

IS ANIMAL STUDY IMPORTANT**Dr. Garima***

Assistant Professor, SAS Ayurvedic Medical College and Hospital, Varanasi.

***Corresponding Author: Dr. Garima**

Assistant Professor, SAS Ayurvedic Medical College and Hospital, Varanasi.

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ABSTRACT

Ayurveda, the science of healthful living, is the most rational and scientific among the ancient systems of medicine. Ayurveda has immense potential to tackle many medical problems. Agadtantra is the branch of Astangaayurveda, which described the toxicological study. Use of an animal for experimental or other scientific purposes which may cause pain, suffering, distress or lasting harm. Animals are sacrifices new drug manufacture, improve its quality, its effectiveness, safety testing of drugs and other products. For avoidance of risk factors in humans, its prevention, diagnosis, treatment of disease firstly experimental study to be conducted to kill the ill-health and its related symptoms.

KEYWORDS: cause pain, suffering, distress or lasting harm.**INTRODUCTION**

Toxicology is the science concerned with identifying and understanding the mechanisms of agents adversely affecting the health of humans, animals and environment. It is also concerned with those man-made chemical agents adversely affecting the health of humans. Animals used in research are mainly small mammals such as mice, rats, guinea pigs, and rabbits, fish and birds are used for specific investigations. Mice (68%) and rats (13%) are still the most commonly used animals and are also most often killed for organ extraction.^[1]

TOXICOLOGICAL TESTING

ACUTE TOXICITY- The acute Study is the effect of a single dose, on a particular animal species. It used two type of animals which is Rodent and non-Rodent. In this, the duration of the study is 14 days. Mortality caused by the drug product during the experimental period are recorded by the morphological, pathological and histological changes present in dead animals.

SUBACUTE TOXICOLOGY- The subacute study we can be used by the two species in this one should be non-Rodent. the dose is depending on the target tissue level. An observational study is 28 days study. We should monitor and recorded behavioural, physiological, pathological parameters and microscopic observation etc.

CHRONIC TOXICITY- In this study rodent and non-rodent rats are used in the observation of 30- 90 days. After finished this procedure we should sacrifice all the rats and observed gross pathological and histopathological examination.^[2]

DIFFERENT ANIMALS USED IN STUDY

S.NO.	ANIMALS	EXPERIMENTATION IN RESEARCH PURPOSE
1.	Mouse, Rats	Metabolic disorder
		Genome disorder
2.	Dogs	osteosynthesis
		Transplantation surgery
3.	Non-primates	Vaccine develop
		HIV research
4.	Rabbits	Development of vaccines
		Efficacy effect of drug
5.	Pigs, cattle, horse	Vaccine development and isolation
		Veterinary research
6.	cats	Heart surgery
		Research in hearing aids

MODELS FOR TOXICITY TESTING AND RESEARCH

IN VIVO (INTACT HIGHER ORGANISM)- we should use rats and rabbits etc. They have been a full range of organismic response. But the disadvantages are cost-effective, animal ethical committee clearance is important.

LOWER ORGANISMS - In this study, we should use fish and earthworm etc lower organisms are used. In this study organism's response are integrated. But they are frequent lack of response than the higher organisms and animal welfare concerns are needed for such type of study.

ISOLATED ORGANS- we can use the isolated organs for the experimental study and in this, we can also take the vascular system. But the environmental and external exposure is maintained for this particular type of study. In this, the donor organisms still required it is also time-consuming, expensive and no intact organisms' response are the disadvantages of this study.

CULTURED CELLS- this is also a useful technique for the study and we can use a tissue or cells of particular studies. In this intact animal directly involved, we had the ability to carefully manipulate the system, low-cost range needed and a wide range of variables can be studied. But the disadvantages are instability of system can be found in this study. Limited enzymatic capabilities and organism's response are the disadvantages.

CPCSEA GUIDELINES ON SPECIFIC ASPECTS REGARDING THE USE OF ANIMALS IN SCIENTIFIC EXPERIMENTS

- Committee for the purpose of control and supervision of experiments on the animal is needed to avoid/ minimize pain and suffering inflicted on experiments animals.
- Receiving a proper storage area for food and bedding and proper space for administration, supervision, and direction of the facilities.
- Washing and sterilization equipment and supplies proper feeding equipment is needed.^[3]

POWER OF THE INSTITUTIONAL ANIMAL ETHICS COMMITTEE (IAEC)

Registration of establishment conducting animal experimentation or breeding of animals for this purpose. Selection and assignment of nominees for the institutional animal ethics committee of the establishment. Approval of animal house facilities on the basis of reports of an inspection conducted by CPCSEA. Recommendation for import of animal for use in experiments. Conduct the training programmes for the nominees of CPCSEA.^[4]

INSPECTION OF ANIMAL HOUSE FACILITIES

Both announced and unannounced visits by duly authorized personnel only to inspect the animal house facilities of institutes may be carried out. Must report their finding to the CPCSEA for further action. Selection of an animal model and an ideal animal model is one in which the anatomy and physiology match the human being for specific study design.

ALTERNATIVES TO ANIMAL EXPERIMENTATION

- Tissue cells from animal or human tissue are often used and then bred further in a laboratory culture.
- These experimental methods outside the organism – known as “in vitro methods” (in vitro = in the test tube) – are of major importance and are widely used, particularly to elucidate cellular processes.

- Another method for avoiding experiments on live animals comes from regenerative medicine and is known as “body on a chip.”
- This method was developed from tissue engineering or bioprinting, whereby replacement organs for humans are grown from human tissue and created using a 3D printer.
- These mini-organs are placed on a microchip and supported by an artificial maintenance system. Sensors on the microchip measure certain parameters, such as organ temperature and oxygen content, and record changes in the system.
- The “body on a chip” method is used for testing the toxicity or pharmacological properties of biological and chemical substances.

CHALLENGES IN THIS FIELD

In India, animals have been considered sacred. The animal experimentations are in a primitive stage in India due to poor infrastructure in most institutes, lack of expertise in handling animals, decreased of adequate funding and lack of interest in basic research workers. Organizations like PETA [People for Ethical Treatment of Animals], IFAW [International Fund for Animal Welfare] etc., have protested against animal experiments. primates were housed in old, rusty cages, and they were inappropriately grouped for their social behaviour patterns. Scientists at AIIMS have not submitted required final reports for nearly half of the 339 projects which they completed between 1991 and 2000.^[5] Appropriate permissions from animal welfare boards, maintenance of highest standards of care of animals with the current law on animals and their use is essential to avoid trouble from the animal rights activists.

CONCLUSION

Ayurveda is a science of life, they help to prevent many diseased conditions. Animal experimentation are important for new drug trial so that sometimes animal scarification is not required for all the new drug preparation. So that in many cases we are avoid to do animal scarification. In this many other advanced techniques are also helpful instead of animal experimentation. There is PETA group prevents the illegal experimentation of animal but we are also able to do that thing so that minimum animal is sacrifice in our drug manufacturing.

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