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EVALUATION OF ANXIOLYTIC ACTIVITY OF AQUEOUS EXTRACT OF VIOLA ODORATA ON ANIMAL MODELS

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ABSTRACT
There are a few universal symptoms of anxiety, and these include irritability, excessive worrying, sweating, restlessness as well as autonomic and neuroendocrine activity. It is possible that predisposing traits (or features) for obsessive anxiety arise from a complicated network of gene-environment intuition during development and life situations. Anxiety may manifest itselfin the mind, body, and behavior of animals and humans when a real or perceived threat to health or survival is present. Neuroendocrine, neurotransmitter, and neuroanatomical alterations are common features of mood and anxiety disorders. Among the several neurotransmitters, inhibitory GABA has long been considered the nerve centre for anxiety regulation. When it came to the elevated test, Group 4 (treatment group 2) fared the least. In comparison to the other groups, the group 3 (Treatment group 1) open field test estimate was pivotal. As a bonus, actophotometer results suggested that the protected group encountered much more visit- diminishing situations than the control group.

KEYWORDS: Open field test, Actophotometer, NeuroTransmiter, Anxiety, Neuroendocrine.

INTRODUCTION

Anxiety

"A mental, physiological, and behavioral condition caused in individuals by a threat to well- being or life," could be a common definition of uneasiness. Uneasiness is characterized by a number of shared characteristics, counting increased excitement and desire, as well as autonomicand neuroendocrine movement, and a move in conduct from supported exercises (like investigation or eating) to shirking or protection. These alterations assist you bargain with an upsetting or traumatic occasion. Be that as it may, in case uneasiness falls flat to serve its versatile reason, it may create into a neurotic state, lessening one's resilience and making it harder to bargain with the stresses of existence. Inclining factors (or characteristics) for obsessive uneasiness may emerge from a complex web of gene-environment intuitive all through advancement (particularly the perinatal period) and life circumstances (life occasions).[1]

Animal Models for Screening Anxiolytic Activity

Unconditioned Behavioral-based models

What happens in nature (intrinsic fear/avoidance) may be mirrored within the lab by examining unconditioned/ethological responses to different sorts of outside threats. It has been claimed that these models have incredible ethological legitimacy, permitting for a better dismemberment of how the tests influence conduct. Most of these hypotheses are predicated on the thought that being pushed into a new setting at the same time triggers sentiments of apprehension and interest, coming about within the classic approach-avoidance situation.[26]

ELEVATED PLUS MAZE

The Elevated plus maze comprises two encased arms and two open arms that are opposite to one another and suspended from the ground. Rats and rat are utilized for the test since of their curious nature and their common abhorrence to open, shining, and tall zones (spoken to by the open arms). Presentation to conventional anxiolytic solutions, such as benzodiazepines, upgrades investigation of the open arms, whereas restriction to the open arms causes physiological signs of push (expanded defecation and corticosterone levels). A few factors, counting as the lodging, light, circadian cycle vacillations, past dealing with or push introduction, and nature with the maze, impact the animals' standard action within the EPM. Cases of such stressors are foot stun, social overcome, and predator introduction, all of which have been appeared to essentially raise uneasiness levels in rats but the inverse impact in rat.

The extent of passages and term went through within the open arms speak to the major uneasiness marker, agreeing to investigate utilizing calculated investigation,

whereas the encased arm passages may be used as an uncontaminated degree of locomotor movement. Non-sedative doses of anxiolytics like diazepam improve the percentage/ratio of open arm investigation without changing the proportion or rate of encased arm investigation. Diverse Grp have recommended assessing other ethological components, such as hazard appraisal of the open arms and head plunging in these arms, to expand the model's affectability past these fundamental estimations.[27]

LIGHT AND DARK MODEL

This rat evasion conduct is utilized in a way that's conceptually comparable to the EPM. Amid the 5-minute session, creatures are free to wander an unused zone part between a dim and light segment (lit). This concept creates an inner pressure in rats between their intuitive desire to investigate and their want to remain absent from the brightly lit zone. Benzodiazepine and other anti-anxiety pharmaceutical treatments come about in more visits and longer periods of time within the enlightened compartment.

THE HOLE BOARD

The rodents may jab their heads through the gaps on the floor of the square field that produces the gap board. This moment activity, which has been given the moniker "head plunging," is the premise for the test since it has been appeared to be an honest to goodness marker of interest and apprehension. It is theorized that the degree of stress is conversely related to the number of times the head drops.

MATERIALS AND METHODS

Animals

Swiss albino mice strain (25-30g) were used for the study. The experimental mice were procured from Sainath Animal Agency, Musheerabad, Hyderabad, India. The mice were kept under standard well controlled conditions before and throughout the experimental duration. The temperature was maintained at 22°C (±3°C) and relative humidity was between 50-60%. The animals were given pellet diet and drinking water ad libitum, kept in 12h/h light/dark cycle and maintained for atleast 5 days prior to dosing to allow for acclimatization to laboratory conditions. The experimental protocol was given approval by Institutional Animal Ethical Committe and was carried under the compliance of IAEC guidelines. (IAEC/SUCP/2022/08).

Plant material collection and extraction

The Plants parts of Viola Odorata were collected from, identified and authenfied by Dr. Ghousia tabassum: Hyderabad Unani Research Foundation. Hyderabad, Telangana State. The plants were cleaned , shade dried, coarsely powdered and sieved through sieve no.100. The methanolic extract of Viola Odorata *was prepared.* This powder was used for solvent extraction. The MESAG was formulated in 2:2:1ratio(Viola Odorata About 250gms of powder poly herbal powder extract was subjected to soxhlet extraction using 500ml solvent ethanol. This cycle was repeated many times until the colour of the solvent in the siphon of the soxhlet faded away. The extract was concentrated on water bath. The MESAG was suspended in normal saline and administered orally.

Experimental Design

Male albino rat weighing 150-200gm will be used for this study.

A Total of 24 rats will be used in the present study. Experimental protocol: The animals will be divided into 4 groups, and each consists of 6 rats as follows.

Group I (Normal Control): Animals will receive normal diet and vehicle 0.5%w/v CMC by p.o. at a dose of 1ml/100gm body weight.

Group II (Standard): Animals will receive Diazepam (DZ) 10mg/kg body weight.

Group III (Treatment group): Animals will receive aqueous extract of Viola odorata 200mg/kg body weight in 0.5%w/v CMC by p.o.

Group IV (Treatment group): Animals will receive aqueous extract of Viola odorata 400mg/kg body weight in 0.5%w/v CMC by p.o.

RESULTS AND DISCUSSION

Tabel I: Effect of treatment groups on the locomotor activity of rats.

Groups	Locomotor activity (5 minutes)			
	Day 1	Day 7	Day 14	Day 21
Control	187.3	189.98	190.97	194.67
Standard	179.2	159.16	163.64	172.66
Treatment Group 1 (200mg/kg)	184.6	119.53	132.39	144.59
Treatment Group 2 (400mg/kg)	165.9	132.49	145.64	159.57

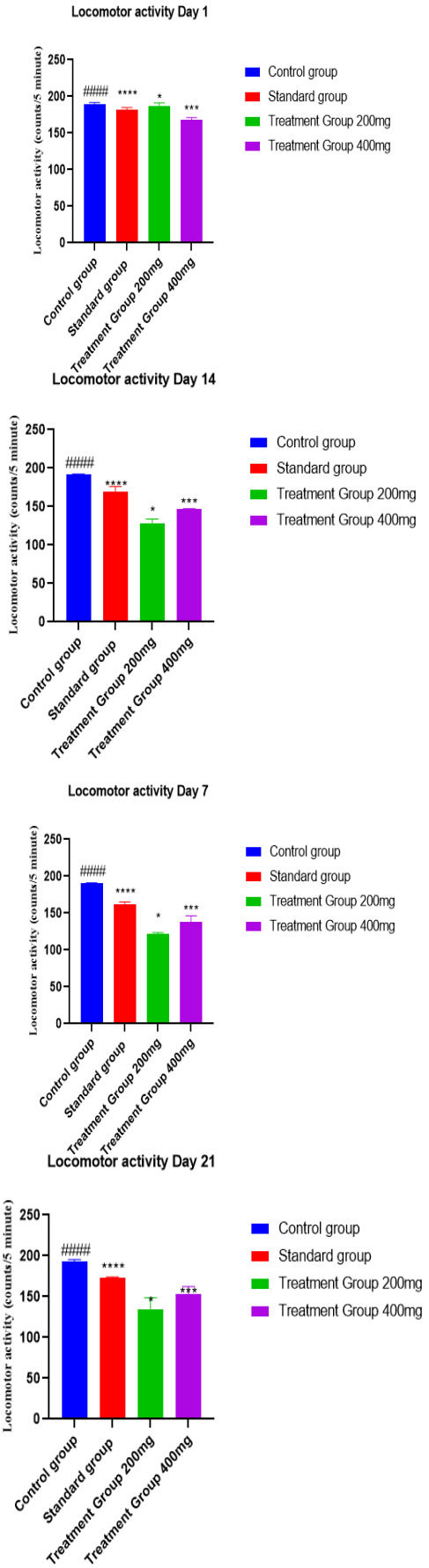

Figure-1: Effect of treatment groups on the locomotor activity of rats.

Tabel-2: Lipid Peroxidase(Lpo).

GROUPS	LPO µm of /H2O2/mgtissue
Normal	7.37
Standard	13.29
Treatment Group 1 (200mg/kg)	14.79
Treatment Group 2 (400mg/kg)	14.12

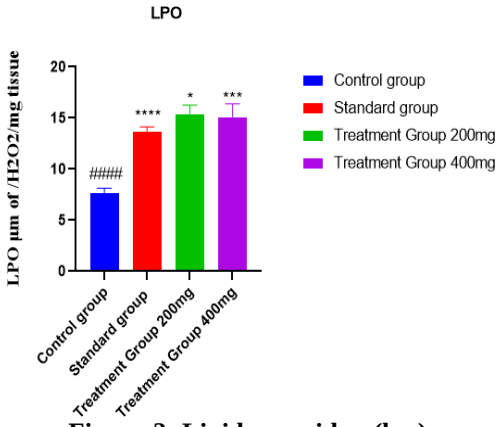

Figure-2: Lipid peroxidase(lpo).

Tabel 3: Serum oxidase Dismutase(SOD.

Group	SOD (unit/min/mgprotein)
Normal	0.94
Standard	1.65
Treatment Group 1 (200mg/kg)	1.34
Treatment Group 2 (400mg/kg)	1.26

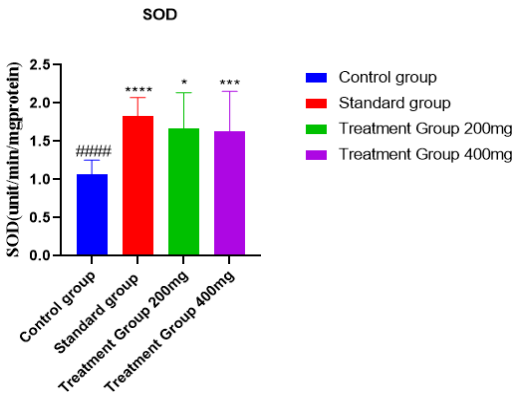

Figure-3: Serum oxidase Dismutase(SOD).

GSH

Tabel-4.

Group	Reduced GSH (Glutathione µg/mg)
Normal	7.34
Standard	6.12
Treatment Group 1 (200mg/kg)	5.37
Treatment Group 2 (400mg/kg)	4.65

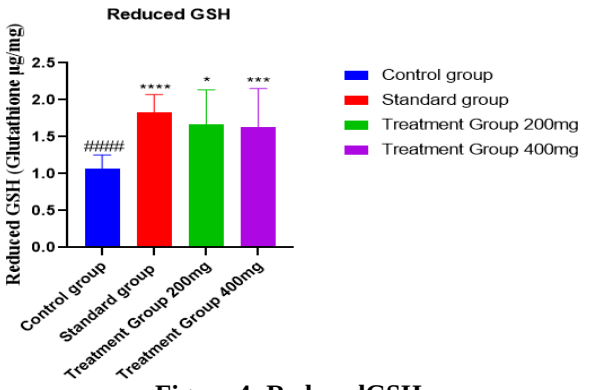

Figure 4: ReducedGSH.

DISCUSSION

Plants are known for their extensive use in traditional medicine as they are able to achieve desired pharmacological activity with less if not none adversities. Viola Odorata in the present study at a dose of 200mg/kg showed similar pharmacological results as that of standard drug Diazepam (10mg/kg).

On the elevated test, the treatment group 2 fared least when contrasted with the results of other groups. The findings of the actophotometer suggested that the Treatment group 1 showed best outcomes being close to the standard group. This was an anticipated benefit.

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