http://jmscr.igmpublication.org/home/
ISSN (e)-2347-176x ISSN (p) 2455-0450
crossref DOI: https://dx.doi.org/10.18535/jmscr/v9i6.24

IGM Publication
Journal Of Medical Science And Clinical Research
An Official Publication Of IGM Publication

Anthelmintic Activity of Saaranai Chooranam (SC) – A Siddha Herbo-Mineral Formulation

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Abstract
Background: *Helminthiasis is a worldwide and one of the common disease of all age groups. The most common infection is through contaminated vegetables, drinking water and raw or undercooked meat. These contaminated foods may contain eggs of nematodes.*
Aim of my study: *To evaluate the anthelmintic activity of Saaranai Chooranam (SC), a siddha herbo-mineral formulation, which having the plant material Saaranai – Trianthema portulacastrum and Indhuppu – Sodium Chloride Impura. Indhuppu also having the property of anthelmintic & commonly used in worm infestations. The extract showed significant activity than the standard drug albendazole.*
Materials and Methods: *Worms collection Indian earthworms Pheretima posthuma of nearly equal size (8 to 10 cm) were collected from the water-logged areas.*
Procedure: *Samples for in vitro study were prepared by dissolving and suspending (0.12, 0.25, 0.5, 1.25 and 2.5g) of hydro alcoholic extract in 50ml of distilled water at different concentrations ranging from 25, 50, 100, 250 and 500mg/ml.*
Study Type: In Vitro: *Pheretima posthuma was placed in Petri dish containing 10ml of the extract. Each Petri dish was placed with six worms and observed for paralysis and death, The results were expressed in comparison to the standard drug Albendazole (20 mg/ml).*
Results: *The data were statistically analysed by one-way ANOVA followed by Dennet's test, and significant p value was considered as <0.05.*
Keywords: *Saaranai chooranam, Siddha medicine, Pheritima posthuma, Anthelmintic activity.*

Introduction

Helminthes infections are most widely found in those human beings particularly in low poverty people and who does not maintaine hygienic condition, the source of infection very common due to poor sanitation, malnutrition, crowded living condition. Since our changed life style behaviour, food habits, physical activity etc[6] . In developing and developed countries, helminthes infections are one of the most prevalent diseases.

As per WHO, more than 2 billion people suffered from this infestation. Helminthes are also known as parasitic worms or also referred as intestinal worms even though not all helminthes reside in intestines. Most diseases caused by helminthes are chronic and debilitating in nature, they probably cause more morbidity and greater economic and social deprivation among humans and animals. The parasitic gastroenteritis is caused by mixed infection with several species of stomach and intestinal worms, which results in weakness, loss of appetite, reduced weight and decreased productivity. Helminthes symptoms like retarded cognitive development, iron deficiency anemia, abdominal pains and related health problems are characteristic features of most heavy helminthes infections. Trianthema portulacastrum is a plant belongs to the family Aizoaceae, found almost throughout India as a weed in cultivated and wastelands. The plant is bitter and used as analgesic, stomachic, laxative and serves as alterative cure for bronchitis, heart disease, anemia and inflammation and one more ingredient of indhuppu also having this anthelmintic property.

Materials and Methods

Collection and Authentication of plant

The required raw drugs for preparation of Saranai Ver were purchased from a well reputed country shop in Nagercoil, Tamilnadu & Raw drugs are identified & Authenticated by the medical botanist & gunapadam experts of Govt siddha medical college & hospital, palayamkottai.

Table.1. Ingredients of Saaranai Chooranam

S.no	Tamil Name	Botanical Name	Part Used	Phytochemical constituents	**ACTIONS**
1	Saaranai	Trianthema portulacastrum (Aizoaceae)	Root	Ecdysterone Trianthenol Leptorumol Trianthamine Saponin Glycosides Flavonoid (5,2-dihydroxy-7-methoxy-6, 8 dimethyl flavone) Leptorumol (5,7 dihydroxy-6,8 dimethyl chromone)	Haematinic Anthelmintic Antioxidant Hepatoprotective Laxative Analgesic Hypolipidemic
2	Indhuppu Rock salt	Sodium Chloride Impura	Salt	-----	Laxative Diuretic Carminative Stomachic

Purification and Preparation of Saaranai Cooranam

Saaranai ver should be thoroughly washed in water and soaked in cow's milk. Then it should be steamed in milk. Dried and groun into fine powder, sieved and add same quantity of indhuppu, after purification of indhuppu in buttermilk & store in a clean glass container.

Preparation of test sample

Samples for *in vitro* study were prepared by dissolving and suspending (0.12, 0.25, 0.5, 1.25 and 2.5g) of hydroalcoholic extract in 50ml of distilled water at different concentrations ranging from 25, 50, 100, 250 and 500 mg/ml.

Anthelmentic Assay

Worms collection : Indian earthworms Pheretima posthuma of nearly equal size (8 to 10 cm) were collected from the water-logged areas from herbal garden. Process: It was carried out using adult earthworm (Pheretima posthuma) owing to its anatomical and physiological resemblance with the intestinal roundworm parasites of human beings for preliminary evaluation of Anthelmentic activity. The 50ml formulations containing five different concentrations of hydro alcoholic extracts (25,50,100,250 and 500mg/ml in distilled water) were prepared. Pheretima posthuma was placed in Petri dish containing 10ml of the extract.

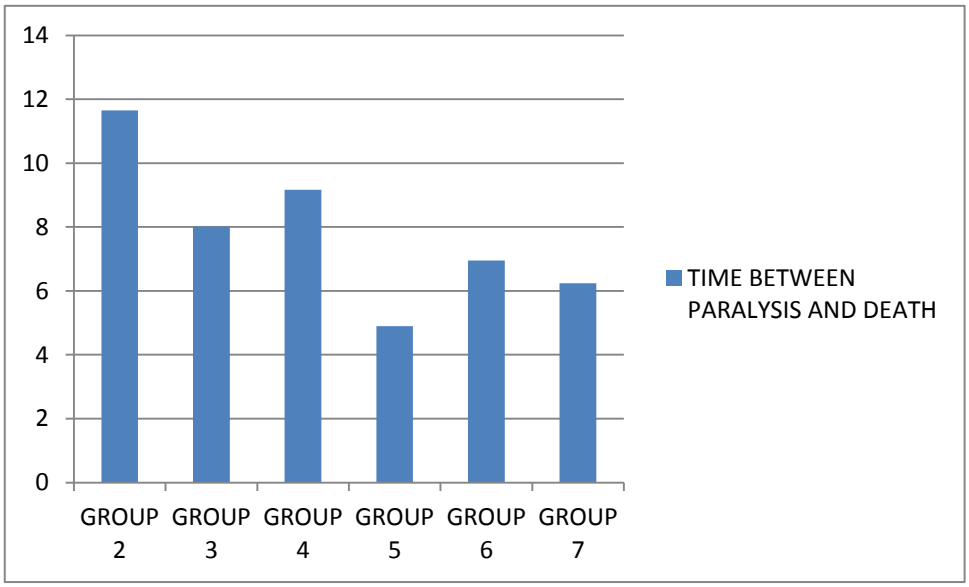
Each Petri dish was placed with six worms and observed for paralysis and death. The mean time for paralysis was noted when no movement of any sort could be observed, except when the worm is shaken vigorously. The time of death of worms was recorded after ascertaining that the worms neither moved when shaken vigorously nor , when dipped in normal saline followed with fading away of their body color and the results were expressed in comparison to the standard drug Albendazole (20 mg/ml).

Result

Table.2 The Effect of SC on Anthelmintic Activity

Group	Solution	Concentration in mg/dl	Time taken for paralysis	Time taken for death	Time between paralysis and death
1	Control	0	--	--	--
2	Albendazole	20	41.5±0.1	53.15±0.2	11.65±0.1
3	SC of drug	25	52.01±0.1	60.02±0.3	8.01±0.1
4	SC of drug	50	47.02±0.1	56.18±0.5	9.16±0.4
5	SC of drug	100	36.13±0.3	41.03±0.2	4.9±0.1
6	SC of drug	250	20.06±0.4	27.01±01	6.95±0.3
7	SC of drug	500	14.98±0.1	21.22±0.1	6.24±0

Figure.1 Indicates paralysing and death time



Discussion

From the Figures 1,

Albendazole standard (20 mg/ml) showed paralysis time in 41.5± 0.1 min and death time in 53.15 ± 0.2 min and Inb etween the paralysis and death time in 11.65± 0.1.

In hot extract 25mg showed paralysis time in 52.01 ± 0.1 min and death time in 60.02 ± 0.3 min, In between the paralysis and death time in 8.01±0.1

50mg showed paralysis time in 47.02 ± 0.1 min and death time in 56.18 ± 0.5 min, In between the paralysis and death time in 9.16±0.4

100mg showed paralysis time in 36.13 ± 0.3 min and death time in 41.03 ± 0.2 min, In between the paralysis and death time in 4.9±0.1

250mg showed paralysis time in 20.06 ± 0.4 min and death time in 27.01 ± 0.1 min, In between the paralysis and death time in 6.95±0.3 and

500mg showed paralysis time in 14.98 ± 0.1 min and death time in 21.22 ± 0.1 min, In between the paralysis and death time in 6.24±0

Conclusion

From the results, it was concluded that both hot and cold hydroalcoholic extracts of SC have

significant Anthelmentic activity, but hot hydroalcoholic extract shown most significant Anthelmentic activity when compared to cold hydroalcoholic extract. From the results,

SC has an Anthelmentic activity have been confirmed as it displayed activity against the worm used in the present study.

Acknowledgements

The authors would like to acknowledge Dept of pharmacology, Arulmigu Kalasalingam college of pharmacy, (Krishnacoil, Srivilliputtur, Tamilnadu) for providing and guiding us with the necessary lab facilities.

References

1. Ajaiyeoba E O, Onocha PA et al, In vitro Anthelmintic properties of Buchholzia coriaceae and Gynandropsis gynandra extract. Pharmaceutical Biology. 2001; 39 (3) : 217-20.
2. Anthelmintic activity of Trianthema portulacastrum L. and Musa paradisica L. against gastrointestinal nematodes of sheep.
3. Altaf hussain, Muhammad Nisarkhan, Evaluation of Anthelmint and Antipneumococcal Activity on Seed Aril of Myristica Malabarica
4. Kumeshini Sukalingam, Kumar Ganesan, Trianthema portulacastrum L.(giant pigweed): Phytochemistry and Pharmacological properties, Vol 16 (2017) Pages 461-478.
5. Manik baral, subrata chakraborty Evaluation of anthelmintic and anti-inflammatory activity of Amaranthus Spinosus Linn. International Journal of Current Pharmaceutical Research, Vol 2, Issue4, 2010, ISSN-0975-1491
6. Manimehalai.V, Evaluation of Anthelmintic and Antipneumococcal Activity on Seed Aril of Myristica Malabarica Lam. Masters thesis, Mohamed Sathak A.J. College of Pharmacy, Chennai, (2017)
7. Mathura.M, Invitro anthelmintic activity of various plant extracts against *Pheretima posthuma*. International Journal of Advanced Research in Science, Engineering and Technology. 2016; 3(12): 3068-71.
8. Neela.M, Rahul. V.A, A Review On Anthelmintic Potential of Herbs Mentioned in Siddha Medicine, Journal Of Medical Science And Clinical Research JMSCR Vol 5, Issue2, 17432-17436 Feb.
9. Ravichandran.M, Murugan, Anthelmintic activity of Murukkanvidhai mathirai-A Siddha Poly Herbal Deworming Formulation, World Journal of Pharmacy And Pharmaceutical Sciences Vol 3 (Issue 12):1471-1478
10. Samgeetha. J, Balabhaskar In Vitro Anthelmintic Activity of Achyranthes aspera Linn.(Whole Plant) Against Pheritima posthuma.
11. Shyam.A, Sunder et al, A decoction of the herb is used as a vermifuge and is useful in rheumatitis. The plant has a remarkable protection against the hepatotoxicity Der Pharmacia Lettre 2010: 2 (1) 540-545
12. Shyam Sunder.A 1*, Rama Narsimha Reddy A, et al, Protective effect of methanolic extract of Trianthema portulacastrum in atherosclerotic diet induced renal and hepatic changes in rats Der pharm Lett, 2010: 2 (1) 540-545
13. Thiyagarajan.R, Ph.D-Medicinal Botany, August Edition Published Ilangovan Pathipagam, Palayamkottai, 1997.