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Editorial

Pharmacology

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EDITORIAL NOTE

Pharmacology is a branch of medicine and pharmaceutical sciences concerned with drug or medication action, where a drug may be defined as any artificial, natural, or endogenous (from within the body) molecule which exerts a biochemical or physiological effect on the cell, tissue, organ, or organism (sometimes the word pharma on is used as a term to encompass these endogenous and exogenous bioactive species). More specifically, it is the study of the interactions that occur between a living organism and chemicals that affect normal or abnormal biochemical function. If substances have medicinal properties, they are considered pharmaceuticals.

The field encompasses drug composition and properties, synthesis and drug design, molecular and cellular mechanisms, organ/systems mechanisms, signal transduction/cellular communication, molecular diagnostics, interactions, chemical biology, therapy, and medical applications and ant pathogenic capabilities. The two main areas of pharmacology are pharmacodynamics and pharmacokinetics. Pharmacodynamics studies the effects of a drug on biological systems, and pharmacokinetics studies the effects of biological systems on a drug. In broad terms, pharmacodynamics discusses the chemicals with biological receptors, and pharmacokinetics discusses the absorption, distribution, metabolism, and excretion (ADME) of chemicals from the biological systems. Pharmacology is not synonymous with pharmacy and the two terms are frequently confused. Pharmacology, a biomedical science, deals with the research, discovery, and characterization of chemicals which show biological effects and the elucidation of cellular and organismal function in relation to these chemicals. In contrast, pharmacy, a health services profession, is concerned with the application of the principles learned from pharmacology in its clinical settings; whether it is in a dispensing or clinical care role. In either field, the primary contrast between the two is their distinctions between direct-patient care, pharmacy practice, and the science-oriented research field, driven by pharmacology.

Origins of clinical pharmacology date back to the middle Ages, with pharmacognosy and Avicenna's The Canon of Medicine, Peter of Spain's Commentary on Isaac, and John of St Amand's Commentary on the Antedotary of Nicholas. Early pharmacology focused on herbalism and natural substances, mainly plant extracts. Medicines were compiled in books called pharmacopoeias. Crude drugs have been used since prehistory as a preparation of substances from natural sources. However, the active ingredient of crude drugs is not purified and the substance is adulterated with other substances. Traditional medicine varies between cultures and may be specific to a particular culture, such as in traditional Chinese, Mongolian, Tibetan and Korean medicine. However much of this has since been regarded as pseudoscience. Pharmacological substances known as entheogens may have spiritual and religious use and historical The context.

In the 17th century, the English physician Nicholas Culpeper translated and used pharmacological texts. Culpeper detailed plants and the conditions they could treat. In the 18th century, much of clinical pharmacology was established by the work of William Withering. Pharmacology as a scientific discipline did not further advance until the mid-19th century amid the great biomedical resurgence of that period. Before the second half of the nineteenth century, the remarkable potency and specificity of the actions of drugs such as morphine, quinine and digitalis were explained vaguely and with reference to extraordinary chemical powers and affinities to certain organs or tissues. The first pharmacology department was set up by Rudolf Buchheim in 1847, in recognition of the need to understand how therapeutic drugs and poisons produced their effects. Subsequently, the first pharmacology department in England was set up in 1905 at University College London..

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