

Prophylactic Preparations for Common Ailments of the Respiratory Tract

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Abstract

Hospitalization rates are highest for those who have been diagnosed with a respiratory illness. Patients in ICUs often develop severe sepsis and septic shock due to pneumonia (ICUs). “Complications from respiratory infections may be exacerbated by coexisting disorders such as asthma, COPD, and sinusitis. Cough, sore throat, cold, tonsillitis, peritonsillar abscess, epiglottitis, laryngitis, tracheitis, and hoarseness are all symptoms of an upper respiratory tract infection. The most common forms of illness affecting the lower respiratory tract include influenza, bronchiolitis, bronchitis, and pneumonia. Influenza A and B viruses, adenoviruses, coronaviruses, rhinoviruses, respiratory syncytial viruses, enteroviruses, parainfluenza viruses, and Epstein-Barr virus are among the most common viruses that cause upper respiratory tract infections.” This research is focused on examining the treatment of respiratory tract infections.

Keywords: *Respiratory, Pneumonia, Asthma, Chronic Obstructive Pulmonary Disease, Influenza, Bronchiolitis, Bronchitis.*

INTRODUCTION

The World Health Organization has declared COVID-19 a global pandemic, and there have been 7,713,571 confirmed cases and 427,578 deaths.

To put it simply, health education is a procedure by which people acquire the knowledge and skills necessary to adopt

lifestyles that support their own and others' health and well-being (Kuzman, 2005)¹. It's not without its own difficulties and dangers to implement a successful health education project. Whether or whether the intervention is successful in changing behaviour relies on how well it works for the intended population in their natural environments and in light of their prior experiences and knowledge.

Hospitalization rates are highest for those who have been diagnosed with a respiratory illness (Kasper, Dennis, Braunwald, 2005)². “Patients in ICUs often develop severe sepsis and septic shock due to pneumonia (ICUs). Complications from respiratory infections may be exacerbated by coexisting disorders such as asthma, COPD, and sinusitis. Cough, sore throat, cold, tonsillitis, peritonsillar abscess, epiglottitis, laryngitis, tracheitis, and hoarseness are all symptoms of an upper respiratory tract infection. The most common forms of illness affecting the lower respiratory tract include influenza, bronchiolitis, bronchitis, and pneumonia (Ayres, 1986)³. Influenza A and B viruses, adenoviruses, coronaviruses, rhinoviruses, respiratory syncytial viruses, enteroviruses, parainfluenza viruses, and Epstein-Barr virus are among the most common viruses that cause upper respiratory tract infections.”

“*Haemophilus influenzae*, *Klebsiella pneumoniae*, *Streptococcus pneumoniae*, *Staphylococcus aureus*, *Streptococcus pyogenes*, *Legionella pneumophila*, and *Mycoplasma pneumoniae* are the most commonly reported bacterial causes of respiratory tract infection”; however, tuberculous pneumonia is the most common infection that results in hospitalisation. How to stop and treat the virus that causes severe cases of community-acquired pneumonia.

AIMS AND OBJECTIVES

- i) To study health promotion and prevention efforts that take into account the risk factors for respiratory tract infections,
- ii) To list common ailments of respiratory tract

METHODOLOGY

Conducting an analysis of the prophylactic preparations for common ailments of the respiratory tract through existing literature available on the subject

As outlined in the World Health Organization's (WHO) reports and recommendations, have the greatest potential for success. Some rules of thumb are as follows:

- (i) Establish the most pressing public health and contagious disease concerns by analysis of risk factors and past surveillance data.
- (ii) Provide useful resources for health education and promotion
- (iii) Help spread health information to attendees by collaborating with event planners to include it in visitor guides.
- (iv) Specify suggested, rather than required, travel health measures, such as vaccinations, precautions (with respect to sex, sharing water bottles, etc.), hand washing, cough etiquette, and so on.
- (v) Clearly explain the steps to take to get a medical evaluation or treatment in the case of sickness (e.g., call first before visiting hospitals)
- (vi) Create a free, multilingual health information hotline and make it widely known to the public.
- (vii) Create multilingual learning resources on demand.
- (viii) Use a variety of channels, including the Internet, to disseminate safety information, and direct attendees to a central hub of event-related risk communication online.

Since the pandemic of COVID-19, no vaccine has been developed to protect against the disease. The World Health Organization further states that protection against COVID-19 is not provided by any of the currently available vaccinations for pneumonia, including "pneumococcal vaccine and *Haemophilus influenzae* type B (Hib)" vaccine.

Hygiene Practices for Prevention and Control

In order to assist control and prevent the spread of influenza, particularly during pandemics, different health organisations throughout the world advocate for hand cleanliness as a fundamental, low-cost, and non-pharmacological intervention (Champan et al. 2000)6. “In addition to hand gloves, this is a frequent method of preventing the spread of COVID-19. Most travellers took precautions, including washing their hands often. Researchers found that the importance of hand cleanliness in the prevention of respiratory infections was a primary driver of these behaviours.”

The Centers for Disease Control and Prevention (CDC) recommends “avoiding the transmission of respiratory diseases by always using a tissue to cover one's mouth and nose while coughing or sneezing and disposing of it in a wastebasket afterward (Donowitz and Mandell, 2005)7. While covering one's mouth and nose when coughing with one's bare hands may prevent the spread of germs, most health authorities worldwide do not suggest doing so.” While no significant meaningful result was found regarding the occurrence of respiratory symptoms, 46.2% of American Hajj pilgrims polled in 2009 acknowledged practising cough etiquette as a way of protection, “while compliance among health staff was 89% in the same year. Cloth handkerchiefs may serve as a medium for growing germs, hence their usage is discouraged in favour of disposable tissues for covering the mouth and nose during a cough or sneeze.” While you're unwell and going through the motions of Hajj, you shouldn't bring your handkerchief with you since it might transmit your germs. Although just 1.1% of French pilgrims surveyed were aware of using a handkerchief as a preventative strategy against respiratory infections, “those same pilgrims expressed strong willingness to use disposable handkerchiefs after receiving an educational intervention and health promotion.

Cough etiquette is highly recommended by the World Health Organization to decrease the spread of acute respiratory diseases like COVID-19.”

According to the CDC, the best strategy to prevent the transmission of coronavirus sickness in 2019 is to restrict contact with others (COVID-19). In response to the COVID-19 outbreak, health officials in Saudi Arabia have implemented social distancing measures for attendees at the Grand Mosque and other Sacred sites. So yet, no one has performed the Hajj trip while actively isolating themselves from others or avoiding large groups of people.

“Health education may be defined as the process by which people or groups acquire the knowledge and skills necessary to engage in activities that promote, maintain, or restore health,” as stated by the World Health Organization. Health education interventions, whether led by NGOs or government agencies, can aid communities in assessing their own requirements, building up their problem-solving capacities, and mobilising a range of resources to design, disseminate, implement, evaluate, and adhere to strategies for improving their health [9].

With the purpose of stopping the spread of illness, health education packages and awareness kits are created with linguistic, cultural, and racial diversity in mind. The most important factor in the successful prevention of respiratory tract infections throughout the pilgrimage has been the training and education of healthcare personnel and professionals who are usually the first to meet instances. With early diagnosis and contact tracking, which are skills learned by healthcare personnel, infections may be contained and their spread reduced.

Pharyngitis is an inflammation of the throat that causes difficulty swallowing and an enlarged, red mucosa at the back of the throat. “Epstein-

Barr virus, coxsackievirus, or a respiratory virus like rhinovirus, coronavirus, adenovirus, influenza virus, parainfluenza virus, or respiratory syncytial virus are the most common culprits.”

“Aetiological clues include:

- (i) Conjunctivitis: adenovirus
- (ii) Constitutional symptoms (lethargy and malaise) and Tonsillar exudate: Epstein–Barr virus
- (iii) Posterior palatal ulcers: coxsackievirus
- (iv) Abrupt onset, ‘doughnut’ pharyngeal lesions and beefy uvula: Streptococcus pyogenes (group A streptococcus) grey pharyngeal pseudomembrane in unvaccinated subject: Corynebacterium diphtheriae.”

DISCUSSION OF FINDINGS

Treatment

Streptococcal pharyngitis is treated with either oral penicillin or erythromycin. Although treating a pharyngeal infection may not affect the original illness's course, “it might lessen the likelihood of developing serious complications such rheumatic heart disease, poststreptococcal glomerulonephritis, and Sydenham's chorea. Antibiotic therapy of streptococcal pharyngitis has been questioned in industrialised nations since the noninfectious sequelae of streptococcal infection are very uncommon (Hall and Hall, 1995)9. Nevertheless, the recent rise in streptococcal infection in Europe and North America may modify this attitude.” Scarlet fever, streptococcal toxic shock syndrome, and quinsy are additional toxin-related consequences of streptococcal pharyngitis (paratonsillar abscess). Secondary infections caused by oral anaerobic bacteria are possible in quinsy, although they are usually treatable with penicillin. Boils and other purulent foci must be drained.

Common cold

This is particularly true between the fall and spring months, when both young children and their parents are more likely to get a cold. Rhinoviruses are the most common culprit in this case. It has been difficult to create an efficient vaccination against the common cold because of the large size of the rhinoviral group and the participation of other respiratory viruses in a minority of cases. Sneezing, a runny nose, and blocked nostrils are all symptoms. The symptoms of pharyngitis and cough may be present, although fever and myalgia are unusual. Antimicrobials are unnecessary, and any therapy should just focus on relieving symptoms.

Influenza

The influenza viruses of groups A through C generate both seasonal and year-round outbreaks. Symptoms of a typical cold may be present, but the systemic and respiratory manifestations are more severe. Conditions including fever, fatigue, and muscle aches are often experienced. The genome of the influenza virus is segmented and it is an RNA virus. Haemagglutinin and neuraminidase are the two main surface antigens used in epidemic strain typing. Antigenic drift, the outcome of genetic reassortment, is responsible for the variation in influenza virus strains seen in subsequent pandemics. Antigenic variation fluctuates slightly between outbreaks. Antigenic drift describes these changes. Since antigenic shift makes previously acquired particular immunity to influenza virus antigens useless, it causes influenza outbreaks. Cardiorespiratory failure and subsequent bacterial pneumonia have both been linked to high fatality rates during influenza outbreaks (caused by Staphylococcus aureus or S. pneumoniae).

Diagnosis

Although serology is useful for studying epidemics and tracking outbreaks, clinical diagnosis remains the norm. Symptomatic

alleviation and management of complications, if any, are the primary goals of treatment. Treatment with amantidine, however, may be helpful if started early during an infection with pandemic type A strains. Oseltamivir, a neuraminidase inhibitor, is one of the newer medications for influenza infection that has been shown to shorten the duration of symptoms in certain individuals. There is a vaccination, but it only protects against strains that have been studied in isolation. Those who are at a greater risk of problems after receiving the vaccination “include the elderly, those with cardiovascular or respiratory illness, those with renal failure, those living in nursing homes, and those in other high-risk professions” (e.g. health care).

Bronchitis: Treatment and Cure

Acute bronchitis, tracheobronchitis, and acute aggravation of chronic bronchitis all have similar symptoms and are all considered to be forms of the same disease.

Acute bronchitis: This illness is characterised by a cough and the generation of sputum (often white to cream in colour), but no radiographic abnormalities on chest X-ray. *M. pneumoniae* is the causative organism.

Tracheobronchitis: In this case, coughing fits are brief and do not result in the creation of much sputum. There may be signs of a systemic illness, such as a high temperature and muscle aches, since the flu virus is to blame.

Acute exacerbation of chronic bronchitis: With time, the sputum produced by a chronic cough that has been producing small amounts of purulent sputum will increase in volume. Infection with a respiratory virus like *S. Pneumoniae* or *H. Influenzae* is a possible cause.

Acute pneumonia patients often present with symptoms such as cough, chest signs, and fever. It's unclear whether or not the cough will result in the production of purulent sputum.

Symptoms in the chest might vary and are often interpreted differently from one person to the next. Consolidation, fluid in the air gaps, or even an effusion or cavity might be represented by these findings. Impairment of respiratory function is the most serious complication of acute pneumonia and should be evaluated early. Antimicrobial treatment is selected based on the suspected pathogen. Causal agents may often be narrowed down with the use of a detailed patient history, physical examination, and chest X-rays.

CONCLUSION

“The main clinico-pathological patterns of acute pneumonia are recognized as follows:

1. Lobar pneumonia: pulmonary consolidation demarcated by border of segment or lobe

Most often caused by *S. pneumoniae* also caused by *S. aureus*, *S. pyogenes* (group A streptococcus) and *Legionella pneumophila*

2. Bronchopneumonia: patchy consolidation around the larger airways caused by *S. pneumoniae*, *H. influenzae*, *S. aureus* and *L. pneumophila*

3. Interstitial pneumonia presents: Fine areas of interstitial infiltration in lung fields

- Usually no sputum production at presentation

- Caused by *Legionella* sp., *Mycoplasma* spp. or virus

- Initial treatment is with erythromycin

4. Aspiration pneumonia: follows aspiration of oral or gastric contents

- Damage usually caused by chemical or mechanical insult

- Chest X-ray changes either in lower right lobe or, if supine, apex of right lower lobe

- Bacterial damage caused by oral streptococci”

These respiratory tract infections are recognized as those treated with local herbal concoctions at the very outset or at the terminal end of the treatment regime.

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