EDITORIAL

Respiratory syncytial virus difficulties in adults with severe community acquired pneumonia

Amit Baghel

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ABSTRACT

Respiratory Syncytial Virus (RSV) is an enveloped RNA virus B of the Pneumoviridae family that is divided into two antigenic groups, A and B. RSV can cause severe respiratory illnesses in people of all ages.

Upper respiratory tract infections, pneumonia, bronchiolitis, wheezing, and asthma or COPD exacerbations are some of the clinical symptoms of RSV. RSV is spread from person to person by respiratory droplets; the incubation period ranges from 2 days to 8 days and may be affected by host variables.

Key Words: *Pneumonia; Bronchiolitis; Wheezing*

INTRODUCTION

RSV is widely known for its role in lower respiratory tract infections in newborns and young children, but it has also been recognized as an emerging cause of viral pneumonia in adults. RSV generates seasonal epidemics (winter and spring) all throughout the world, and yearly hospitalizations due to RSV infection are estimated to be 25.4 per 10,000 persons over the age of 65. It was responsible for at least 11,000 fatalities each year in the United States. In patients above the age of 75, mortality climbs to more than 70%. RSV found to be more associated with hospitalization than human metapneumovirus or influenza in a large prospective research conducted across three influenza seasons [1].

The most frequent symptoms are cough, fever, and dyspnea. Other respiratory pathogen's clinical characteristics can be similar to RSV's and may be insufficient to identify RSV from these diseases. Age, health condition, nasal microbiota, and whether the infection is primary or secondary all influence clinical symptoms. Adult RSV pneumonias are remarkably similar to other viral pneumonias. However, as compared to influenza viruses, RSV has more signs and symptoms, such as wheezing, rhinorrhea, lower temperature, a higher risk of patient age 65 or older, or immune compromise. Patients infected with RSV were more likely to have dyspnea, wheezy breathing, and a dry cough6 than those infected with Human Metapneumovirus (hMPV) or Parainfluenza Virus (hPIV). It might aid in presumptive differential diagnosis in resource-constrained institutions, but it should not be utilised in place of diagnostic testing. RSV pneumonia was related with a higher incidence of ICU hospitalization, mechanical ventilation, and 30-day death when compared to hPIV and hMPV pneumonia. The allergic sensitivity of the airways remains long after the RSV has been eliminated, as evidenced by chronic coughing or wheezing [2].

RSV has a special affinity for tiny airway epithelial cells, generating edoema and inflammatory alterations that lead to airway blockage. Furthermore, RSV generates a dominant Th2-type cellular immune response, culminating in bronchospasm via leukotriene release and RSV-specific IgE synthesis.

In preterm or young infants with bronchiolitis or pneumonia, as well as immunocompromised adults, testing for RSV is typically advised if it affects the medical choice. RSV was formerly detected using antigen detection techniques, serology, or cell culture, and more recently through reverse transcription polymerase chain reaction from the lower or upper respiratory tract [3]. Because of its rapid findings and sensitivity/specificity for viral detection, reverse transcription polymerase chain reaction is currently regarded the gold standard. As a result, the testing paradigm must be modified. The primary flaw that may be connected with selection biases is the retrospective design. Patients with more serious illnesses, for example, were more likely to be tested, and not all patients were eligible for swabbing. Second, other respiratory viruses and the nasal bacterial microbiome, both of which impact symptoms in children, were not investigated. Furthermore, more study is needed to examine outcomes and clinical aspects based on viral subtypes. These findings are similar with recent studies that found a high prevalence of various respiratory viruses in the ICU, such as metapneumovirus, and especially human rhinovirus in hospitalized adults [4]. Although male sex, younger age, and a low WBC count were significantly lower in COVID-19 infections than in influenza or RSV infections, the differences were not significant enough to differentiate between organisms upon admission. In conclusion, the current study provides a real-world profile of RSV as a cause of pneumonia in the ICU. Although previously overlooked, RSV is now better recognized, and the prevalence of RSV among adults in the ICU is greater than

Editorial office, Journal of Chest and Lung Research, United Kingdom

Correspondence: Amit Baghel, Editorial office, Journal of Chest and Lung Research, United Kingdom , e-mail: lungresearch@pulsusjournal.com

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previously thought. Indeed, the development of quick molecular diagnostic methods for respiratory viruses during the last decade has altered the landscape of microbiological diagnosis. RSV induced more severe pneumonia than hMPV or hPIV and pneumonia that was similar to influenza. Their findings highlight the need of prioritizing the development of RSV vaccines and novel antiviral medicines to decrease pneumonia fatalities. While certain adult populations, such as lung transplant patients, are at a higher risk for refractory hypoxemia and ventilator support, our data imply that immunocompetent adults may also be at risk, with bacterial co-infection being rather prevalent [5]. These findings underline the need of using molecular diagnostic techniques to identify viruses in all persons with severe community acquired pneumonia.

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