

Acute exacerbations of chronic respiratory disease: Progress and opportunities

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Acute respiratory exacerbations are major events associated with adverse health outcomes and significant healthcare expenditure across a range of chronic lung diseases. Identification of novel and effective strategies to improve the management of these events is crucial to facilitate adequate recovery and to mitigate the risk of relapse or hospital readmission. The pursuit of innovation has witnessed an array of clinical research activities including reviews of ‘traditional’ healthcare landscapes, evaluations of priority target areas, establishment of new professional and/or healthcare boundaries, and adaptations to existing healthcare pathways. This exciting, rapidly evolving landscape was the very genesis for this *Chronic Respiratory Disease* special collection entitled ‘Novel insights into acute exacerbations of chronic respiratory diseases’.

Modern-day acute respiratory healthcare has been undoubtedly shaped by vast interest in areas such as (but not limited to) alternative models of healthcare delivery, personalised or precision medicine (including ‘treatable traits’), the value of prognostic biomarkers, and greater emphasis on health economic metrics. Readers of this special collection will discover many of these important areas eloquently addressed through invited expert reviews and original research contributions spanning clinicians and researchers at the very forefront of acute clinical practice research.

Two expert reviews in this collection provide a foundation for critical discussion regarding areas of *progress* and areas of *opportunities* for future improvement within respiratory medicine. The first of these reviews by McDonald, Osadnik and Gibson¹ focuses on the rapidly evolving landscape regarding ‘treatable traits’ in respiratory medicine,

offering the first insights into how this can be adapted to suit the needs of patients with acute respiratory exacerbations. Initially proposed by Professor Alvar Agusti in 2016,² ‘treatable traits’ is an approach that aims to facilitate the translation of personalised medicine from an idealistic concept into real-life clinical practice. A key premise underpinning treatable traits is evaluation of patients via a disease-free lens focused upon traits that are (i) identifiable (via biomarkers, questionnaires or objective evaluation – referred to as ‘trait identification markers’); (ii) clinically important (they influence important health outcomes); and (iii) treatable (as demonstrated through clinical trials, or not yet treatable but recognised as a priority for future therapeutic research). The authors demonstrate how ‘treatable traits’ may apply to patients with acute respiratory exacerbations, and in doing so, highlight novel aspects of care (e.g. frailty) that do not regularly feature in acute respiratory healthcare models. These could have important impacts upon future clinical practice.

The second expert review by Bourbeau and Echevarria³ describes recent advances in the area of chronic lung disease self-management and innovations to the models of healthcare used to manage acute

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respiratory exacerbations. It reviews the roles and costs associated with substituting aspects of in-hospital care with alternatives delivered via domiciliary programmes (e.g. hospital-in-the-home), and the interest and evidence surrounding care ‘bundles’. These packages have long been considered a useful way to standardise the delivery of important aspects of care, ranging from the management of respiratory acidosis and responsible antibiotic stewardship in the early phases of admission, through to supporting smoking cessation, reviewing inhaler technique and evaluating suitability for pulmonary rehabilitation closer to discharge. They have not, however, proven immune to implementation challenges.⁴ The authors provide insights into the ways these aspects of care may be improved in the future, reiterating a need for improved personalisation of care to individuals’ disease severity and self-management abilities. They also emphasise the importance of developing appropriate evaluation frameworks that allow for due recognition of the value of care quality in addition to established metrics related to short-term readmission rates.

Several other pertinent aspects of care are examined in other unsolicited contributions to this special collection. Many, but not all, of these papers pertain to patients with acute exacerbations of chronic obstructive pulmonary disease, perhaps reflective of the ongoing challenges that acute healthcare providers face to optimally manage this patient group. Read the whole collection and you will gain valuable insights spanning a diverse range of study designs, exploration of issues via quantitative and qualitative methodologies, focused reports of physiotherapeutic practices from different countries across the globe,^{5,6} updates regarding instrument validation (De Morton Mobility Index) for use in the acute hospital environment,⁷ evaluations of biomarker utility⁸ and clinical stratification⁹ during acute exacerbations of interstitial lung disease and exploration of issues affecting rates of pulmonary rehabilitation uptake in the period after acute respiratory exacerbations.^{10,11}

Suffice to say, whether you are a clinician, researcher, healthcare policy maker or an individual affected by chronic respiratory disease, we hope you will find something that will appeal to your interests within this special collection.

So, read on, enjoy and start a conversation with your colleagues!


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