

Acute Oral Toxicity Study of Abhraka Navaneedha Chenduram: A Classical Siddha Drug

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ABSTRACT:

Biotite mica, known as Krishna abhrakam a rock forming mineral has been processed and used as medicine in siddha system of medicine. Numerous preparations containing abhrakam were found in siddha literature. Abhraka navaneedha chenduram is one such preparation found in Agasthiar chenduram 300 a classical siddha literature mentioned for treating *mega neer* (Diseases having polyurea as predominant symptom) .In this study acute oral toxicity of abhraka navaneedha chenduram in wistar albino rats as per OECD 423 guidelines was performed. Abhraka navaneedha chenduram (ABNC) was administered at 2000mg/kg P.O in female wistar rats and animals were observed for toxic signs for first 30 minutes, 1st, 2nd, 4th and 6th hours on the day of dosing and next 14 days. Gross pathology was performed at the end of the study. No treatment related deaths, toxic signs and gross pathological changes were observed with abhraka navaneedha chenduram administration. Acute oral toxicity study reveals that LD50 of abhraka navaneedha chenduram is greater than 2000mg/kg body weight in fasted female wistar rats and can be classified as Globally Harmonized system of classification and labelling of chemicals (GHS) category 5.

INTRODUCTION:

Abhrakam a rock forming mineral has been used as a drug for treating *mega neer, neer kattu, neer kirichiram* (diseases having oliguric & polyuric symptoms) Siddha texts such as *Theraiyar sekarappa* emphasis the need to purify raw abhrakam before administering it to patients, as not properly processed abhrakam can cause serious adverse effects. abhraka navaneedha chenduram is a classical siddha formulation described in the siddha literature *agathiyar chenduram 300* for treating *meganeer 20* (20 types of *megam*) . This study is aimed to evaluate the acute toxicity of abhraka navaneedha Chenduram in female wistar rats.

MATERIALS AND METHODS:

PREPARATION OF ABHRAKA NAVANEEDHA CHENDURAM:

Abhraka navaneedha chenduram (ABNC) was prepared as per the procedure and standards mentioned in the text *agathiyar chenduram 300* . The raw mineral drugs and botanicals were authenticated by experts in Department of Gunapadam at Government siddha medical college Palayamkottai.

TEST ANIMALS:

Female non-pregnant wistar albino rats of 9 to 11 weeks of age weighing between 150-180g were used. Animals were obtained from veterinary college and research institute, VCRI, Tirunelveli. Animals were

housed in polypropylene cages in a ventilated room under ambient temperature of 22+/-2 and 45-60% humidity, with a 12 hour light/dark artificial photoperiod. Animals received RO water *ad libitum* and fed with standard rodent pellets. All animals were acclimatized in the experimental room for a period of 7 days before the beginning of the study. Animals were used with the approval of Institutional Animal ethical committee of VCRI,Tirunelveli (Proposal number-19/ SA/IAEC/VPT,VCRI,TNI/2023).

Acute toxicity study - OECD 423 guidelines

Six healthy non-pregnant female wistar rats of 9 to 11 weeks of age were randomly chosen for the conduct of the present study and divided into two groups(n=3,female wistar rats). All animals were fasted overnight before drug treatment . Abhraka navaneedha chenduram was suspended in distilled water and administered to all animals by oral gavage using syringe and stainless ball-tipped oral gavage needle at the dose of 2000mg/kg body weight and observed for toxic signs for first 30 minutes , 1st , 2nd, 4th and 6th hours on the day of dosing and next 14 days.

Observation of animals for any clinical signs including General appearance(coat condition,body weight,posture) ,behavioural changes(Activity level,vocalisation ,social interaction) ,Respiratory signs(laboured breathing,nasal discharge) ,Gastrointestinal signs, neurological signs, ocular signs(discharge,redness, cloudiness), skin lesions, mobility etc ., At the end of 14days study period animals were euthanised and necropsy was Performed.observed for any gross pathological changes in all vital organs.

STATISTICS:

Statistical analysis was performed used simple t test.

RESULTS:

The test animals were observed for a period of 14 days for any morbidity and mortality. No animals were dead in both control and ABNC treated groups. No abnormal clinical signs were observed in both groups. Necropsy performed at the end of the study period showed no gross pathological changes in vital organs.

Clinical signs	Control group(n=3)	ABNC treated group(n=3)
Coat condition	Normal	Normal
Weight loss	Absent	Absent
Posture	Normal	Normal
Activity level	Normal	Normal
Vocalisation	Normal	Normal
Social interaction	Normal	Normal
Laboured breathing	Absent	Absent
convulsions	Absent	Absent
Lacrimation	Absent	period

skin lesions	Absent	Absent
Feed intake	Normal	Normal

Since mean difference, standard deviation are tend to be zero, there is no difference to test. Hence t-test is not applicable in this case.

CONCLUSION:

Acute oral toxicity study reveals that LD50 of abhraka navaneedha chenduram is greater than 2000mg/kg body weight in fasted female wistar rats and can be classified as Globally Harmonized system of classification and labelling of chemicals (GHS) category 5.

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