



A Respiratory Tract Bacterial Infection was Distributed to the Community Testing for Susceptibility to Etiological Agents

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Abstract

One of the main reasons people visits their GP or pharmacy is thought to be respiratory tract infections. Infections of the respiratory tract (RTIs) are the main cause of death in the USA. The severity of lower respiratory infections (LRIs) tends to be higher than that of upper respiratory infections. All infectious diseases included, LRIs are the most common cause of death. Bronchitis and pneumonia are the two LRIs that are most prevalent. The upper respiratory tract frequently becomes infected with tonsillitis, pharyngitis, laryngitis, sinusitis, and otitis media (Wessels MR, 2011).

Our study aims to improve surveys of respiratory tract infection cases and causes. We then assess the proportion of patients with negative results and determine why there was no screening for all pathogenic viruses and only a search for bacterial infection. Finally, we characterize the isolated pathogenic bacteria's culture and test its antibiotic susceptibility.

Between January 2013 and December 2014, we conducted a survey of 635 throat swabs and sputum samples in the Department of Microbiology at the Central Laboratory of the Ministry of Health in Amman, the capital of Jordan. We used throat and sputum, culture, biochemical testing, and antisera.

Swabs and sputum samples were collected from a total of 635 people (275 men and 360 women), and a total of 55 throat samples yielded positive results for Group A beta-hemolytic streptococci, with an overall prevalence of 8.7%. There were 23 sputum samples that tested positive for various bacterial infections, with a 10% overall frequency (Wenzel RP et al., 2006). Then to disclose the details of their susceptibility to antibiotics. Finally, Group A beta-hemolytic streptococci are the most frequent cause of upper respiratory tract infections. But the most typical reason for lower respiratory tract infections is *K. pneumoniae*.

Keywords: Respiratory tract infections, Lower respiratory tract infections throat swab, Sputum sample, and Antibiotic Susceptibility testing

INTRODUCTION

Any of the various infectious disorders that affect the respiratory system are referred to as respiratory tract infections. This type of infection is typically further divided into lower respiratory tract infections (LRTI) and upper respiratory tract infections (URI or URTI) (LRI or LRTI). Diseases of the lower respiratory system, like pneumonia, are typically much more serious than infections of the

upper respiratory system, like the common cold. The upper respiratory tract is typically understood to be the airway above the glottis or vocal cords, while there is considerable debate as to where the exact line between the upper and lower respiratory tracts should be drawn. This comprises the larynx, pharynx, sinuses, and nose (Wilson JF, 2010).

The trachea (wind pipe), bronchial tubes, bronchioles, and lungs make up the lower respiratory system. The severity

of lower respiratory tract infections tends to be higher than those of the upper respiratory tract. All infectious diseases included, LRIs are the most common cause of death. Bronchitis and pneumonia are the two LRIs that are most prevalent.

Both the upper and lower respiratory tracts are affected by influenza, although the most harmful strains, including the highly pernicious H5N1, prefer to bind to receptors deep in the lungs. An acute illness affecting the nose, paranasal sinuses, pharynx, larynx, trachea, and bronchi is referred to as an upper respiratory tract infection (URI) in general (Bauer AW et al., 1966) The sickness known as the common cold, as well as pharyngitis, sinusitis, and tracheobronchitis, are discussed here as the prototype. To distinguish it from other URIs, influenza is a systemic illness that affects the upper respiratory tract.

A respiratory virus (rhinovirus, coronavirus, adenovirus, influenza virus, Para influenza viruses, and respiratory syncytial virus), Epstein-Barr virus, or coxsackievirus can cause pharyngitis, an inflammation of the throat. A bacterial throat infection *S. pyogenes* is the most prevalent cause of bacterial pharyngitis, which is less common.

Neisseria meningitidis, *Mycoplasma pneumoniae*, *C. diphtheriae*, and *Arcanobacterium haemolyticum* are a few other uncommon bacterial culprits. Peak incidence occurs in temperate climates between autumn and spring and in tropical regions during the wet season. When groups share cramped living spaces, droplet dissemination or direct transmissions of the disease are more rapid. *S. pyogenes* detection is the most often requested investigation for pharyngitis. Either direct antigen detection or cultures on blood agar with an additional latex agglutination reaction for group-specific polysaccharide are used to identify this species. Both methods are ineffective in separating oropharyngeal colonisation from actual illness, but only culture allows for the testing of drug susceptibility. The laboratory should be informed if there is a possibility of an infection with *N. gonorrhoea*, *Mycoplasma* spp., *Arcanobacterium* sp., or *Corynebacterium* spp. so that specialized, non-standard culture media can be employed. Treatment Streptococcal pharyngitis is treated with either oral penicillin or erythromycin.

Although it is typically more severe and you may cough up phlegm and mucus, the major symptom of a lower RTI is still a cough. The sense of tightness in your chest, rapid breathing, breathlessness, and wheezing are further potential signs. RTIs have a number of methods to spread. Tiny droplets of fluid containing the cold virus are released into the air whenever you sneeze or cough if you have an infection like a cold. These could spread infection if someone else breathes them in. Additionally, indirect contact might lead to the spread of infections (Van Riel D et al., 2006).

Maintaining proper hygiene, such as routinely washing your

hands with soap and warm water, is the greatest approach to stop the transmission of infection. You normally won't need to see your GP because the majority of RTIs will go away on their own without the need for treatment. By using over-the-counter medications like paracetamol or ibuprofen, consuming plenty of water, and getting plenty of rest, you can manage your symptoms at home. Since antibiotics are only beneficial if the infection is brought on by bacteria, they are not often advised for RTIs.

Our study aims to improve surveys of respiratory tract infection cases and causes. We then assess the proportion of patients with negative results and determine why there was no screening for all pathogenic viruses and only a search for bacterial infection. Finally, we characterize the isolated pathogenic bacteria's culture and test its antibiotic susceptibility. Between January 2013 and December 2014, we conducted a survey of 635 throat swabs and sputum samples at the Department of Microbiology at the Central Laboratory of the Ministry of Health in Amman, the capital of Jordan. We used throat and sputum, culture, biochemical testing, and antisera. According to our research, vancomycin was the antibiotic that bacterial isolates responded to the most, followed by cefuroxime and gentamicin. The bacteria isolates tested less resistant to ampicillin and penicillin, and this is because to unchecked drug overuse.

CONCLUSION

Upper respiratory tract infections are most frequently caused by Group A beta-hemolytic streptococci. But the most typical reason for lower respiratory tract infections is *K. pneumoniae*. The explanation for this absence of screening for all harmful viruses and search for bacterial infection exclusively is because the incidence of bacteria is relatively low even in patients who suffer from respiratory tract illness. The therapist can use the susceptibility data from our study to inform their choice of therapy choices. The bacterium isolates tested less resistant to antibiotics, and the usage of antibiotics without restraint is to blame for that.

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