Chapter 4
Novel Healthcare Trends: A Bibliometric Exploration of Immunomodulatory Therapies

Pragya Karnwal
https://orcid.org/0009-0003-2820-2333
Graphic Era University, India

Madhav Chaudhary
https://orcid.org/0009-0009-5840-2057
Graphic Era University, India

Shweta Bajaj
https://orcid.org/0000-0002-1177-6352
Graphic Era University, India

Rajesh Tiwari
https://orcid.org/0000-0002-5345-2508
Graphic Era University, India

ABSTRACT

Immunomodulatory drugs (IMDs) play important role in advancing therapeutic treatments across various diseases, especially autoimmune disorders, viral infections and haematological malignancies. This bibliometric review highlights the impact of immunomodulatory therapies such as immunoglobulins, antivirals, and CAR-T cell therapies, focusing on their efficacy in managing conditions like relapsed multiple myeloma (RRMM), COVID-19, and autoimmune disorders. Key findings from the Scopus database, covering a wide span of immunomodulatory treatments, are analysed to identify research trends, influential studies and collaborations. Citation analysis reveals that the United States leads in research outcomes, while countries like Belgium and the Netherlands show significantly higher citation per document,

DOI: 10.4018/979-8-3693-9112-9.ch004

demonstrating impactful but less frequent publications. The review explores a strong trend towards the development of more effective immunotherapies, focusing on future potential in clinical applications.

INTRODUCTION

Focusing on novel therapeutic approaches, the study highlights into haematological malignancies in multiple myeloma, showcasing significant progress in immunotherapy (Moreau et al., 2022). Cilta-cel therapy demonstrated a high overall response rate of 97.9% in refractory multiple myeloma, with 82.5% of patients attaining stringent complete responses at 28 months median flow up (Martin et al., 2023). Novel SARS-CoV-2 variants highlights diagnostic and therapeutic challenges. The advancements in antiviral drugs, vaccines and their mechanisms have been reviewed (Fernandes et al 2022). Updated CIDP guidelines simplifies diagnostic criteria and classifies CIDP variants as distinct entities. IVIg or corticosteroids remain first-line treatments, with additional strategies like plasma exchange and immunosuppressants (Van et al., 2021).

Therapeutic advancements for COVID-19 have resulted in approved antiviral and immunomodulatory treatments, including antiviral agents like remdesivir and immunomodulators such as baricitinib (Li et al., 2023). The updated CIDP guidelines differentiates between typical CIDP and well-characterized variants, redefining diagnostic certainty levels to "CIDP" and "possible CIDP" (Van et al., 2021). The Loco-Motion study demonstrated limited efficacy of SOC in patients with triple-class exposed RRMM patients, achieving 29.8% response rate, with median progression-free survival of 4.6 months and median overall survival of 12.4 months (Mateos et al., 2022). The 13-month follow-up of DREAMM-2 demonstrated sustained efficacy of belantamab mafadotin belamaf), achieving a 32% overall response rate in patients with heavily pretreated RRMM, within a median response duration of 11 months (Lonial et al., 2021). Cilta-cel, an anti-BCMA CAR-T therapy, demonstrated favourable outcomes in heavily pretreated relapsed/ multiple myeloma patients, achieving a 60% overall response rate and 35% MRD negativity (Cohen et al., 2023).

MPB-BA a mesoporous Prussian blue (MPB)-based nanoplatform, combining anti-inflammatory, antioxidant, and antibacterial properties modulates the Nrf2/ NF-$_{K}$B signalling pathway to effectively treat periodontitis (Tian et al., 2022). The POLARIS phase 1 trial identified that GPRC5D-targeted CAR T-cell therapy showed high efficacy and safety in relapsed multiple myeloma with a 100% overall response rate (Zhang et al., 2023). Both general and specific immunomodulatory therapies (e.g., methotrexate and TNF-alpha inhibitors respectively) have demonstrated