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Effect of Kaempferia Parviflora on Male Rat Sexual Activity and Its Toxicity

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ABSTRACT

Males have used Kaempferia parviflora Wall. Ex. Baker (Krachaidum) to increase their sex enhancement since antiquity. Themain aim is to investigate the effects of a K. parviflora ethanolic extract on the toxicity and sex behaviour of male rats. Three groups of rats received dosages of K. parviflora extract of 60, 120, 240 mg/kg body wt.2months, while the fourth set received distill water. With exception of the set that received maximum amount of extract, male rats in every setshowed significantly superior courtship behaviour within initial observation time than during the second and third 10-minute observation time combined. They displayed the same little courtship behaviour during the whole 30-minute activity, which was much less than the control group. There were no noticeable differences in mount and intromission frequency, mount and intromission latency amongwith treatment and control sets (IL). Blood parameters did not show significant variation in toxicologicalwork. Normal levels of aspartate aminotransferase, alanine aminotransferase, urea, and creatinine indicate that renal and liver function were not compromised at any of the dosages tested. Histology, however, revealed structural alterations inside the liver. The initial ten minutes of courting behaviour in rats was shown to be shortened by plant extracts at higher dose; hence, high and extended doses of this plant should be avoided in people at initial time.

Keywords: Sexual Activity, Rats, Toxicity, haematological study

INTRODUCTION

The herb Thai ginseng, also known as Kaempferia parviflora (Krachaidum), defined as strong sexbehavioural properties (Wutythamawech, 2000; Churdboonchart, 2000;). Its rhizomes have been used to cure dental problems, leucorrhea, stomach pain, promote good health, and relieve flatulence (Chomchalow et al, 2003). Nine flavonoids displayed antiplasmodial, antifungal, and antimycobacterial properties, according to in vitro tests (Yenjai et al, 2004). This plant showed beneficial benefits of dosages for 1 month at 60, 120 mg/kg for 30 days (Jitjaingam et al., 2005), however its strong sexual abilities have been contested. There are no scientific studies to back up or justify K. parviflora's potential consumer usage, despite the fact that Thai men have traditionally used it for sexual enhancement and it is often touted as having aphrodisiac effects. Using haematological measures, blood chemistry testing, and histological analysis, the toxicity of K. parviflora wasevaluated.

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MATERIALS AND METHOD

Animal testing

National Laboratory Animal Center in Delhi, India gave 31 male and 20 female Wistar rats at 6 weeks old. Two rats per cage had unrestricted access to food and water.

Extract K. parviflora Harvested K. parviflora. Roots were cut; boiled, crushed to a powder form, with ethanol 50% using Soxhlet device, then remove moisture. Different concentration was made by adding distill water.

Experimental arrangement

Rats were given 60, 120, 240 mg/kgbody weight K. parviflora concentration2 months. 1 ml of distilled water was given to the control group. Rats' body weight was observed. 1 and 2 months after each dosage, male-rat sexual behaviour was assessed. At the conclusion of therapy, haematological and chemical analysis were conducted.

Female screening

Each woman's estrous cycle stages were determined daily between 8 and 9 a.m. Vaginal fluids were put on slides. Unstained material was examined with 10 and 40 objective lenses. Following Norris (1997) and Marcones et al. According to Cicero et al., each female's estrous smear exhibited a high degree of sexual responsiveness (2001).

Sexual behaviour analysis

Male rats' sexual preferences were examined in a 10-minute glass observation box. Then, an estrus lady was monitored for 30 minutes. Courting behaviours, mount(ML) and intromission latency(IL), mount(MF), and intromission frequency(IF)were all recorded.

Blood Chemical and haematology test

Blood chemical tests, including aspartate aminotransferase (AST) alanine aminotransferase (ALT), blood urea nitrogen (BUN), creatinine (Crea), haematological tests, including white blood cell (WBC)complete blood count (CBC): haemoglobin, differential cell count and hematocrit. Histology Small liver and kidney blocks were observed (Gridley, 1960; Prophet et al, 1992). A pathologist examined each slide under a microscope.

Data analysis

To compare sexual behaviour between treatmentsANOVA and LSD were studied. All statistical studies used SPSS.

RESULTS

Sexual activity

Common courting behaviours among the male rats, such as frequencyand latency hasno significant varying between them. To monitor the sexual behaviour, three sessions of 10 minutes each were used. Except for those receiving the highest dosage of K. parviflora, all

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male rat groups displayed significantly more courting behaviour within initial timing than during second as well as third time. Male rats having 240 mg/kg BW showed significantly less courting behaviour during the first 10 minutes of observation than the control group, but there was no discernible change for the whole 30-minute session. The courting behaviour of male rats significantly decreased after receiving 240 mg/kg of K. parviflora root extract for 60 days without affecting their metabolic rate.

Toxicological analysis

Male rats given extracts of different dosages saw no appreciable differences in body weight gain from control rats. The typical body weight rose sharply across all categories. The CBCs of the control group were identical to those of all treatment groups. Male rats had significantly lower levels of haemoglobin (Hb) than those in the control and maximum dose groups, despite the fact that there was no relationship between extract dosage and Hb levels in these animals. Animals given highest and lowest dosages had considerably lesser AST levels, but no extract-treated group's ALT, BUN, or Crea levels changed significantly. Each team was flourishing (Sharp and La Regina, 1998). Despite the fact that treatment with K. parviflora on the kidneys had neither a visible nor microscopic effect, male rats given the extract showed a higher frequency of vacuolar cell hypertrophy in the liver.

DISCUSSION

Current investigation showedPlant dosage given to test toxicity and see how it affected their sexual behaviour of the animal used. Male rat mating behaviour, frequency and latency did not has significant impactwithK. parviflora dosage. Male rats given 240 mg/kg BW showed considerably less mating behaviour during the first 10 minutes of observation. The findings resultsto facilitate the plant material will not improve male rats' MF, IF, ML, and IL courtship behaviours. Additionally, it decreased the wooing behaviour that is necessary for sophisticated motor pattern sequencing courtship will not take place since the female's performance was not receiving enough stimulation (Knobil and Neill, 1998; Khan and Saxena, 2021). This plant may have an effect on rats in various circumstances (Ang and Ngai, 2001), on tested animals exhibiting impotence (Carro-Juarez et al., 2004) on other substance in animals having different ages (Ang et al, 2003). Despite the herb K. parviflora's good health reputation (Chomchalow et al., 2003; Wutythamawech, 2000), no impact on the body's general system (Norris, 1997). Equivalent blood parameters levels were seen during treatment sets compared to controls. Despite having much lower haemoglobin (Hb) than the control and highest-dose groups, male had lower AST levels than the control group. The absence of a relationship between extract dosage and modifications in Hb and AST in male rats suggests that the K. parviflora extract was not responsible for these changes. Every measurement fell within the expected bounds (Sharp and La Regina, 1998). The aforementioned findings showed renal role were unaffected. The liver cells of tested animal given plant dose, however, showed increase in vacuoles, which may be used to control blood glucose levels. The treatment with K. parviflora had no effect on either the gross or microscopic kidney findings (Fawcett, 1994). However, the material was shown to be durable

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by diastase digestion and periodic acid Schiff (PAS) techniques, suggesting that the component that collected in the vacuole was not glycogen. The morphology of the liver was solely affected by this pathologic finding. Every animal continued to live and develop in a healthy way during the whole experiment. The physiological and morphological effects could not have had enough time to completely manifest due to the sub-chronic administration of a lower dosage. Studies that showed the toxicity of other extracts in highest dose has lasted for extended time (Niho et al., 2001; Sanchanta et al., 2005). Results showed that no male rats were sexually enhanced by K. parviflora. The histology analysis also revealed a propensity toward hepatotoxicity. The long-term toxicity of large dosages of K. parviflora must be further researched. The ethanolic extract of K. parviflora, which may be potentially harmful to the liver's morphology, Blood chemistry as well as haematological parameter analysis has no changes in the treatment control sets. There should be taken into consideration to give people large and prolonged dosages of KP.

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