

10th International Congress on Clinical Virology, Fungal Infections & Infectious Diseases, December 04-05, 2017 Dubai, UAE- Improving physicians' adherence to guidelines regarding antibiotics use in acute upper respiratory tract infections in adult patients attending Ministry of Health Hospitals in Alexandria, Egypt: An interventional study

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Antibiotic resistance, as a major public health problem, has its roots in the irrational use of antibiotics, consequently causing treatment failure. It is commonly seen in treating acute upper respiratory tract infections. AURTI include sinusitis, pharyngitis and bronchitis. Adherence to guidelines is not completely afforded due to poor knowledge of physicians in management of AURTI. They fail to perform a definite differentiation between the viral and the bacterial type of the infection. Also, the patients affect physicians' prescribing habits as the patients feel satisfied being prescribed antibiotics. This study aims to increase physicians' adherence to current clinical guidelines for AURTI regarding the use of antibiotics. A predesigned questionnaire was used for the assessment of the physicians' adherence to the guidelines before and after the intervention. Active and passive interventions are to improve physician's adherence to treatment guidelines as short-session for physicians, didactic teaching and antibiotic guideline posters in respiratory unit clinics. Throat swab using Rapid Strep-A and Test strip i.e. rapid antigen detection test (RADT) using active and passive interventions can change prescribing habits. Physician's adherence to guidelines will be perceptible, resulting in improvement of appropriate antibiotic use for AURTI, reduction of unnecessary healthcare costs and advance in quality of care provided by outpatient clinics. Physicians' qualifications and the use of RADT in pharyngeal infection play a significant role affecting the adherence to guidelines and prescribing of the proper antibiotic.

The upper respiratory tract includes the sinuses, nasal passages, pharynx, and larynx. These structures direct the air we breathe from the outside to the trachea and eventually to the lungs for respiration to take place. An upper respiratory tract infection, or upper respiratory infection, is an infectious process of any of the components of the upper airway. Infection of the specific areas of the upper respiratory tract can be named specifically. Examples of these may include rhinitis (inflammation of the nasal cavity), sinus infection (sinusitis or rhinosinusitis) -- inflammation of the sinuses located around the nose, common cold (nasopharyngitis) -- inflammation of the nares, pharynx, hypopharynx, uvula, and tonsils, pharyngitis (inflammation of the pharynx, uvula, and tonsils), epiglottitis (inflammation of the upper portion of the larynx or the epiglottis), laryngitis (inflammation of the larynx), laryngotracheitis (inflammation of the larynx and the trachea), and tracheitis (inflammation of the trachea). Upper respiratory infections are one of the most frequent causes for a doctor visit with varying symptoms ranging from runny nose, sore throat, cough, to breathing difficulty, and lethargy. In the United States, upper respiratory infections are the most common illness leading to missing school or work.

In addition to these intense physical barriers in the upper respiratory tract, the immune system also does its part to fight the invasion of the pathogens or microbes entering the upper airway. Adenoids and tonsils located in the upper respiratory tract are a

part of the immune system that help fight infections. Through the actions of the specialized cells, antibodies, and chemicals within these lymph nodes, invading microbes are engulfed within them and are eventually destroyed. Despite these defense processes, invading viruses and bacteria adapt various mechanisms to resist destruction. They can sometimes produce toxins to impair the body's defense system or change their shape or outer structural proteins to disguise from being recognized by the immune systems (change of antigenicity). Some bacteria may produce adhesion factors that allow them to stick to the mucus membrane and hinder their destruction. It is also important to note that different pathogens have varying ability to overcome the body's defense system and cause infections. The symptoms of upper respiratory infection usually last between 3-14 days; if symptoms last longer than 14 days, an alternative diagnosis can be considered such as, sinusitis, allergy, pneumonia, or bronchitis. Bacterial pharyngitis (strep throat due to group A Streptococcus) may be considered if symptoms continue to worsen after the first week in the absence of runny nose, cough, or conjunctivitis. Prompt testing and initiation of appropriate antibiotics is important due to the risk of developing rheumatic fever, especially in children. Epiglottitis is an upper respiratory infection in children that may have a more sudden onset of sore throat, feeling of a lump in the throat, muffled voice, dry cough, very painful swallowing, and drooling. Respiratory infections in the lower part of the upper respiratory tract, such as, laryngotracheitis, are more commonly featured with dry cough and hoarseness or loss of voice. Barking or whooping cough, gagging, rib pain (from severe cough) are other symptoms and signs.

Most cases of acute pharyngotonsillitis are viral. Currently known respiratory viruses include rhinovirus, adenovirus, influenza virus, parainfluenza virus, coxsackievirus, coronavirus, echovirus, respiratory syncytial virus, and metapneumovirus. These conditions should be differentiated from infectious mononucleosis, which is caused by Epstein-Barr virus (EBV) generally among young adults, acute human immunodeficiency virus (HIV) infection, cytomegalovirus infection, and herpes simplex virus infection. Universal use of antibiotics for patients with sore throat is beneficial in terms of shortening the length of acute pharyngotonsillitis symptoms and reducing the frequency of bacterial complications; however, such use may heighten the prevalence of side effects and facilitate the spread of antimicrobial-resistant bacteria, thereby increasing medical costs. Therefore, antibiotic prescription should be avoided for acute viral pharyngotonsillitis and appropriate antimicrobial therapy should be administered for acute bacterial pharyngotonsillitis based on aggressive differentiation of the causative pathogen in the clinical setting. The most common cause of acute bacterial pharyngotonsillitis is *S. pyogenes*, which accounts for 5–15% of all cases of acute bacterial pharyngotonsillitis in adults. *pyogenes*-induced acute pharyngotonsillitis may lead to acute suppurative complications, such as otitis media and peritonsillar abscess, as well as non-suppurative complications, such as rheumatic fever and acute glomerulonephritis; therefore, prompt diagnosis and appropriate antimicrobial therapy are necessary. Although acute rheumatic fever is considerably less prevalent today, its clinical significance is substantial.