

A Review on Drug Safety and Pharmacovigilance

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Abstract: *Drug safety and pharmacovigilance are fundamental to ensuring the safe and effective use of pharmaceutical products. This review presents a comprehensive overview of current drug safety and pharmacovigilance practices, highlighting advancements in surveillance systems such as spontaneous reporting mechanisms and signal detection methodologies. Despite notable progress, persistent challenges including underreporting of adverse drug reactions (ADRs), data quality limitations, and regulatory disparities across regions continue to affect the effectiveness of pharmacovigilance systems. The review emphasizes the importance of collaborative efforts among regulatory authorities, healthcare professionals, pharmaceutical industries, and patients. Strategies for improvement include education and awareness initiatives, strengthening surveillance infrastructure, regulatory convergence, integration of advanced technologies such as artificial intelligence, and adoption of patient-centered approaches. Effective pharmacovigilance remains essential for maintaining public trust and ensuring the safety of pharmaceutical interventions worldwide.*

Keywords: Pharmacovigilance, Adverse Drug Reactions, Drug Safety, WHO, Reporting Systems, Signal Detection

