



Editorial

Closing gaps in asthma care in India – World Asthma Day 2022

‘Closing gaps in asthma care’ is the theme that the Global Initiative for Asthma (GINA) has promoted for World Asthma Day 2022. We take the opportunity to shine a spotlight on a major gap in asthma care in India – the gap between the number of people with asthma in India who currently take inhaled corticosteroids (ICSs) and the number who would benefit (namely all of them).

Asthma is the most common chronic disease in children and adolescents globally and one of the most common chronic diseases in adults¹⁻⁵. Asthma is recognized by the World Health Organization (WHO) and other stakeholders as both cause and effect of poverty in low- and middle-income countries (LMICs)⁴⁻⁶. Children and adolescents with uncontrolled asthma miss out on education, adults on work opportunities and all are impacted by some combination of respiratory symptoms, adverse effects on health and well-being, costs of medication and exacerbations associated with emergency department visits, hospitalizations and even death^{4,5}. Around 96 per cent of global asthma deaths occur in LMICs⁴.

India has a high and growing burden of asthma: according to the Global Burden of Disease Report 2019, India ranks number one in the world in terms of burden, disability-adjusted life years and deaths related to asthma⁷. Over 34 million people in India have asthma, and although this reflects only 13 per cent of the world’s population with asthma, 42 per cent of global asthma deaths occur in India⁸. People with asthma in India also suffer a disproportionately high burden of day-to-day symptoms, effects on quality of life and absence from school and work^{9,10}. In low-income households, even minor levels of healthcare utilization can be financially catastrophic¹¹.

Although ICSs are the cornerstone of asthma treatment and are now recommended for all patients

with asthma because these dramatically reduce the risk of severe exacerbations and asthma-related death¹² the 2015 Asthma Insights and Management (AIM) survey found that fewer than a third of people with asthma in India used inhalers⁹. In common with the situation in other LMICs, when treatment for asthma was used, this was most likely to be oral medication including oral salbutamol, theophylline and prednisolone^{4,5,9}. Such substantial divergence from international asthma management recommendations leaves so many patients at risk of avoidable morbidity and mortality^{4,5,9}. For example, a study of 381 Indian patients receiving oral asthma medications found that almost one-third had a hospitalization due to asthma or asthma symptoms in the previous year¹³. In the 2015 AIM India survey, 89 per cent people with asthma reported using oral corticosteroids in the previous year, with an average of 10.5 courses⁹. Such high usage greatly increases the risk of serious long-term adverse effects such as cataract, osteoporosis and diabetes¹⁴.

Inhaled asthma treatments were developed over half a century ago and represent the safest, fastest and most effective way of delivering anti-inflammatory treatments and bronchodilators to where these are needed¹⁵. Furthermore, there is strong evidence that ICSs reduce asthma morbidity and mortality¹⁶⁻¹⁹. In turn, adequate asthma management brings economic benefits to individuals and their families²⁰. The gap between the number of people who would benefit and the number of people currently using ICS for the treatment of asthma in India is therefore of great concern. The magnitude of this gap was quantified in a recent study based on the estimated number of people with asthma in India from the Global Burden of Disease study and their estimated need for ICS, compared with the number of total ICS sales in India that were assumed to be for asthma. The authors quantified the

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gap between corticosteroid inhalers sold for asthma versus corticosteroid inhalers needed for the treatment of asthma in India as 26.4 million versus 384.2 million corticosteroid inhalers per year⁸. It seems likely that this gap explains the gap between the expected and disproportionately high death rates from asthma in India. It is a gap that needs to be filled urgently.

Apart from the social issues and the myths and misbeliefs associated with inhalation therapy²¹, one of the main reasons why people with asthma do not use ICSs in India is that primary care physicians themselves are not aware about the importance of ICS in asthma management. An estimated 90,000 modern medicine doctors graduate every year from 595 plus medical schools across India²². Unfortunately, most of the tertiary care teaching hospitals in India do not have ICS in their formularies²³, despite ICS being on the WHO's essential medicines list²⁴. Students are also not taught about the importance of inhalation therapy and are not well versed with the use of inhaler devices²⁵⁻²⁷. As a result, trainee doctors learn to prescribe oral medications for the treatment of asthma, including tablets of salbutamol and theophyllines, which then becomes the norm when they become primary care physicians. Teaching undergraduate medical students the importance of inhalation therapy and the importance of ICS in the management of asthma will help change clinical practice across India. To achieve this, every tertiary care teaching hospital must have ICS and ICS plus short-acting β_2 -agonist (SABA) or combination of ICS plus formoterol in the pharmacy for dispensing. The teaching curriculum should also focus on the importance and techniques for the use of inhaled medications. This one intervention may help bridge the gap for the underuse of ICS in asthma management and thereby help reduce asthma mortality in India.

As efforts are made to fill the gaping need for ICS for all with asthma in India, we suggest that there is a unique opportunity to do so in a way that avoids the risk of retracing the historical approach to asthma treatment in other settings. The conventional approach of starting treatment with inhaled SABA trains people with asthma to rely on its short-term symptom relief, and this reduces the likelihood that they will later be prepared, even if ICS is available and prescribed, to use it every day to address airway inflammation and reduce their risk of severe exacerbations and death²⁸. There is now robust evidence that treatment with a combination inhaler containing both ICS and formoterol [a fast-onset long-acting β_2 -agonist

(LABA)], taken whenever needed for symptom relief, reduces the risk of severe asthma exacerbations compared with using a SABA reliever, with similar levels of asthma symptom control, and with a lower overall dose of ICS; these benefits are seen both with as-needed ICS-formoterol alone, and with maintenance and reliever therapy with ICS-formoterol (MART)¹². A recent systematic review and meta-analysis of trials of as-needed ICS-formoterol in patients with mild asthma found that severe exacerbations were substantially lower with ICS-formoterol compared with as-needed SABA [odds ratio (OR) 0.45; 95% confidence interval (CI) 0.34-0.60²⁹. Further, as-needed ICS-formoterol reduced the risk of emergency department visits and hospitalizations compared with daily ICS plus as-needed SABA (OR 0.63; CI 0.44-0.91)²⁹. Similarly, a systematic review and meta-analysis of trials of ICS-formoterol for maintenance and reliever therapy found that with this approach, severe exacerbations were considerably lower compared with the same maintenance dose of ICS-formoterol (relative risk 0.68; 95% CI: 0.58-0.80)³⁰. In light of this evidence and safety concerns about inhaled SABA monotherapy, GINA now recommends ICS-formoterol as the preferred reliever for adolescents and adults with asthma, with (Steps 3-5) or without (Steps 1-2) maintenance ICS-formoterol¹².

There is an urgent need to fill the gap between the number of people with asthma who take ICS and the number who would benefit in India. The same holds true for other LMICs where inhaled medicines are poorly available and largely unaffordable³¹. The ICS-formoterol inhaler-based approach has the potential to transform asthma care in India by becoming the standard of care and by avoiding SABA-only treatment. Closing the gap in actual versus expected morbidity and mortality from asthma in India would help lead the way for other LMICs where this gap is also unacceptably wide.

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