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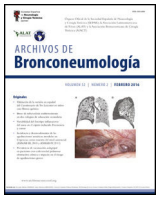

Editorial

Reassessing the Landscape of Viral Respiratory Infections After the COVID-19 Pandemic

The COVID-19 pandemic has been an unprecedented global health challenge emphasizing the need for a robust and adaptive approach to respiratory infections from a translational, clinical, and public health perspective.[1] As we transition beyond the acute phase of the pandemic, it is now imperative to refocus our attention on other respiratory viruses that significantly contribute to the burden of lung infections, including influenza and respiratory syncytial virus (RSV), among others.[2] This editorial aims to shed light on the epidemiological importance and impact on patients' outcomes of viral pulmonary infections, beyond SARS-CoV-2, urging the healthcare providers and decision-makers to broaden their perspective and refine their strategies in the post-COVID-19 era.

The COVID-19 pandemic has underscored the need to re-evaluate the epidemiological landscape, as the focus on SARS-CoV-2 may have inadvertently led to an underestimation of the prevalence and impact of other respiratory viruses, with reports indicating that influenza H1N1 virus showed a lower pathogenicity compared to other viral infections.[3] In the current scenario, surveillance systems should be strengthened to provide accurate data on the incidence, prevalence, and seasonal variations of influenza, RSV, and other viral infections, enabling proactive public health measures and optimized resource allocation. Moreover, while it is well known the importance of microbiologic identification, it remains a gap in respiratory infections, where only in 38% of community-acquired pneumoniae a microbiologic identification is available.[4] In fact, one of the key lessons learned from the COVID-19 pandemic is the paramount importance of early detection for effective disease control. This principle extends to influenza virus, RSV, and other respiratory viruses. Timely identification of viral infections allows for prompt implementation of targeted interventions, reducing the risk of severe complications. Advanced diagnostic tools, such as multiplex assays capable of detecting multiple respiratory viruses simultaneously, should be integrated into routine clinical practice to expedite accurate diagnosis and guide appropriate therapeutic decisions.[5] Furthermore, the growing availability of rapid and non-invasive testing may allow rapid microbiological diagnosis, and guide the initiation of an appropriate antibiotic therapy, its duration, escalation and/or de-escalation, and even its discontinuation if not necessary, especially in older, more frail and immunosuppressed patients, thus allowing for better allocation of resources, reduction in length of hospitalization, treatment tailoring and ultimately reducing costs.[6] Additionally, the application of active surveillance measures allows to collect updated data both at national and international level to actively monitor and share information about new variants as the SARS-CoV-2 experience taught us. We are aware of the limitations to this approach, given the cost of the microbiologic tests, which may not be available in many hospitals and emergency services, especially in low-income countries. However, future efforts should be made to implement this etiologic approach to respiratory viruses and infections. Interestingly, studies have shown how RSV, which is a leading cause of hospitalization in elderly patients with lower respiratory tract infections, is largely under-detected in adult patients, due to low RSV testing frequency, therefore well-designed studies, together with increased testing for RSV, will be required to accurately capture both the burden of RSV and the potential public health impact of vaccines.[7,8]

Besides, understanding the specific impact of different respiratory viruses on patients' outcomes is crucial for tailoring interventions and improving clinical management. Influenza, known for its rapid mutation and potential to cause severe disease, remains a significant threat, especially to vulnerable populations. In the last months, Lombardia region, which accounts for more than 10 million population, has been afflicted by 1.7 million cases of influenza, with an outbreak of influenza related pneumonia, mainly due to influenza A(H1N1)pdm09 virus, causing severe respiratory failure (www.Regione.Lombardia.it). Equally, RSV, with its predilection for causing severe lower respiratory tract infections in young children and the elderly, demands heightened attention, especially in immunocompromised patients,[9] causing severe respiratory failure with the need of ventilation. Additionally, we expect that with the increasing availability of vaccines, in particular for RSV in the next future, will change the paradigm of viral lower respiratory tract infections.[10]

The interconnected nature of our world necessitates a global approach to respiratory infections. International collaboration in surveillance, data sharing, and research efforts is crucial for effectively addressing the ongoing and emerging threats posed by influenza, RSV, and other respiratory viruses. Preparedness plans should be comprehensive, incorporating lessons learned from the COVID-19 pandemic to ensure timely and coordinated responses to future outbreaks.

As we navigate the post-COVID-19 era, it is imperative to broaden our perspective on respiratory infections and refocus attention on influenza, RSV, and other viral pathogens through a comprehensive and adaptive strategy that encompasses early detection, precise diagnostics, tailored interventions, and global collaboration for respiratory viruses other than SARS-CoV-2. By learning from the lessons of the recent pandemic, we can opti-

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mize our approach to respiratory infections, ultimately improving patient outcomes and bolstering global respiratory health. This perspective commentary serves as a call to action, urging the healthcare community to embrace a holistic view of viral infections beyond the shadows of COVID-19.

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Conflicts of Interest

The authors declare not to have any conflicts of interest that may be considered to influence directly or indirectly the content of the manuscript.

References

1. Azeli Y, Solà-Muñoz S, Soto-García MÁ, Morales-Alvarez J, López-Canela À, Trenado J, et al. A regional command center for pandemic surge. Chest. 2022;162:1306–9.
2. Cavallazzi R, Ramirez JA. Influenza and viral pneumonia. Infect Dis Clin North Am. 2024;38:183–212.
3. Li X, Liu Y, Li M, Bian J, Song D, Liu C. Epidemiological investigation of lower respiratory tract infections during influenza A (H1N1) pdm09 virus pandemic based on targeted next-generation sequencing. Front Cell Infect Microbiol. 2023;13:1303456.
4. Jain S, Self WH, Wunderink RG, Fakhran S, Balk R, Bramley AM, et al. Community-acquired pneumonia requiring hospitalization among U.S. adults. N Engl J Med. 2015;373:415–27.
5. Maillard A, Le Goff J, Barry M, Lemiale V, Mercier-Delarue S, Demoule A, et al. Multiplex polymerase chain reaction assay to detect nasopharyngeal viruses in immunocompromised patients with acute respiratory failure. Chest. 2023;164:1364–77.
6. Dessajan J, Timsit JF. Impact of multiplex PCR in the therapeutic management of severe bacterial pneumonia. Antibiotics. 2024;13:95.
7. Rozenbaum MH, Begier E, Kurosky SK, Whelan J, Bem D, Pouwels KB, et al. Incidence of respiratory syncytial virus infection in older adults: limitations of current data. Infect Dis Ther. 2023;12:1487–504.
8. Rozenbaum MH, Judy J, Tran D, Yacisin K, Kurosky SK, Begier E. Low levels of RSV testing among adults hospitalized for lower respiratory tract infection in the United States. Infect Dis Ther. 2023;12:677–85.
9. Febbo J, Revels J, Ketai L. Viral pneumonias. Infect Dis Clin North Am. 2024;38:163–82.
10. Ison MG, Papi A, Athan E, Feldman RG, Langley JM, Lee DG, et al. Efficacy and safety of respiratory syncytial virus prefusion F protein vaccine (RSVPreF3 OA) in older adults over 2 RSV seasons. Clin Infect Dis. 2024;78:1732–44.

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