

Pharmacology and Pharmacognosy Principles and Applications

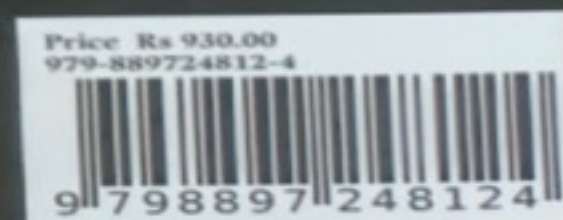


**Dr.C.Madhavi Latha
Dr.N.Krishna Chaitanya
Ms.CH.Ramadevi**

"Pharmacology and Pharmacognosy Principles and Applications" is a comprehensive guide exploring the fundamentals of drug action, sources, and therapeutic mechanisms alongside traditional and modern medicine. This book is covering 46 chapters written by various authors that covers biologics, gene therapy, nanopharmacology, pharmacogenomics, and drug-receptor interactions, while also highlighting herbal medicine, marine chemistry, toxicology, and ethnopharmacology. The book discusses clinical trials, pharmacovigilance, adverse drug reactions, and personalized medicine, bridging pharmaceutical advancements with natural therapeutics. With insights into synthetic vaccines, biotransformation, and alternative medicine systems like homeopathy and naturopathy, this resource is essential for students, researchers, and professionals in pharmaceutical sciences.

About Authors

All the authors (Dr.C.Madhavi Latha, Dr.N.Krishna Chaitanya, and Ms.CH.Ramadevi) are from Sree Venkateswara group of insitutions, North Rajupalem, Nellore District, Andhra Pradesh, India



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PHARMACOVIGILANCE

Rupali Done^{1st}, Nitin Dumore¹, Aarti Thakre¹

Dadasaheb Balpande College of Pharmacy, Nagpur, Maharashtra-440037.

Email ID: rupalidone99@gmail.com, Contact no. 9665318165

Abstract: Pharmacovigilance (PV) in the pharmaceutical business is relatively new. PV has grown significantly over the past 20 years and currently interacts with many other fields in the field of research and development. As a result of this expansion, the medical community is now more aware of and interested in PV's functions. Pharmacovigilance is like a sunshade to describe the processes for monitoring and evaluating ADRs and it is a key component of effective drug regulation systems, clinical practice, and public health programmes. The number of Adverse Drug Reactions (ADRs) reported increased the volume of data handled, and to understand the pharmacovigilance, a high level of expertise is required to rapidly detect drug risks as well as to defend the product against an inappropriate removal. An extensive review of the concepts, procedures, and techniques related to pharmacovigilance is given in this chapter. The regulatory frameworks that oversee pharmacovigilance operations are covered, along with international standards issued by organizations like the U.S. Food and Drug Administration (FDA) and the World Health Organization (WHO). The significance of spontaneous reporting systems and post-marketing surveillance in detecting adverse drug reactions (ADRs) that were previously unknown is emphasized. To improve drug safety, the chapter also discusses cutting-edge technology like data mining, signal detection, and risk management techniques. Additionally, it examines the moral, legal, and societal aspects of pharmacovigilance, emphasizing the part that patients, healthcare providers, and regulatory bodies play in preserving the benefit-risk ratio of medications. For professionals, researchers, and students involved in drug safety and public health, this chapter is a vital resource.

Keyword: Pharmacovigilance, Adverse Drug Reaction, Patient Safety, Pharmacogenomics,

1. Introduction to Pharmacovigilance

1.1. Definition:

Pharmacovigilance is defined as science and activities associated with detecting, understanding, assessing, and preventing drugs' adverse effects and other expected problems. According to reports, pharmacovigilance plays a crucial role in ensuring that the patient and the physician are adequately informed about a particular treatment, which helps them make decisions about which medication is best. Pharmacovigilance is currently facing challenges in providing worldwide systems for improved healthcare. Globalization, online information and sales, safety concerns, evaluation of established items, rising countries, and additional concerns are some of the main obstacles.

1.2. History and Evolution:

During the early days of drug use, there were few formal systems for monitoring safety, leading to anecdotal reports and adverse drug responses. Thalidomide, a sedative, was sold to pregnant women in the late 1950s. Thalidomide, commonly used in Canada, the UK, and Europe, caused birth abnormalities in babies, leading to a major public health emergency in the early 1960s. This tragedy highlighted the need for stronger safety monitoring systems and flaws in drug approval procedures.