Practical Approach to Recurrent Respiratory Infections

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Abstract. Respiratory diseases are a major cause of morbidity and mortality in developing countries. Recurrent respiratory infections in children pose a great challenge to the pediatrician where he has to exercise his clinical acumen and methodical approach for correct diagnosis and treatment.

It is a fact that children should suffer 7 to 8 upper respiratory infections per year until they are 5 years of age when their immune status reaches adult level. In this situation, it is essential to find out whether the frequencies are abnormal. Whenever a child has the following problems, then only it needs to be investigated. - (a) repeated bacterial pneumonias; (b) a child less than 3 months old having repeated respiratory infections; (c) a child of 9 months old without a history of exposure infections; (d) infections complicating into bronchiectasis and; (e) in a child where there is no history of allergy or asthma.

Once the problem is established as a true recurrent respiratory infection, the clinician should pose questions—whether it is chronic, acute or recurrent, to find out the site of pathology, seriousness of the problem, response to previous medications, to establish the possible diagnosis which fall into six categories—congenital anomalies, aspiration syndrome, genital disorders, immunological diseases, immune deficiency disorders and allergic diseases.


Key words : Respiratory infection; Recurrent respiratory infections in children; Pediatric pulmonary problem; Differential diagnosis of respiratory infection.

Respiratory diseases are the major cause of morbidity and mortality in children in India. 40-45% of outpatient visits, 30% of hospital admissions and 50% of emergency admissions in intensive care units are due to respiratory infections and asthma.

The lung defence mechanisms involves:
A. Surveillance mechanisms - Anatomic barriers like nasal turbinates, airway angulation, tracheobronchial secretions, mucociliary clearance, nonspecific cellular defences like alveolar macrophages and neutrophils.
B. Immune mechanisms - like antibody mediated immunity and cell mediated immunity.

Any interference or deficiency in these natural defence of the lung can predispose to recurrent or sometimes chronic respiratory diseases.

Recurrent respiratory infections pose a challenge to the physician which needs a methodical approach to solve the problem.

1. Is the problem an acute, chronic or recurrent one?

Some diseases are self limited and others run a protracted course. Dr. Williams W Waring arbitrarily divided the respiratory tract infections as acute if the duration is less than 3 weeks; subacute if 3 weeks to 3
months and chronic if the duration of illness is more than 3 months. Recently, with newer diagnostic techniques, the duration is lessened and anything more than 3 weeks is chronic. Currently expert committee suggests that any cough more than 10 days needs to be considered as chronic especially if it is asthma.

On the other hand, if any disease has a significant discontinuity of signs or symptoms, the disease is presumed to be "recurrent". In such cases a factor predisposing to recurrence should be searched for. Such as congenital anomalies, allergy, immunologic incompetence or inherited diseases. The closer the symptoms or signs are to birth, the greater the possibility of inherited disease or a congenital malformation.

2. Is it abnormal in frequency which needs investigations?

It is an observed fact that children should suffer from 7-8 upper respiratory infections per year until they are 5 years old, when the individual immune status reaches adult level. If the growth pattern of the child is normal, usually we observe with reassurance to the parents. However if a child has the following problem, it needs to be investigated-Repeated bacterial pneumonias, repeated respiratory infections in a child of less than 9 months, when there is no history of exposure to infections complicating into bronchiectasis, and absent family history of allergy and asthma.

3. Where is the site of pathology and can it be classified as obstructive or restrictive lung disease?

Clinical data, pulmonary functions and blood gases can help identifying the site of pathology. Upper airway problems from nose to thoracic inlet has inspiratory stridor, severe retractions and depending on the pitch of the sound, one can identify the site of pathology. The pitch of the sound increases as the pathology descends, with subglottic obstruction having the high pitched sound.

Intrathoracic extrapulmonary airways diseases has combination of inspiratory and expiratory problem (stridor + wheeze) and retractions. Intrathoracic intrapulmonary airway obstruction has expiratory wheeze as a predominant feature with retractions. Parenchymal diseases having predominant restrictive features have tachypnea, grunting. In infants where the compliance of chest is low, high airway resistance and pliable chest cage as well as retractions can also be there. In some children both the obstruction to the airway

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