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Research Article

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Evaluation of anti histamine activity and anti-microbial study of siddha herbal drug Vallarai Ilagam

Dr. M. Krishnayini[1], M. Swathi[2]
[1]Siddha Physician, Karaikal.
[2]Lecturer, Pannai college of pharmacy, Dindigal.

Abstract

Siddha system of medicine is one of the indigenous systems of medicine among the world. It has its own principles and theories regarding diseases and its management. It also has special care and literature towards pediatric diseases. Siddha medicines mainly comprised of three major forms which are herbals, minerals and animal products denoted as thaavaram, thaathu and seevam in our literature. The herbal drug vallaraiilagam described as the internal medicine for karappan (skin diseases) for pediatric age group. Thus, to evaluate the safety and efficacy of the drug and for the scientific validation pre-clinical study (Anti histamine activity) and anti-microbial study were done and documented here.

Keywords: Siddha medicine, vallaraiilagam, karappan, pre-clinical study

Introduction

Siddha system describes about the diseases affected during childhood and is named as Kuzhanthai Maruthuvam, Balar Maruthuvam, Pillaipini Maruthuvam, Mathalai Noi etc. On these literatures, the illness from birth upto adolescence age are described separately. Many herbal formulations are mentioned for curing such diseases.

In our text book Balavagadam, diseases are classified mainly by intrinsic and extrinsic factors and by the developmental age i.e. paruvam. Each disease and its characteristics are explained through poem. Skin diseases are denoted by the term **KARAPPAN** and there are various medications are available for the treatment. Inorder to evident the effect of medication to specific disease described in our textbook, there is a need to analyse the drug and the mode of action towards the disease as per latest techniques.

So, this study is aimed to evaluate the disease called **Karappan,** which is correlated with the modern term Dermatitis treating by siddha herbal formulation **VallaraiIlagam.**

Karappan is mainly caused by the allergic reaction related to food and environment so there has to be ananti-allergic property for the drug which is used for the treatment.So, it is significant to test the anti-histaminic property for the vallaraiilagam described as the internal medicine for the karappan. Hence, the Pre-clinical study for Anti-Histamine Activityand Anti-Microbial Study are evaluated and discussed.

Vallarai Ilagam

This formulation is described in the siddha literature Pillai Pini Maruthuvam Part II described as medication for Karappan.

Ingredients of vallarai ilagam

1. Vallarai (*Centella asiatica)*
2. Poduthalai(*Phyla nodiflora*)
3. Ponnankaani (*Alternanthera sessilis)*
4. Elumichai (*Citruslimon)*
5. Saathikai (*Myristica fragrans)*
6. Saathipaththiri (*Myristica fragrans)*
7. Maasikai (*Quercus infectoria)*
8. Karkadagasingi(*Rhussuc cedanea)*
9. Adhimathuram (*Glycyrrhiza glabra)*
10. Kaataththi poo (*Bauhinia tomentosa*)
11. VaalMilagu (*Pipercubeba*)
12. Elam (*Eletteria cardamomum*)
13. Kirambu (*Syzygium aromaticum*
14. Palm jaggery
15. Cow's milk & Cow's ghee

Pre-clinical study- anti-histamine activity

Pre-clinical studies were done for analysing safety and efficacy of the drug and also for the evaluation of pharmacological activities. This activity is carried out in suitable animal model and this pharmacological analysis was done atS A Rajas Pharmacy College, Vadakkangulam, in Tirunelveli district. Anti-histamine activity is carried out by the method of Clonidine Induced Catalepsy in Swiss Albino Mice.

Bar test was used to study e ect of extracts on clonidine-induced catalepsy, to determine indirect antihistaminic activity. Mice was divided into five groups, Control group has 3 animals other has five animals in each group. Groups of animals was pretreated with (Tween-801%, 5ml/kg,i.p.), VI at doses (410,820 and 1230 mg/kg orally) and chlorpheniramine maleate (10mg/kg,i.p.); and receive Clonidine (1mg/kg, s.c.) 30 min after treatment.

The forepaws of mice were placed on a horizontal bar (1cm in diameter, 3cm above the table) and the time required to remove the paws from bar wasnoted for each animal. The duration of catalepsy was measured at 30, 60, 90,120,150 and180 minute interval after administration of clonidine.

Group	Description	No. of animals	Procedure
Group I	Disease control	3	1mg/kg Clonidine
Group II	Standard control	5	1mg/kgClonidine+Chlorpheniramine maleate(10mg/kg)
Group III	Low dose	5	1mg/kgClonidine+VI(411mg/kg)
Group IV	Mediumdose	5	1mg/kgClonidine+VI(822mg/kg)
Group V	High dose	5	1mg/kgClonidine+VI(1233mg/kg)

VI – Vallarai Ilagam

Animal dose is calculated using conversion factor by the formula

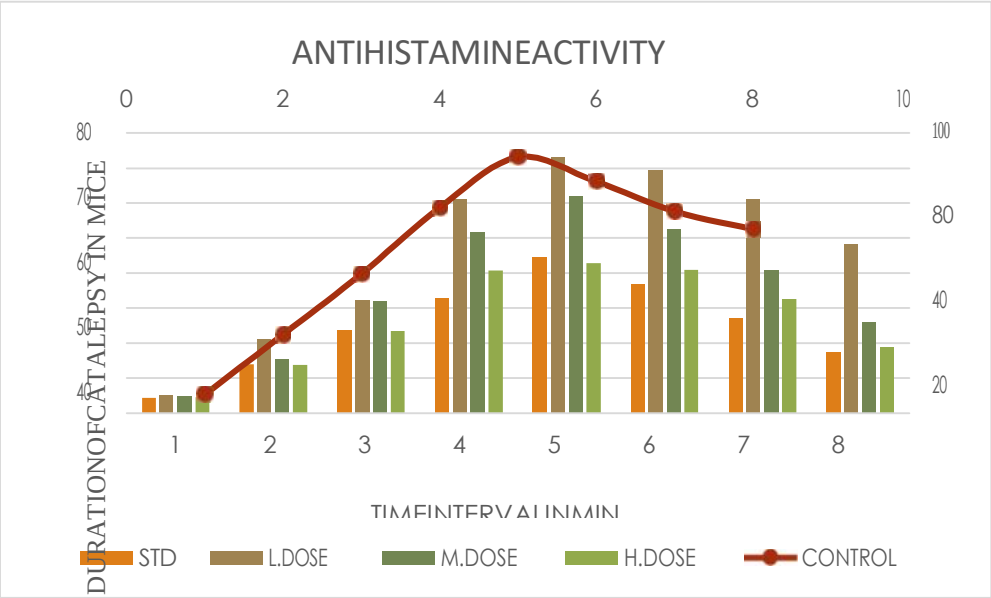
Animal dose (mg/kg)=Human Equivalent Dose(mg/kg) × Conversion Factor

Whereas,

HED = 2g (2000 mg)
Body Weight –60 kg
Conversion factor for mice– 12.3
Effect of Vallarai Ilagamin Clonidine-Induced Catalepsy model using bar test

Groups	Time InMinutes							
	0min	15min	30min	60min	90min	120min	150min	180min
Control	6.6±1.38	28±1.06	49.6±0.31	73.3±0.68	91.3±0.36	82.6±0.69	72±0.71	65.6±1.51
Standard	4.4±1.	14.0±1.	23.6±1.	32.8±2.	44.6±1.	36.6±1.48*	27.0±	17.4±
rd	51	60	65	02	38	***	1.65***	1.59***
							*	*
Low	5.2±1.	21.2±1.	32.2±1.	61.0±0.	73.0±1.	69.4±1.04	61.0±0.	48.4±
Dose	32	13	74	38	03		82	1.06***
								*
Mid	4.8±1.	15.4±1.	31.8±1.	51.6±1.	62.0±1.	52.6±0.37*	40.6±	26.0±
Dose	08	45	86	30	42	***	1.20***	1.21***
							*	*
High	4.6±1.	13.8±1.	23.4±1.	40.8±1.	42.8±1.	41.0±1.02*	32.6±	18.8±
Dose	24	04	62	41	12	***	1.13***	0.32***
							*	*

A value of**** $p<0.001$ was considered significant compared to the control and standard group.



Statistical analysis

The results are expressed as mean′ SD(n=5) and analysed by one-way analysis of variance (ANOVA) by Graph ad Prism9. A value of****p<0.001 was considered significant compared to the control and standard group.

Results and Discussion

Clonidine, alpha adreno receptor agonist induces dose dependent catalepsy in mice, which was inhibited by histamine H1 receptor antagonists but not by H2 receptor antagonist.

Clonidine releases histamine from mast cells which is responsible for different allergic conditions. In present study, it was found that chlorpheniramaine maleate and vallaraiilagam inhibit catalepsy in dose dependent manner and it is concluded that the drugs having antihistaminic potential inhibits clonidine induced catalepsy, so Vallarai Ilagam possess antihistaminic activity

Anti Microbial Study

Anti-Microbial study of the drug Vallarai Ilagam was analysed in Malar Micro Diagnostic Centre, Palayamkottai.

This study was done for the evaluation of Anti-Microbial action of the trial drug against *klebsiella pneumoniae, Streptococcus pneumoniae, Staphylococcus aureus.*

Method

The study was analysed by Kirby Bauer Method (Disk Diffusion Susceptibility Test) in the medium of Mueller Hinton Agar.

Purpose of Kirby Bauer method

The purpose is to determine the sensitivity or resistance of pathogenic aerobic and facultative anaerobic bacteria to various antimicrobial compounds in order to assist the physician in selecting treating options for patients.

The pathogenic organism is grown on Mueller Hinton Agar in the presence of various antimicrobial impregnated filter paper disks. The presence or absence of growth around the disks is an indirect measure of the ability of that compound to inhibit that organism.

Components and preparation of medium (Mueller Hinton Agar)

Beef extract	- 300g/*l*
Agar	-17.00g/*l*
Starch	- 1.50g/*l*
Casein Hydrolysate	- 17.5g/*l*
DistilledWater	- 1000 ml
pH	-7.6

Preparation

Suspend the components listed above in 1*l* of distilled water and mix thoroughly Heat with frequent agitation and boil for 1minute to completely dissolve the components. Autoclave at 121ºC for 15 minutes. Dispense as desired. Allow to solidify at room temperature then store at 4 to 8ºC

Procedure

After preparing the Muellar Hinton Agar (M173) plates, the organism was streaked on the medium and the trial drug vallaraiilagam was loaded using disc method with the concentration of 1g in 10ml of water. Amikacin was used as the control drug. The plates were observed after incubation at 37□C for overnight and the presence of inhibition zone was measured.

Test Report

S. No	Drug	Organism		Susceptibility Sensitivity	Zone size of the Trial Drug (VI)	Zone size of Control (Amikacin)
1	VallaraiIlagam	1	*Klebsiella pneumoniae*	**Moderate Sensitive**	10 mm	19 mm
		2	*Streptococcus pneumoniae*	Resistant	-	17mm
		3	*Staphylococcus aureus*	Resistant	-	16 mm

Inference

This analys is shows that the trial drug VallaraiIlagam was Moderate Sensitive against *Klebsiella pneumoniae* and resistant to *streptococcus pneumoniae* and *staphylococcus aureus*

Conclusion

Vallaraiilagam shows satisfactory results by the evaluation. It evident that the drug possess the pharmocological activity of antihistaminic action which is necessary for the management of allergic condition.AntiMicrobialstudywasdoneforevaluati ngantimicrobialactionoftrial drugs. It was done for the micro organisms, which are *Klebsiella pneumoniae*, *Streptococcus pneumoniae*, *Staphylococcus aureus* with the control drug Amikacin through Kirby Bauer Method. It shows that the trial drug vallaraiilagam was moderate sensitive against *Klebsiella pneumoniae* and resistant to *Streptococcus pneumoniae*, *Staphylococcus aureus.*

Evaluation of this activities helps to standardize the drug and reveals its safety and efficacy. so, the drug vallaraiilagam helps to cure/treat karappan as per our siddha literature and also it is suitable for the pediatric age group. The information collected in this study will be the evidence for future reference.

References

1. Avinash Seth And Biren Shah Textbook Of Pharmacognacy and Phytochemistry, 2009
2. Dnyaneshwar J Taur and Ravindra Y Patil. Antihistaminic activity of *Clitoria ternatea* L. Roots
3. Dr.Mohan Raj, Mathalai Noi Thoguthi-I
4. Dr.M.Shanmugavelu, Siddha Maruthuva Noi Nadal Thirattu Mudhal Paagam, 2004
5. Dr.Se.Sivasanmugaraja, Kuzhanthai Maruthuvam (Anuboga Vaithiya Pararasasekaram Ettu Chuvadi)
6. Dr.Se.Sivasanmugaraja, Pararasa Sekara Balaroga Nithanam
7. Dr.S.Somasundaram, Maruthuva Thavaraviyal Paguthi-I
8. Dr.S.Somasundaram, Taxonomy of Angiosperms (Maruthuva Thavaraviyal Paguthi- II)
9. Jang-Woo Shin, In-Chan Seol, Chang-Gue Son. Animal dose calculation Interpretation of Animal Dose and Human Equivalent Dose for Drug Development 2010 vol31. No.31-7 the journal o fKorean oriental medicine
10. Jan Hudzicki Kirby-Bauer Disk Diffusion Susceptibility Test Protocol, American Society for Microbiology, December 2009
11. K.S.Murugesa Mudaliar, Gunapadam (Porutpanpu Nool) Mudhal Paagam, Siddha Materia Medica (Medicinal Plants Division)
12. K.S.Murugesa Mudaliar, Dr.Pon.Guru. Sironmani, Kuzhanthai Maruthuvam (Balavagadam)

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