PRESIDENT'S PAGE

'Clearing' Pediatric Airways

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Let's look at a common case-scenario. A two-year-old presents with recurrent episodes of fever, cold, cough and wheezing since the age of 6 months. Each time, the episode begins with high fever that lasts for 2 to 3 days, accompanied with cold and progressively worsening cough, followed by wheezing. Wheezing settles down within a short time but the cough continues for two weeks. Routine investigations are normal. The child remains well in between episodes, and maintains good growth and development. No one in family has history suggestive of asthma or atopy. The child receives repeated courses of antibiotics and inhaled steroids for 3 months, but there is no change in frequency of episodes. Each and every time pediatrician's '*mann ki baat'* rotates around questions like…Is it viral?...Is it bacterial?...Can I label it as asthma?...*Kahin ye 'woh' toh nahin?* (Tuberculosis!)... finally realizing that it is Wheeze Associated Lower Respiratory Infection (WALRI)!

Respiratory complaints are the commonest reason for visits by our young patients to us (barring well baby visits of course). The disease pattern presenting to the pediatricians ranges from self-limiting upper respiratory tract infection (URTI) to severe complicated pneumonia; and with acute, sub-acute, recurring, relapsing, or chronic presentations. Pediatricians face problems and difficulties in diagnosing, investigating and treating wide range of respiratory illnesses. 'Clearing Pediatrics Airways' is a program under Indian Academy of Pediatric (IAP) Action Plan 2016 wherein the general pediatrician has a chance to revise, refresh and review the knowledge about the conditions (common as well as not so common) affecting a child's respiratory system. The aim is to 'clear' the confusion while dealing with congested and irritated respiratory tracts of children, and remove the 'hypoxia' of ignorance.

Recurring respiratory symptoms is a common problem that a pediatrician faces in a busy clinic. Do all such children warrant a battery of investigations and treatment, including antibiotics? A pediatrician needs to be aware that 6-8 episodes of acute respiratory infections (most of which are simple cold and cough) are a normal phenomenon in preschool- and school-age [1], and one needs to counsel the anxious parents that there is nothing wrong with the child's immunity. They must be clearly told that there are no drugs which 'build' or enhance immunity. At the same time, the conditions which are likely to increase the frequency of these episodes need to be borne in the mind. Conditions like allergic rhinitis and obstructive sleep apnea need to be picked up in time. Subtle clues to identify rare disorders like immunodeficiencies or ciliary dysfunction are also important in such situations. Parental counseling forms the main stay of approach in the management of majority of URTI as the episodes tend to recur in the first five years of life. Recurring URTI may be benign in nature, while recurring lower respiratory tract infections (LRTI) may have significant underlying diseases. Evaluation of a patient with respiratory tract infection calls for a detailed history encompassing the source of infection (for example, another child in the family), onset of the disease (for example; sudden onset of high grade fever in the viral URTI, disappearance of fever followed by troublesome cough as in acute viral URTI), detailed information on host factors including nutrition, growth, and immunization status, or valuable information about the environmental factors such as parental smoking, day-care admissions, bottle feeding and hand-hygiene practices.

Under-five children presenting with a wheeze is a conundrum that we commonly find ourselves in. We need to remember that almost 50% of children wheeze in the first three years while only 20% will experience continued wheezing. The common and often asked questions which one has to answer are 'Is it asthma?; Does he/she need a controller?; What is the long-term outlook?' For answering these, we need to find out if the child is a transient wheezer, or is going to have a persistent wheezing. From the days of residency, we have been listening to the dictum – All that wheezes is not asthma. History of a forgotten episode of choking (foreign body aspiration), and a close contact with patient of pulmonary tuberculosis needs to be elicited. One has to really be a '**W**heezard' while dealing with a child with wheeze, and

have the knowledge as to **W**hat age did it begin…**W**ay it took forward…Whether it is **W**ALRI...Is there **W**eight gain…Are there any **W**eird findings like clubbing…**W**hether the wheeze is generalized or localized, and **W**aiting till getting enough proof before putting a child with recurrent respiratory symptoms on anti-tubercular therapy. One must remember that any recurrent wheeze that is not getting controlled warrants search for alternate diagnosis.

Sizeable number of our patients have problems ranging from leaky nostrils to itchy rashes, and from sneeze to wheeze. The prevalence of allergic diseases is increasing worldwide, in both developing and developed countries. Allergic rhinitis (AR) is an important co-morbidity with asthma; 30% of patients with AR have asthma, and 80% of those with asthma have AR. The four major cardinal symptoms of AR are sneezing, nasal itching, rhinorrhea and congestion. AR and asthma share common allergens. Proper treatment of AR along with allergen control improves control of asthma.

The approach and management of asthma is a dynamic science. This is best illustrated by updates in the recent Global Initiative for Asthma (GINA) guidelines, which now emphasize on individualizing patient management not only by using genomics or proteomics, but also with 'humanomics', taking into account the behavioral, social and cultural factors that shape outcomes. When we have a child with asthma, we are inflicting five shocks to the family – the child has *asthma*, we will treat with *inhalers*, the preventers are *steroids*, the treatment is *long-term*, and we can at the best control as there is *no cure*. Time is what parents need second to our expertise, and the time spent is directly proportional to the success in therapy and disease outcome. For each of the shock, we have five shock absorbers! We get them to **Accept** the diagnosis of asthma, we get them to **Agree** to the line of treatment, we get them to **Adhere** to the treatment planned, we get them to recognize an **Acute** attack and home management, and we teach them to identify and **Avoid** triggers. One must remember these five '**A**'s of counseling in Asthma.

The itch to write an antibiotic for a child (or more commonly a parent) is one that needs to be avoided. In this era of antibiotic resistance, and when hardly any new antibiotic has been discovered in the last many years, rational antibiotic therapy is definitely the need of the hour. Understanding that only a few upper respiratory conditions like acute bacterial tonsillitis or sinusitis warrant antibiotic treatment, is of utmost importance [2]. Once the need for antibiotic is confirmed, the choice, route and appropriate dosage is of paramount importance. A haphazardly chosen antibiotic like cefixime for bacterial tonsillitis will not only contribute to the emergence of resistant strains but the child will also not improve, resulting in the parents losing faith in the doctor. A simple drug like amoxicillin may be sufficient in most of the respiratory infections in our day-to-day practice. Also, if the appropriately chosen antibiotic does not seem to be working, rather than changing the antibiotic at the drop of the hat, possibility of wrong diagnosis and/or complication needs to be considered. To alleviate symptoms of cough, a large number of formulations are available and the pediatrician is often tempted to prescribe one or the other of these, many a times just for the satisfaction of the anxious parents. There is nothing like a cough- and cold-remedy for children below six years of age. There is no true suppressant or expectorant. There is a general consensus amongst experts that these medicines have hardly any role in improving the symptoms, and may in fact have many undesirable effects, especially in young children. In rare situations, when a child becomes exhausted, or has insomnia or repeated vomiting due to cough, a safe cough suppressant may be justified. Many a times, simple demulcent syrups (not containing alcohol) soothe the throat and may provide some relief from cough.

Childhood tuberculosis (TB), in spite of all efforts remains difficult to diagnose and confirm. Some clinicians tend to overdiagnose it in any child with recurrent respiratory symptoms. At the same time, an over-enthusiastic newbie may completely miss a case with atypical presentation in his overzealous effort to isolate the *Mycobacterium tuberculosis*. The lack of an accurate diagnostic test for TB in young children is a major challenge, and adds to the potential for both under-diagnosis and over-diagnosis [3]. With these practical problems in mind, a relatively easy to follow algorithm for diagnosis of childhood TB can be followed. The IAP module covers special situations like BCG adenitis, drug toxicity and chemoprophylaxis, and also highlights simple techniques such as induced sputum and gastric aspirate for better chances of isolation of the organism.

Respiratory emergencies are the commonest emergencies faced by a pediatrician. When to call it respiratory distress or respiratory failure – is a common question in the minds of many. Rapid assessment of respiratory distress and triaging is the need of the hour. Even upper airway emergencies like croup, or laryngospasm due to anaphylaxis can be life threatening, and identifying them goes a long way in early and appropriate management. The do's and don'ts in acute severe asthma and other non-respiratory conditions presenting as respiratory emergencies are crucial, and can make a difference between life and death.

The knowledge of inhalation therapy and oxygen administration still needs to be upgraded for many of us, as errors can result in failure of therapy and can prove very costly. It has become a common practice to offer nebulization (like a welcome drink) for any respiratory disease, including URTI! Nebulization is to be used for an acute episode of asthma. Even in asthma, it is recommended in a hospital setting for severe exacerbation. In mild-to-moderate exacerbations, spacer with mask is as effective as nebulizer, and should be preferred. Indoor children with respiratory distress due to etiology other than asthma are also commonly nebulized for prolonged period without any justification. We also have to be rational in using the medications for nebulization therapy, and have to be specially vigilant about doses and schedule while using preparations with a combination of drugs. The cleanliness and sterility of devices used for nebulization and oxygen therapy also warrants attention. Ideally a new mask should be used for each patient to avoid cross-infection. Nebulization without oxygen may increase hypoxia in a sick child. Nebulizing solution should always be diluted with normal saline, and never with distilled water, as is practiced many times, particularly at home. Many times wrong dose is administered because of confusion between respule and 'nebulizing solution.' Nebulizing with saline for common cold or a blocked nose is irrational.

While pneumonia, including that caused by *S. pneumoniae*, is a major threat to child health and survival, it is also preventable. We have the tools to significantly reduce pneumonia morbidity and mortality in India, using a comprehensive approach recommended by the WHO/ UNICEF Integrated Global Action Plan for the Prevention and Control of Pneumonia and Diarrhoea that incorporates protection, prevention and treatment, which includes breastfeeding and vitamin A supplementation, vaccines and improved indoor air quality, in addition to treatment with antibiotics and oxygen [4]. With the support from the Global Alliance for Vaccines and Immunization (GAVI), vaccines are now becoming increasingly available in the poorest countries. Pneumococcal conjugate vaccines (PCV) have been shown to be a critical tool for pneumonia prevention and control around the world, and more than 130 countries have introduced PCV in their national immunization programs. The Government of India recently joined more than190 countries in introducing *Haemophilus influenzae* b (Hib) vaccine. However, PCV is not yet a part of India's Universal Immunization Program.

World Pneumonia Day is observed on 12th November. This year's theme — 'Keep the Promise. Stop Pneumonia Now' – focuses on the intersection of pneumonia and the Sustainable Development Goals (SDGs). We have an opportunity to keep the promise of the SDGs by stopping pneumonia and saving thousands of young lives. Let's work together to send a strong message – we can keep the promise of the SDGs by working together to improve child health. Too many young lives are at stake to ignore this silent killer.

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