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High-Mobility Group Box 1 (HMGB1) Protein in Parkinson's Disease Research: A 10-Year Bibliometric Analysis
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Abstract
Background: Parkinson's disease (PD), the most prevalent motoric neurodegenerative disease, has been intensively studied to better comprehend its complicated pathogenesis. Chronic neuroinflammation is a major factor contributing to the development of PD. Reportedly, high-mobility group box 1 (HMGB1) protein is capable of mediating neuroinflammatory response. In this regard, knowledge mapping of the research linking HMGB1 to PD is necessary. Objective: Herein, we perform a dynamic and longitudinal bibliometric analysis to explore the hotspots and current trends of HMGB1-related PD publications during the past decade. Methods: All PD publications focusing on HMGB1 protein were retrieved from the PubMed database using the search terms "Parkinson's disease"and "hmgb1". Using filters, only English articles published between 2011 and 2022 were selected. The Bibliometrix and Biblioshiny packages from R software were used to conduct the bibliometric analysis. Results: The filtered search identified 47 articles (34 original articles and 13 review articles), published between 2011 and 2022. There was an increase trend in the number of articles published, with an annual growth rate of 19.35 percent. In terms of research and scientific collaboration in this field, the United States is in the lead, followed by China, Malaysia, and Australia. Compared to other countries, the United States and China had the highest level of collaboration in this research area. Neuroinflammation, microglia, and receptor for advanced glycation end-products (RAGE) represent the top three frontiers and hotspots for HMGB1-related PD research. According to the thematic evolution analysis, over the last decade, PD, HMGB1 and microglia were addressed individually, however, since 2017, these topics were frequently discussed within the same cluster: neuroinflammation. Furthermore, PD, HMGB1, and neuroinflammation domains co-occurred in majority of the research discussion. Conclusions: The link between HMGB1 and PD was realized a decade ago and becomes increasingly important over time. Our findings can aid scholars in comprehending the global context of HMGB1/PD relationship and provide significant insights for future PD research. © 2023 The Author(s).

Author Keywords
bibliometric analysis; high-mobility group box 1; microglia; neuroinflammation; Parkinson's disease

Index Keywords
advanced glycation end product receptor, high mobility group B1 protein; Article, astrocyte, Australia, autophagy (cellular), bibliometrics, China, degenerative disease, human, Malaysia, Medline, microglia, nerve degeneration, nervous system inflammation, Parkinson disease, systematic review, United States

Chemicals/CAS
advanced glycation end product receptor, 198785-73-8, 247590-69-8

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