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A Review on the Severe Acute Respiratory Infection (SARI)

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Omkar.S.Mohite*, Pravin.P.Honmane

Rajarambapu College of pharmacy, kasegaon.Tal-walwa, Dis-sangali.

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ABSTRACT

Acute respiratory infections are the leading cause of morbidity and mortality from infectious diseases in the world. Almost 4 million people die from acute respiratory infections each year, with 98% of these deaths due to lower respiratory tract infections. Mortality rates are particularly high in infants, children, and elderly people, especially in low- and middle-income countries. Acute respiratory infections are one of the most frequent causes of consultation or admission to health-care facilities, particularly in pediatric services. The incidence, distribution, and outcome of disease of specific acute respiratory infections vary according to several factors, including availability and effectiveness of medical care and infection prevention and control (IPC) measures to contain the spread, such as vaccines, access to health-care facilities, and isolation capacity; host factors, such as age, cigarette-smoking, host ability to transmit infection, immune status, nutritional status, prior or concurrent infection with other pathogens, and underlying medical conditions; pathogenic characteristics, such as modes of transmission, transmissibility, virulence factors. Bacteria are a major cause of lower respiratory tract infections, with Streptococcus pneumonia being the most common cause of bacterial community-acquired pneumonia in many countries. Most acute respiratory infections, however, are caused by viruses or are a mix of viral–bacterial infections. Acute respiratory infections that have epidemic or pandemic potential and may pose a public health risk warrant special precautions and preparedness.

INTRODUCTION

The World Health Organization (WHO) case definition of severe acute respiratory infections (SARI) is anyone with acute respiratory infection with symptoms within 10 days of presentation, cough, fever, and hospitalization. This is used to standardize global influenza surveillance with the caveat not all cases will be captured. We sought to determine the proportion of hospitalized Jordanian children admitted with acute respiratory illnesses. We conducted a 3-year viral surveillance study in children less than 2 years admitted with acute respiratory symptoms and/or fever into a large government hospital in Amman. Demographic and clinical data were collected. We tested nasal/throat swabs for 11 viruses using q-RT-PCR. Severe acute respiratory infections (SARI) remain one of the leading causes of mortality around the world in all age groups. There is a large global variation in epidemiology, clinical management, and outcomes, including mortality. Lower respiratory infections are the leading infectious cause of death worldwide. Severe acute respiratory infection (SARI) is an acute respiratory infection with fever, cough, and hospitalization and is used for surveillance in acute care settings globally. Organ-specific support is often required, with high attributable mortality.2 a better understanding of global variability in the epidemiology and care provided for critically ill patients with SARI is lacking.

NATURAL HISTORY-

SARI is defined primarily by clinical, radiological, and/or histopathological evidence of pulmonary parenchymal disease (e.g., pneumonia, pneumonitis, or Acute Respiratory Distress Syndrome [ARDS]), typically associated with the need for hospitalization, intensive care unit management and/or another severity marker. Atypical presentations may occur in the presence of immunosuppression or another comorbidity.

ETIOLOGY-

Some pathogens cause SARI, but not limited to novel influenza viruses and coronaviruses. Examples of other etiologies causing SARI that may not be identified within 72 hours of hospital admission include Mycoplasma pneumoniae and Chlamydophila pneumonia.

EPIDEMIOLOGY-

Reservoir-

The reservoir of SARI varies depending on the pathogen.

Occurrence-

The occurrence of SARI is highly variable depending on the pathogen and mode of transmission. Pathogens with sustained human-to-human transmission will have higher case counts than those where only sporadic human-to-human transmission is observed.

Transmission:-

The transmission route varies depending on the organism and could be airborne, droplet, or through direct or indirect contact with humans or animals. There may be multiple modes of transmission for a single organism.

Incubation Period:-

The incubation period varies depending on the specific pathogen and the inoculum.

Period of Communicability-

Communicability varies with specific disease agents and is often not well defined. Not all causative organisms of SARI are capable of human-to-human transmission.

Risk Factors-

Risk factors for SARI vary according to the causative agent. The risk will also vary according to the type and duration of exposure, as well as the inoculum. In general, people who have occupational or travel exposure are at greater risk of acquiring SARI. People who are elderly or immunocompromised will generally have more severe illness if they are infected.

CONTROL-

Management of SARI-

Persons meeting the case definition for SARI are managed in the hospital**.** Contact and Droplet Precautions should be added to Routine Practices when providing care to patients with symptoms of acute respiratory infection.

Management of Close Contacts:-

Management of close contacts will be dictated by the nature of the causative agent once it is known.

Preventive Measures-

- Avoid traveling to areas where there are known ongoing outbreaks of SARI.
- Avoid contact with wild or domestic animals and fowl especially if they are sick or dead. If there is contact with animals, regular hand washing is recommended before and after touching animals.
- Consult travel medicine clinics before travel to ensure appropriate immunizations are up to date for the travel destination.
- Follow good food safety and good food hygiene practices.
- Adhere to recommended infection prevention and control practices in health care facilities.
- Always practice good hand hygiene and respiratory hygiene/cough etiquette. Travelers should wash their hands often with soap and water or use hand sanitizers regularly.

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