



STUDY OF THE DIURETIC ACTIVITY IN AQUEOUS EXTRACT OF ROOTS OF *ANACYCLUS PYRETHRUM* IN ALBINO WISTAR RATS

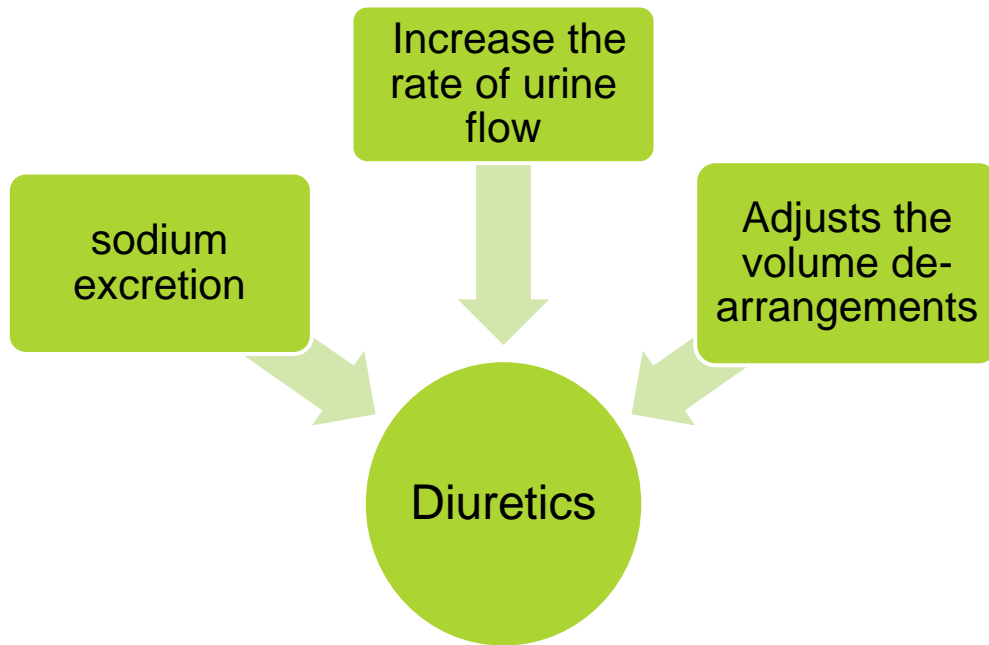
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INTRODUCTION

- ▶ Our Ancient traditional system of medicine and folklore used medicinal plants as a whole or their parts for all types of diseases successfully.
- ▶ Medicinal plants can be important sources of unknown chemical substances with potential therapeutic effects. Besides, the World Health Organization has estimated that over 75% of the world's population still relies on plant-derived medicines.

Indian ayurvedic system is rich in treating renal problems

INTRODUCTION



- Drug induced diuresis is beneficial in many life threatening disease conditions such as congestive heart failure, nephritic syndrome, cirrhosis, renal failure, hypertension and pregnancy toxemia
- Most diuretic drugs have the adverse effects on quality of life including impotence, fatigue and weakness.

Herbal medicines are in great demand in the developed as well as developing countries for primary health care because of their wide biological and medicinal activities, higher safety margins and lesser costs

Anacyclus pyrethrum



- ▶ *Anacyclus pyrethrum* in Sanskrit known as Akarakara is an important medicinal plant which is used in both Unani and Ayurveda.
- ▶ *Anacyclus pyrethrum* contains a number of Phyto- constituents, which reveals its uses for various therapeutic purposes. The roots can be used for the treatment of various disorders in human being such as immunostimulating effect, inhibitory effects, anti-depressant activity, anticonvulsant activity, myorelaxation activity, memory-enhancing aphrodisiacs, antimicrobial activity, and local anesthetic effect, insecticidal and Molluscicidal effect.
- ▶ Still more work is required with the. *Anacyclus pyrethrum* to investigate the mechanism of actions with other therapeutic activity



MATERIAL AND METHODS

Plant material :

- ▶ The fresh roots of *Anacyclus pyrethrum* were collected , identified and authenticated by , Central animal house, department of pharmacology, JSS medical college Mysuru. sample specimen code-CRF/14/329

Processing of sample :

- ▶ The fresh roots of *Anacyclus pyrethrum* plant were dried under shade for 20-25 days. The dried roots were pulverized into fine powder and used for extraction.

MATERIAL AND METHODS

Preparation of Aqueous extract of *Anacyclus pyrethrum* roots:

- ▶ The powdered roots was subjected for extraction process by maceration with water at room temperature for 7 days with intermittent stirring ,After extraction, the extract was filtered and concentrated to dryness & collected in screw caped bottles & stored in refrigerator.

Drugs and chemicals

- ▶ Distilled water, furosemide (Aventis pharma Ltd).Normal saline

Experimental animal

- ▶ Male wistar rats of 150-200gm were used to carry out the diuretic activity. The animals had free access to standard commercial diet and water *ad libitum* and were housed in cages under standard laboratory conditions i.e., 12:12 hour light/dark cycle at $25\pm 20^{\circ}\text{C}$., at central animal facility, JSS Medical College, Mysore.

INCLUSION CRITERIA:

- Rats weighing 150-200gms male
- Age 3-4 months.
- Healthy with normal behaviour and activity

▶ EXCLUSION CRITERIA:

- Pregnant and Diseased animals are not included in this study.

Experimental protocol.

- Lipchitz model of diuretic activity evaluation is used to do the experiment.
- The study groups will be divided as follows, each group having 6 rats (n=6)
- The animals were fasted overnight (18 h) prior to the test but with free access to tap water. Immediately after administration, the rats were paired and placed in

GROUP	DRUG
CONTROL	DISTILLED WATER(25ml/Kg body weight)p.o
STANDARD	FUROSEMIDE (20mg/kg body weight)p.o
TEST	AQUEOUS EXTRACT OF ROOTS OF <i>Anacyclus pyrethrum</i> (100mg/kg body weight)p.o

After 3 groups of animals received respective drug (distilled water, Furosemide & Test drugs)



Immediately after the administration the animals were kept in diuretic cages (2 per cage)



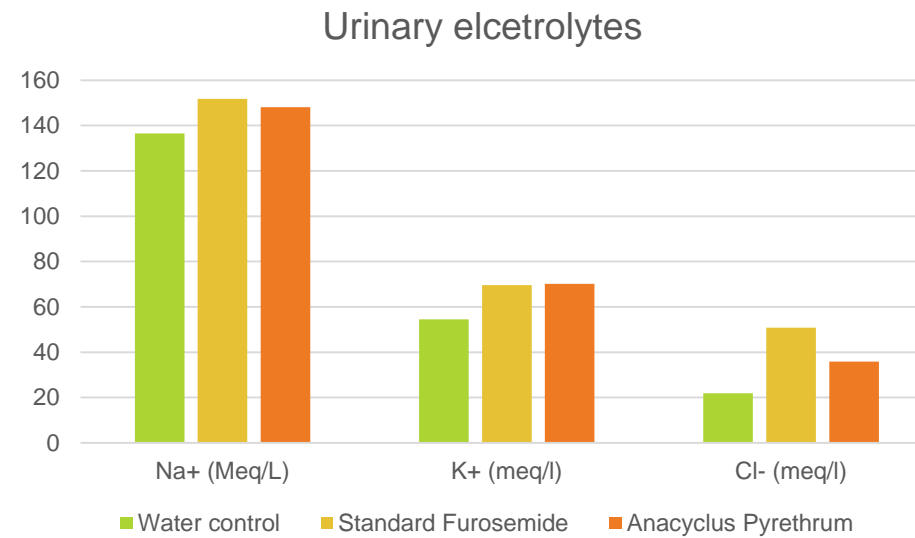
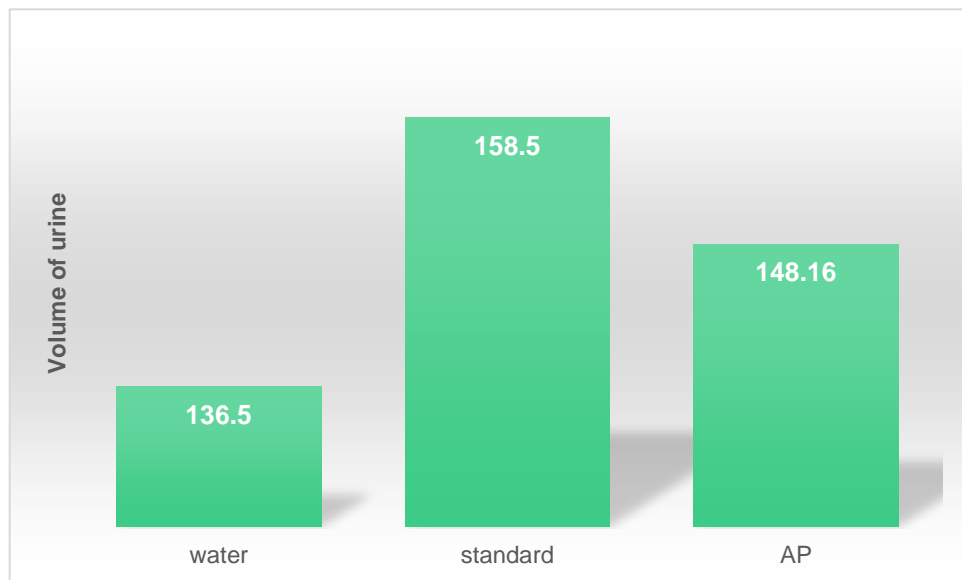
The total volume of urine will be collected at the end of 5hrs after dosing...



- The parameters monitored for the each individual rat were total urine volume and urine concentration of Na⁺, K⁺ and Cl.

GROUPS	Urinary electrolyte excretion			
	Mean urine volume (ml)	Na+ (Meq/L)	K+ (meq/l)	Cl- (meq/l)
Water control	2.15±0.32	136.5 ±3.61	54.5 ±4.5	21.83 ±4.07
Standard Furosemide	20.65±1.15	151.83 ±4.02	69.66 ±3.77	50.83 ±3.06
<i>Anacyclus Pyrethrum</i>	12.84±1.16	148.16 ±2.31	70.16 ±3.06	35.83 ±2.85

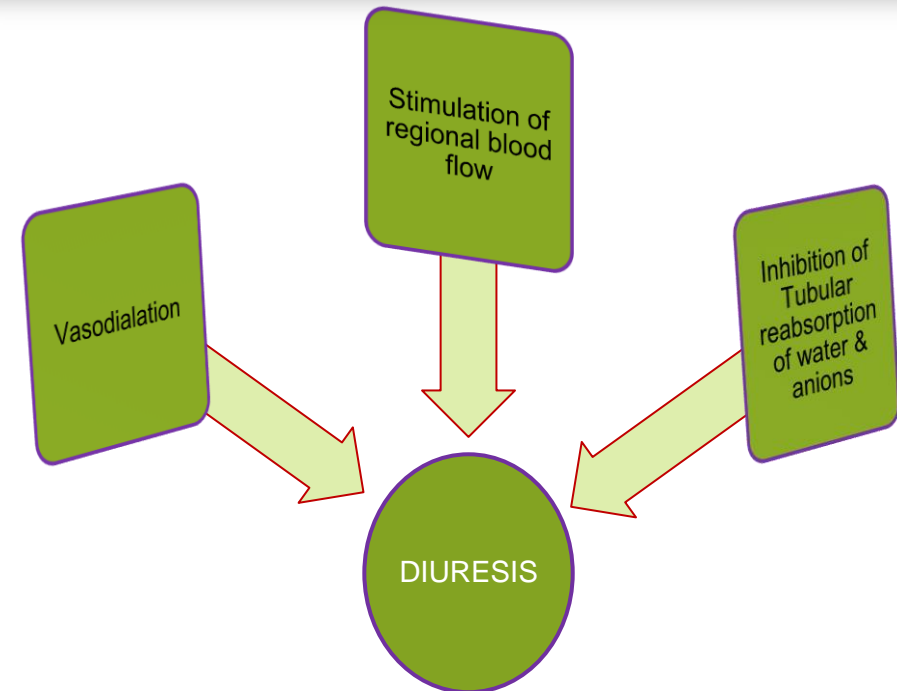
RESULTS



CONCLUSION

- From the results it can be observed that that *Anacyclus pyrethrum* has shown significant diuretic activity.
- However further work is required to isolate and evaluate the active principle(s) for the diuretic action and also to elucidate the exact mechanism of action.

Phytochemicals such as Flavonoids, Saponins
OR organic acids



REFERANCES

- Lipschitz WL, Haddian Z, Kerpskar A. Bioassay of diuretics. J Pharmacol Exp Ther. 1943;79:97–110.
- Agunu A, Abdurahamn EM, Andrew GO, Muhammed Z. Diuretic activity of stem bark extracts of *Steganotaenia araliaceae* Hoehst [Apiaceae] J Ethnopharmacol. 2005;96:471–5.
- Gautam OP, Jain SK and Savita Verma (2011) Anticonvulsant and Myrorelaxation activity of *Anacyclus pyrethrum* DC root extract. *Pharmacology online*.121-125

Thank

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