



Asthma: Advances in Management

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Asthma is one of the common chronic conditions in children requiring regular clinic visits and potential hospital admissions. Poorly controlled asthma leads to significant morbidity and mortality. Ongoing research has led to a better understanding of epidemiology, pathophysiology, and disease mechanisms leading to better treatments. The spectrum of disease is variable and can change over the time. Over the last few decades it is increasingly clear that asthma is not a single disease, rather a syndrome that includes multiple phenotypes and endotypes and hence, a single treatment guideline may not be applicable to all patients. We are moving towards personalized medicine in asthma care. In this issue of the journal, Part 2 of the special symposium on asthma focussing on advances in management of acute and chronic asthma is published.

The treatment for asthma is largely given by inhalation route and remains the mainstay of pharmacotherapy. This direct administration of the drug into the airways using optimal drug dosages has minimal side effects when used properly. However, we are aware that in children, getting aerosolized medicine deposited in smaller airways is a challenge, and hence of the need to use the correct medication and the appropriate device. The wide selection of medications and devices may complicate clinical decision-making. Clinicians who manage children with asthma should have a good understanding of inhaled medications and devices commercially available and this will help them select the right medication and device for the right patient. A review by Thomas and Pugalenthi provides an overview of mechanisms and physiological basis of inhaled therapy, commonly used inhaled therapies, and the advances in the field of inhaler devices including emerging technologies [1].

Acute asthma is one of the important pediatric emergencies which, if managed appropriately, may reduce need for admission in ward or PICU and also prevent deaths. Having a standardized approach to management of acute asthma is important in achieving a goal of having zero tolerance towards exacerbations. Mahesh and Ramamurthy provide evidence-based pathways and a stepwise approach for management of acute asthma in the home, outpatient, emergency, and intensive care settings [2].

Long-term management of asthma has evolved from inhaled corticosteroids to more personalized therapy in recent years. Recent evidence suggests that using short-acting beta-2 agonist (SABA) alone may cause more asthma exacerbation and it is suggested that single maintenance and reliever therapy (MART) may be better. Other emerging evidence is personalized therapy based on phenotype (clinical presentations) and endotypes (distinct intrinsic mechanistic pathways) of asthma. Various add-on therapies like tiotropium and biological agents have been approved for use in a subset of children with severe asthma. Jat and Gupta summarize the recent advances in the management of asthma [3].

Each asthma exacerbation should be considered as an acute lung attack and should prompt efforts to reduce future exacerbations using appropriate treatments. Following an exacerbation, there is an opportunity to prevent future attacks by assessing compliance and optimizing asthma control. Careful questioning will allow physicians to identify asthma triggers and barriers to good asthma control and understand health beliefs or socioeconomic obstacles that may have contributed to the acute attack. Jones et al. discuss various challenges and opportunities to identify and prevent future asthma attacks and improve quality of life [4].

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Declarations

Conflict of Interest None.

References

1. Thomas B, Pugalenti A. Currently available inhaled therapies in asthma and advances in drug delivery and devices. *Indian J Pediatr.* 2022. <https://doi.org/10.1007/s12098-021-03976-2>.
2. Mahesh S, Ramamurthy MB. Management of acute asthma in children. *Indian J Pediatr.* 2022. <https://doi.org/10.1007/s12098-021-04051-6>.
3. Jat KR, Gupta A. Recent advances in long-term management of asthma. *Indian J Pediatr.* 2022. <https://doi.org/10.1007/s12098-021-04060-5>.
4. Jones H, Lawton A, Gupta A. Asthma attacks in children—challenges and opportunities. *Indian J Pediatr.* 2022. <https://doi.org/10.1007/s12098-021-04069-w>.

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