

Upper Respiratory Tract Infections (Including Otitis Media)

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KEYWORDS

- Evidence based • Rhinosinusitis • Pharyngitis
- Otitis media • Management

Upper respiratory tract infections (including otitis media) are the most common illnesses affecting children.¹ On average, children experience around six to eight upper respiratory tract infections (URTIs) each year.² Although these infections usually are mild and self limiting, they occasionally lead to complications that can be life threatening. Most URTIs can be placed within three main categories of infection: rhinosinusitis, pharyngitis, and otitis media. Within each category of illness there is a range of related conditions that may have similar or overlapping clinical presentations.³ Some judgment is required in determining which part of the respiratory mucosa is most affected. In this article, the term “rhinosinusitis” is used to describe illnesses with predominantly nasal symptoms (including the common cold, nasopharyngitis, and sinusitis). The term “pharyngitis” is used to describe illnesses when sore throat is most prominent (including tonsillitis). The term “otitis media” is used to describe illnesses with predominantly middle ear symptoms (including acute otitis media [AOM], otitis media with effusion [OME], and chronic suppurative otitis media [CSOM]). Children who have cough as the predominant symptom are considered to have bronchitis (a lower respiratory tract infection). To make matters more complicated, all areas of the respiratory mucosa may be affected, simultaneously or at different times, during one illness.

The cause of these respiratory mucosal infections most commonly is viral but can be bacterial (**Table 1**),⁴ and many infections involve both viruses and bacteria.⁵ In developed countries, both viral and bacterial infections are likely to be self limited. Persistent disease is most likely to indicate a bacterial infection.

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Table 1 Spectrum of disease, accepted terminology, and etiology of the common upper respiratory tract infections in children		
Condition	Related Diagnoses	Etiology
Rhinosinusitis	Common cold, nasopharyngitis, infective rhinitis, acute rhinosinusitis, acute sinusitis, chronic sinusitis	Viral: rhinovirus, coronavirus, enterovirus, parainfluenza, influenza, respiratory syncytial virus, adenovirus, metapneumovirus Bacterial: <i>Streptococcus pneumoniae</i> , <i>Haemophilus influenzae</i> , <i>Moraxella catarrhalis</i> , <i>Staphylococcus aureus</i> , <i>Streptococcus pyogenes</i>
Pharyngitis	Pharyngitis, tonsillitis, recurrent tonsillitis	Viral: adenovirus, respiratory syncytial virus, Epstein-Barr virus, cytomegalovirus, parainfluenza, influenza Bacterial: <i>Streptococcus pyogenes</i> , Group C and G <i>Streptococci</i> , <i>Mycoplasma pneumoniae</i>
Otitis media	Acute otitis media without perforation, acute otitis media with perforation, otitis media with effusion, chronic suppurative otitis media.	Viral: respiratory syncytial virus, influenza, adenovirus, rhinovirus, coronavirus, enterovirus, parainfluenza, metapneumovirus Bacterial: <i>Streptococcus pneumoniae</i> , <i>Haemophilus influenzae</i> , <i>Moraxella catarrhalis</i> , <i>Streptococcus pyogenes</i>

The frequency of infection and association with fever and constitutional symptoms creates significant distress for the child and the family. By understanding the evidence available from high-quality studies, the clinician can advise the families on appropriate action.⁶ The goal of this article is to support clinicians in answering the following questions:

1. What happened to children with these conditions when no additional treatment was provided?
2. Which interventions have been assessed in well-designed studies?
3. Which interventions have been shown to improve outcomes?
4. How large is the overall benefit?

THE APPROACH TO EVIDENCE USED IN THIS ARTICLE

URTIs are extremely common in children, and there is a long list of potential interventions. Because URTIs are common illnesses, there is no reason why high-quality randomized, controlled trials (RCTs) should not be conducted.⁷ In addition, all families experience these conditions and may have strong personal preferences about treatment. The challenge for the clinician is to make an accurate diagnosis and then to match the effective treatment options with the preferences of the family.

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