

Editorial

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Respiratory infections are among the most frequent infectious diseases worldwide, causing significant morbidity and mortality in both children and adults. Older adults are particularly at risk, as age-related physiological decline is often compounded by one or more comorbidities.

The consequences of respiratory infections—especially pneumonia—are now well established. Post-discharge mortality from pneumonia increases over time and is mainly attributable to cardiovascular complications. This represents an additional healthcare burden that must be taken into account in patients with pneumonia. Therefore, the prevention of respiratory infections is one of the key pillars of healthy ageing.

Preventive strategies in adults include maintaining a healthy lifestyle, controlling comorbidities, ensuring proper dental hygiene, preventing

aspiration, and, crucially, vaccination against viral and bacterial respiratory pathogens.

In this monographic series of *Barcelona Respiratory Network Reviews (BRN)*, several authors contribute to the following topics:

- **Acute viral or bacterial bronchitis** is the most common respiratory infection in adults, imposing a substantial healthcare cost due to numerous seasonal ambulatory and emergency visits. One of the major challenges is determining who requires antibiotics and/or hospitalisation, and how to manage post-bronchitis cough, which can persist for months.
- **Community-acquired pneumonia (CAP)** has a general incidence of 1 to 3 cases per 1,000 inhabitants per year, increasing to 18-25 cases among individuals over 65 years of age, depending on the presence or absence of comorbidities. Approximately

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40-60% of patients require hospital admission, and among those, 5-10% need intensive care unit (ICU) admission. In this *BRN* review, we cover in depth the epidemiology, microbiology, and clinical management of CAP.

- **Aspiration pneumonia** accounts for up to 20% of CAP cases and an undetermined proportion of nosocomial pneumonias. Significant uncertainties persist regarding its diagnosis, microbiological profile, prognosis, and appropriate antibiotic treatment. Most of these issues are addressed in this review.
- **Nosocomial pneumonia (NP)** is the second most frequent hospital-acquired infection and carries the highest morbidity and mortality. The most recent guidelines are those of the ATS/IDSA (2016) and the European Respiratory Society/ALAT (2017). Since their publication, several new issues have emerged, including updated classifications of NP, advances in microbial diagnosis, novel antibiotic therapies, treatment failures, and long-term patient follow-up. These topics, along

with a critical revision of the guidelines, are reviewed in this monograph.

- **Early and accurate diagnosis** of respiratory infections is crucial for effective management. Traditional methods such as standard cultures are hindered by low sensitivity and specificity, as well as by unacceptable turnaround times for culture and antibiogram results. Rapid molecular techniques for detecting viral and bacterial pathogens, along with resistance genes, represent a transformative advancement in the management of these infections. One chapter in this series provides an in-depth review of both classical and novel microbiological techniques.
- **Finally, new antibiotics** targeting Gram-negative and Gram-positive bacteria have emerged in recent years, saving numerous lives worldwide—particularly in the context of rising resistance among Gram-negative pathogens. The most recent agents for the treatment of CAP and NP are reviewed and updated in this volume.