Journal of Pharmacological Reports

OPEN ACCESS Freely available online

Editorial

Scientific study of adverse effect of drugs on living organisms

Mohammad Adam*

Department of Pharmacology and toxicology, School of Pharmacy, College of Medicine and Health Sciences, University of Ethopia

ABSTRACT

Toxicology could also be a science, overlapping with biology, chemistry, pharmacology, and medicine, that involves the study of the adverse effects of chemical substances on living organisms and thus the practice of diagnosing and treating exposures to toxins and toxicants. The connection between dose and its effects on the exposed organism is of high significance in toxicology. Factors that influence chemical toxicity include the dosage, duration of exposure (whether it's acute or chronic), route of exposure, species, age, sex, and environment. Toxicologists are experts on poisons and poisoning. There's a movement for evidence-based toxicology as a neighborhood of the larger movement towards evidence-based practices. Toxicology is currently contributing to the world of Cancer research, since some toxins are often used as drugs for killing tumor cells. One prime example of this is often Ribosome Inactivating Proteins, tested within the treatment of Leukemia

Keywords: Toxicology, pharmacology, toxicants

INTRODUCTION

The discipline of evidence-based toxicology strives to transparently, consistently, and objectively assess available scientific evidence so as to answer questions in toxicology the study of the adverse effects of chemical, physical, or biological agents on living organisms and therefore the environment, including the prevention and amelioration of such effects. Evidence-based toxicology has the potential to deal with concerns within the toxicological community about the restrictions of current approaches to assessing the state of the science. These include concerns associated with transparency in deciding, synthesis of various sorts of evidence, and therefore the assessment of bias and credibility. Evidence-based toxicology has its roots within the larger movement towards evidence-based practices. Testing methods Toxicity experiments could also be conducted in vivo (using the entire animal) or in vitro (testing on isolated cells or tissues), or in silico (in a computer simulation).

Nonhuman animals

The classic experimental tool of toxicology is testing on non-human animals .Example of model organisms are bee moth, which may replace small mammals, and Zebrafish, which permit for the study of toxicology during a lower order vertebrate in vivo As of 2014, such animal testing provides information that's not available by other means about how substances function during a living organism. The use of non-human animals for toxicology testing is opposed by some organizations for reasons of animal welfare, and it's been restricted or banned under some circumstances in certain regions, like the testing of cosmetics within the European Union.

Alternative testing methods

While testing in animal models remains as a way of estimating in 2007 the American NGO National Academy of Sciences published a report called "Toxicity Testing within the 21st Century: A Vision and a Strategy" which opened with a statement: "Change often involves a pivotal event that builds on previous history and opens the door to a replacement era. Pivotal events in science include the invention of penicillin, the elucidation of the DNA helix, and therefore the development of computers. ...Toxicity testing is approaching such a scientific pivot point. It's poised to need advantage of the revolutions in biology and biotechnology. Advances in toxic genomics, bioinformatics, systems biology, epigenetics, and computational toxicology could transform toxicity testing from a system supported whole-animal testing to at least one founded totally on in vitro methods that evaluate changes in biologic processes using cells, cell lines, or cellular components, preferably of human origin. As of 2014 that vision was still unrealized.

REFERENCES

1. Human Health Toxicity Assessment". United States Environmental Protection Agencies.
2. S.; Hartung, T (2006). "Toward an evidence-based toxicology". Hum Exp Toxicol. 25 (9): 497–513. ^ "How do you define toxicology?". Society of Toxicology. Retrieved 2017-06-17.
3. M.; Andersen, M.; Becker, R.A.; Betts, K.; et al. (2013). "Evidence-based toxicology for the 21st century: Opportunities and challenges". ALTEX. 30 (1): 74.

***Correspondence to**: Lucas, Department of pharmacology, School of Pharmacy, University of, Ethiopia.

Received: January 05, 2021; **Accepted:** January 16, 2021; **Published:** January 22, 2021

Citation: Lucas N (2021) Scientific study of adverse effect of drugs on living organisms. J Pharma Reports 5: e105.