



Editorial

Awareness about childhood asthma

Asthma is increasing worldwide secondary to both increasing access to healthcare with more and more asthma recognition and to urbanization. Asthma in children is different from adult with multiple phenotypes and variable natural course. It is frequently underdiagnosed and undertreated that result in poor quality of life in children and their parents. Asthma in children has significant socio-economic impact on the families because of direct treatment cost and indirect cost due to missed school days, hospitalization and lost days in parent's job¹.

The prevalence of asthma is increasing with time. As per International Study of Asthma and Allergies in Childhood (ISAAC) Phase Three (survey of about 1.2 million children from 233 centres in 98 countries including India between 2000 and 2003), the prevalence rates of current asthma in 13-14 and 6-7 yr age groups were 14.1 and 11.7 per cent, respectively². The asthma prevalence in Indian subcontinent in the age group of 13-14 yr male and female was 8.6 and 5.4 per cent, and in the age group of 6-7 yr male and female, it was 7.4 and 6.1 per cent². In ISAAC Phase One, the prevalence rates of asthma were 4.5 and 3.7 per cent in the age group of 13-14 and 6-7 yr, respectively, suggesting marked increase in asthma prevalence over time³.

A hospital-based study from Bengaluru, India, had shown steadily increase in asthma prevalence in children below 18 yr of age; the rates were 9, 10.5, 18.5, 24.5 and 29.5 per cent in year 1979, 1984, 1989, 1994 and 1999, respectively⁴. This increase in asthma prevalence may be due to demographic changes over the time as suggested by increase in industries, increase in pollution and increased automobiles along with increased air population⁴. In the same study, the prevalence of asthma was more in urban children as compared to rural children; 16.6 versus 5.7 per cent⁴.

In ISAAC Phase Three, prevalence of asthma was higher in high-income country, whereas severe asthma tended to be more in low-income countries⁵.

Significant advancement has occurred over the past few decades in making a diagnosis and management of asthma. As of now asthma cannot be cured but can be controlled with pharmacologic and non-pharmacologic treatment, both are equally important to improve the outcome. The pharmacologic treatment includes controller and reliever medications, and majority of medications are administered by inhalation route given as aerosols using various devices. Non-pharmacologic treatment consists of environmental control and reducing important triggers. The outcome depends on good adherence and proper administration of inhaled medications. Since treatment is prolonged the subjective well-being may lead to reduced compliance to medications. To obtain good adherence, proper inhalation technique for adequate deposition in peripheral airways and optimal environmental control, it is most important to make parents partner in the management of asthma in children. Therefore, it is important that parents are aware of asthma, medications and control of environment.

Poor control of asthma is because of poor adherence to therapy, parental misconceptions, variable childhood phenotypes, improper use of drug and devices and variable asthma management practices⁶. Lal *et al*⁷ from Chandigarh, India, interviewed parents of 85 asthmatic children and found that nearly 50 per cent hesitated accepting diagnosis of asthma for their children; 35.3 per cent felt asthma as lifelong illness; 36.6 per cent considered asthma as contagious disease; 14.1 per cent believed asthma due to supernatural effects; 88.2 per cent felt food items as precipitating factor for acute exacerbations; 65 per cent felt that asthma may be cured

with alternative systems of medicine and 30.6 per cent believed that modern drugs can cure asthma. In the same study, authors found that 91 per cent parents were unaware of adverse effects of asthma drugs⁷. Majority of parents know that bronchodilators should be used at home when there is exacerbation, and the treating physician is main source of asthma knowledge⁷. An interview-based study from Delhi in 20 children with asthma and their parents found that majority of parents were not aware of asthma diagnosis till they visited a specialist; 40 per cent believed that it was fate of child; 40 per cent parents were worried about adverse effects of inhaled and oral steroids and felt that inhaled medications were habit forming; about one-third used alternative medicine for their child; majority of parents revealed problem of affordability of asthma drugs; nearly half considered asthma as stigma and did not reveal child's diagnosis to grandparents, friends and child's teachers; parents of girl patients felt asthma diagnosis as hindrance of girl's marriage in future; 85 per cent told that schools had no facility to treat acute exacerbations; majority of parents felt that respiratory specialist rather than general practitioners explained better the drug dosage and inhaler technique; none had written action plan though half knew verbal action plan; one-third expressed dissatisfaction for waiting period to consult doctor in public hospital and finally, child was involved in discussion very rarely⁸. In the same study, most children revealed that they cope well with asthma and were familiar of inhaled medications; nearly half were hesitant in using inhalers in front of others; 75 per cent children accepted that they need repeated reminders from parents to remain compliant with asthma medications⁸. In Western countries also, there is poor interaction between asthmatic children, their parents and treating physician. Sleath *et al*⁹ reported that only 13 per cent children and 33 per cent parents/care-providers asked questions regarding asthma management to treating physician during their consultation visit. It is universal observation that most of the parents have a poor understanding that asthma is a non-curable chronic disease and have a lack of knowledge about benefits of long-term inhaled medications. They often fail to understand correct technique to use inhaled medications that results in poor control in asthma and they lose faith in treating physician and asthma medications⁶. It is difficult to ensure medication adherence in adolescent age group, especially when parent's supervision decreases¹⁰. There are also reports of poor adherence of physicians and paediatricians to well-defined guidelines for treatment

of asthma, and there is both under- and overdiagnosis of asthma¹¹. School teachers often have a lack of knowledge about asthma⁶. Detailed counselling at diagnosis and at the time of starting inhaled steroids is very important to ensure compliance to asthma medications. At the same time, emphasizing asthma facts and checking drug and device technique at every visit are equally crucial to keep asthma under control in children.

Air pollution is a human-made problem and creating awareness about its health effect may help in improving control of asthma. Air pollution is linked to increased asthma morbidity. High prevalence of asthma in schools in heavy traffic area as compared to low traffic area has been documented⁴. Similarly, an inverse relation was documented for current asthma with levels of particulate matter $\leq 10\mu^2$. Fluctuations in atmospheric ozone and sulphur dioxide have been found to be strongly associated with attendance of children to emergency department because of wheezy episodes regardless of season, temperature and wind speed¹².

All these observations indicate that there is a need to create awareness about asthma amongst population and specifically to parents having children with childhood asthma. Awareness can be created at multiple levels. First and foremost is to educate parents when their child is diagnosed as asthma. The treating paediatrician should explain about illness, need for regular inhaled medications, environmental control and regular follow up. It is responsibility of paediatricians to give positive information about control and allay anxiety about illness, dispel myths and explain non-pharmacologic measures including environmental control. Educating parents and making them aware about improved outcome of asthma with proper treatment will go a long way. It is equally important to create awareness about various aspects of asthma including triggers amongst school teachers, community leaders and policymakers. Awareness amongst teachers may create awareness amongst students¹³. School-based asthma educational programme for teachers can significantly improve teachers' knowledge of asthma and their competence in providing asthma-related first aid interventions during emergencies¹⁴. Awareness about asthma triggers, specifically environmental pollution, should be created amongst community leaders and policymakers. Awareness of community leaders and policymakers may be created by organizing public lectures, articles in newspapers, using electronic media, *etc*¹⁵. To increase awareness about the precautions and

preventions of asthma amongst public, Global Initiative for Asthma (GINA) celebrates World Asthma Day all over the world every year on the first Tuesday of the month of May. Publicizing information about common manifestations, diagnosis and management algorithms may play an important role in improving awareness and management of asthma.

To conclude, asthma is common in childhood and it is underdiagnosed and undertreated. The awareness amongst parents of asthmatic children is suboptimal with various myths and taboos. There is a need of well-planned education tool to improve quality of these young asthmatics that should target children themselves, the parent and careproviders, the service providers and other organizations such as schools and scientific bodies. This knowledge gap should be area of concern and research for all health professionals involved in care of asthmatic children. At the same time, a policy should be adapted for periodical training of healthcare professionals dealing with asthmatic children to make them abreast with recent evidence-based guidelines.

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