World Academy of Science, Engineering and Technology
International Journal of Medical and Health Sciences
Vol:18, No:02, 2024

Analyzing the Evolution of Adverse Events in Pharmacovigilance: A Data-Driven Approach

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Abstract : This study presents a comprehensive data-driven analysis to understand the evolution of adverse events (AEs) in pharmacovigilance. Utilizing data from the FDA Adverse Event Reporting System (FAERS), we employed three analytical methods: rank-based, frequency-based, and percentage change analyses. These methods assessed temporal trends and patterns in AE reporting, focusing on various drug-active ingredients and patient demographics. Our findings reveal significant trends in AE occurrences, with both increasing and decreasing patterns from 2000 to 2023. This research highlights the importance of continuous monitoring and advanced analysis in pharmacovigilance, offering valuable insights for healthcare professionals and policymakers to enhance drug safety.

Keywords : event analysis, FDA adverse event reporting system, pharmacovigilance, temporal trend analysis
Conference Title : ICMHS 2024 : International Conference on Medical and Health Sciences
Conference Location : London, United Kingdom
Conference Dates : February 12-13, 2024