

A REVIEW OF THE BURDEN AND MANAGEMENT OF UPPER RESPIRATORY TRACT INFECTIONS

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ABSTRACT

Introduction: Respiratory tract infections constitute a major public health worldwide. Being in the top causes of physician visits and skipping of work in adults, upper respiratory tract infections (URTIs) have therefore been recognized as one of the most common medical problems in the daily lives of people worldwide. URTIs can be defined as self-limited diseases that present with irritation and swelling of the upper airways with associated cough but with no proof of pneumonia, absence of a separate condition to account for the patient symptoms, or with no history of COPD/emphysema/chronic bronchitis. URTIs involve the following parts: nose, nasal cavity, paranasal sinuses, the pharynx the portion of the larynx above the vocal folds.

Material and methods: Current research materials published in online medical databases as Medline (PubMed) and Scopus, the websites of the WHO, CDC chronic bronchitis were revised. The most relevant articles were selected.

Aim of study: To briefly review and analyze the current literature data and practical experience on the global burden of URTIs and the strategies for their control.

Results: An URTI is an illness caused by an acute infection, involving the upper respiratory tract, including the nose, sinuses, pharynx, or larynx. This commonly includes nasal obstruction, sore throat, tonsillitis, pharyngitis, laryngitis, sinusitis, otitis media, and the common cold. The analyzed studies indicate that URTIs are commonly observed in daily practice in outpatient settings and are accountable for more than 20 million missed days of school and more than 20 million days of work lost, thus generating a large economic burden. It is estimated that children age four and younger are diagnosed with approx. 4.9 URTIs per year, and the children between the age of five and 19, 2.8 infections per year. While on average, adults age 19-39 are diagnosed with 2.2 URTIs per year and adults age 40 and over having 1.6 per year. The microbial flora of the upper airways is influenced by many variables, including the age and health of the host, the status of the innate and adaptive immune systems, environment, hospitalization, and prior exposure to antimicrobial agents. The etiologic agents of upper respiratory tract infections vary according to the age group of patients and can be: viruses, bacteria and less commonly fungal and helminthic. This must be considered for appropriate laboratory evaluation and clinical management. For the prescription of a satisfactory treatment it is crucial to distinguish between viral and bacterial infections. Therefore, the lesser indication of unnecessary diagnostic exams and treatments could benefit a significant number of patients with the common URTIs. Laboratory diagnosis of such infections takes 2-3 days. In the meantime, the patient receives empirical antibiotics, which may be ineffective compromising outcomes for the patient, or contributing to the burden of antimicrobial resistance (AMR). In this context implementation of rapid diagnosis of the causative agent of URTI is crucial in reducing morbidity and avoiding excessive and inappropriate antibiotic use which promotes the development of AMR. The use of standard culture methods is burdensome and time-consuming. During the last decade, the introduction of less time-consuming and more sensitive molecular techniques, such as polymerase chain reaction (PCR) assays, has contributed significantly to diagnosis of infections. Furthermore, the application of multiplex PCR assays (mPCR) for simultaneous identification and serotyping of several respiratory bacterial pathogens seems to be reliable, rapid, and cost effective.

Conclusions: URTIs occur commonly in both young children and adults. This review identified that URTIs have economic impact, related not only to workplace productivity lost but also to the frequent prescription of antibiotics, even when the pathogens are of viral origin and do not require treatment with antibiotics. In the era of evidence-based medicine, health professionals should be continually encouraged to gain scientific information from reliable sources.

