DOI: https://doi.org/10.54393/pjhs.v5i09.2291

PAKISTAN JOURNAL OF HEALTH SCIENCES
(LAHORE)
https://thejas.com.pk/index.php/pjhs
ISSN (P): 2790-9352, (E): 2790-9344
Volume 5, Issue 9 (September 2024)

Chronic Respiratory Diseases: Innovations in Treatment and Management

OPEN ACCESS

Sami Ullah Mumtaz[1]

[1]King Edward Medical University, Lahore, Pakistan
drsumumtaz@gmail.com

ARTICLE INFO

How to Cite:

Mumtaz, S. U. (2024). Chronic Respiratory Diseases: Innovations in Treatment and Management. Pakistan Journal of Health Sciences (Lahore), 5(09). https://doi.org/10.54393/pjhs.v5i09.2291

Chronic Respiratory Diseases (CRDs) include diseases of the airways and the lung and are among the major causes of morbidity and mortality worldwide. The major CRDs include asthma, chronic obstructive pulmonary disease (COPD), pulmonary sarcoidosis, pneumoconiosis and interstitial lung diseases (ILDs). The common symptoms of CRDs include wheezing, chest tightness, shortness of breath and cough [1]. These diseases affect millions of people across the globe and have significant impacts on patients' quality of life and healthcare.

Over the past few decades, however, improvement in the pharmacotherapy has provided a considerable progress. For example, biologics have given a new insight in the management of severe asthma by modulating certain inflammatory processes. Medications like omalizumab, dupilumab, and Mepolizumab are aimed at adjusting the immune response and significantly decrease the frequency of exacerbations and increase overall lung function.

In addition, innovations in the field of stem cell therapy and tissue engineering are targeted to repair or replace diseased lung tissue, thus, being aimed at treating the origin of the diseases rather than simply alleviating the symptoms. Furthermore, Nanoparticles can be orally given, intravenously injected or inhaled using nanoparticle aerosols. Nanoparticles can also be used in the molecular imaging of chronic lung diseases such as COPD.

Advanced inhalers, developed with sensors, can monitor the usage of medication and provide feedback in real-time to ensure compliance to prescriptions and other salient treatment plans. COPD pulmonary rehabilitation programs of exercise and education together with psychological support for individuals have been documented to enhance quality of life. The use of AI and a machine learning system has now moved to the ability to forecast disease exacerbations and provide individualized recommendations for treatment of CRDs.

As a result, people with COPD receive care through various healthcare professions like doctors, nurses, and physiotherapists, which may have diverse roles, such as prescribing medications, supporting their self-management or patient education, or delivering exercise training. The aim of an Integrated Disease Management (IDM) programme is that various aspects of care through which healthcare providers are working in coordination to deliver improved and optimum care to patients.

Similarly Advancements in the treatment of ILD are being conducted, and recently, some new FDA-approved drugs have been advised for the management of patients. Among these are Nintedanib is a tyrosine kinase inhibitor, Pirfenidone an anti-fibrotic and anti-thrombotic agent and Treprostinil is an analogue of prostacyclin. These drugs have opened a new path for the treatment of ILD and have improved the recovery outcomes of patients [2]. Rituximab has also been found to be effective in more than half of patients treated in a small prospective open-label trial of refractory pulmonary disease in sarcoidosis[3].

Overall, there is a renewed emphasis on CRD management as a burgeoning field. With the advancement in the research in the personalized, proactive and integrative strategy the efforts made will lay down new avenues of better health outcomes for millions of people suffering from the CRDs. The future of respiratory health is bright as it is a growing field that has no sign of discontinuing its steady development and pushing for the comforts and breakthroughs for many patients across the globe.

DOI: https://doi.org/10.54393/pjhs.v5i09.2291

REFERENCES

[1] Agustí A, Celli BR, Criner GJ, Halpin D, Anzueto A, Barnes P *et al.* Global Initiative for Chronic Obstructive Lung Disease 2023 Report: GOLD Executive Summary. American Journal of Respiratory and Critical Care Medicine. 2023 Apr; 207(7): 819-37. doi: 10.1164/rccm.202301-0106PP.

[2] Bang AA, Bang S, Bang A, Acharya S, Shukla S. Recent Advances in the Treatment of Interstitial Lung Diseases. Cureus. 2023 Oct 31;15(10):e48016. doi: 10.7759/cureus.48016.

[3] Gupta R, Judson MA, Baughman RP. Management of advanced pulmonary sarcoidosis. American journal of respiratory and critical care medicine. 2022 Mar 1;205(5):495-506. doi:10.1164/rccm.202106-1366CI