥ 20mg per day), or a hospital admission

Results

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Exacerbation Frequency

- EMRs from 7,868 patients were utilised, with 20% recording ≥ 1 exacerbation in the last 12 months (**Table 1**)
- From the total cohort, a subgroup of 515 individuals completed the questionnaire. Of these respondents, 32% self-reported ≥ 1 exacerbation (**Table 1**)
- High exacerbation rates were observed in GINA 4, 5a and 5b treatment intensity groups (**Table 1**)

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

n (% of patients at GINA step)	Total cohort	Questionnaire cohort	
	EMR data	EMR data	Self-reported
GINA 1	353 (17%)	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%)

OCS Prescribing Patterns

- 17% of patients who required an acute course of OCS were issued repeat authorisations (**Table 2**)
- By comparison, 34% of questionnaire participants who required an acute course of OCS were issued with repeat authorisations, as documented in their EMR (**Table 2**)
- **3%** of all patients and **5%** of questionnaire participants used long-term oral corticosteroid (OCS) to manage their condition, as documented in their EMRs (**Table 2**)
- Self reported use of long-term OCS use was higher again with 12% of questionnaire respondents reportedly using this to manage their condition^

Table 2: Number of patients receiving OCS authorisations^^

n (% of patients in cohort)	Total cohort	Questionnaire cohort
	EMR data	EMR data
Acute OCS without repeats	1261 (16%)	78 (15%)
Acute OCS with repeats	260 (3%)	40 (8%)
Long-term OCS	268 (3%)	26 (5%)

*5a, patients prescribed high dose inhaled corticosteroids; ** 5b, patients receiving biologics or long-term OCS therapy; ^ When self reporting long-term OCS use patients were asked "Are you currently taking prednisolone tablets on a daily basis to help manage your asthma? (e.g. prednisolone tablets every day as a long-term arrangement as opposed to short courses. This does not include steroid inhalers)" ; ^^Data presented tracks number of patients receiving an authorisation not the quantity authorised

Conclusions

Australia

There is a high exacerbation burden in Australian adults living with asthma

The rate of exacerbations in GINA 4 and 5a patients suggest more of these individuals could benefit form specialist review

There are a large proportion of patients who self-manage their exacerbations

Issuing repeat OCS authorisations was a common occurrence and may contribute to over use in patients self-managing their exacerbations

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