IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

BIOCHEMICALANALYSIS, PHYTOCHEMICAL AND PHARMACOLOGICAL ACTIONS ONSIDDHAPAEDIATRICDRUG - CHUKKUPODI

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ABSTRACT:

Siddha medication have described many medicines for curingall kind of diseases . Chukku podi is used in the paediatric group for dysentery (seethakazhichal). As a Siddha peadiatrician , an extra personal interest, here in the study of new drug for the paediatric disease. With this aim in mind, Ihave started my study about chukku podi. This biochemical analysis,phytochemical and pharmacological actions plays an important part in my study. My analysis expressed that the presence of calcium, starch , ferrous (Iron), unsaturated compounds and amino acids in Chukku podi.

Key Words: Chukku podi, paediatric dysentery, Bio chemical analysis,phytochemical and pharmacological actions

INTRODUCTION:

Siddha system of medical science is very ancient in origin, as old as the ancient civilization. Prevention and cure is the basic aim of siddha medication which prevent diseases by following the careful diets and proper relaxation of the mind to achieve a totality of health .Kuzhanthai maruthuvam is a branch of this medical science which deals with the diseases and treatment of the children . Though children are the future citizens. Hencetheir health is paramount importance to our nation. At the present time , the dysentery causing bacteria are resistant to many antibiotic polyresistant strains are widely spreading . According to Sarabentharar vaithiya muraigal (Bethi muraigalum,adhisara sikitchaiyum) recommended for the infantile dysentery (seethakazhichal).(7)

MATERIALS AND METHODS :

To Find the efficacy of chukku podi ,the following steps were carried out in the investigation .

- Collection, identification and confirmation of the raw drugs for the preparation of chukku podi .
- Purification and processing of raw drugs .
- Preparation of trial drugs .
- Biochemical analysis of trial drugs .

Chukku podi is an herbal medicine , easily available and harmless to infants & children .
The Ingredients of " chukku podi " have the property to controlling the seethakazhichal without any adverse effects .

PREPARATION AND PROPERTIES OF CHUKKU PODI :

• **Name of the medicine** – CHUKKU PODI

• **Ingredients** :

Chukku– 1 kg

Lemon – 25 numbers

1. DRYGINGER(CHUKKU):

Botanical name : *Zingiber officinale .Rosc.*,

Family : Zingiberaceae

Parts used : Rhizome

Purification method: Remove the skin of dry ginger and fully cover it by limestone(chunnambu), then allow to dry it in the sunlight at minimum time limit of 3 hours . After that clean &wash it with normal water. After purification ginger loss their hepatotoxic activity.(6)

According to Nadkarni, chukku can be used for advanced stages of dysentery, diarrhoea, infantile diarrhoea, flatulence and dyspepsia.(5)

2. LEMON : (ELUMITCHAI)

Botanical name : *Citrus medica. Linn.,*

Family : Rutaceae

Parts used : Fruit juice

The pectin present in the lemon which protects the injured intestinal mucosa and has healing action on intestinal ulcers.(8)

Procedure:

The drug was purified and powdered well. The powder was mixed with lemon juice. Then small round shaped pieces like (ilanthai Kottai) had been prepared from the mixer. The pieces were gone via the medicinal preparation procedure called the " pudam". After the pudam the pieces were powdered well and preserved in an air tight container.(7)

Pudam _ A process of preparing medicine by burning something inside two pots hemetically closed after placing one upside down over the other.

Dosage -100 to 200 mg

Adjuvant-Buffalo's curd

Indication-infantile dysentery (seethakazhichal)

BIOCHEMICAL ANALYSIS OF CHUKKU PODI:

Preparation of the extract:

5gms of chukku podi was weighed accurately and placed in a 250 ml clean beaker. Then 50 ml distilled water was added and dissolved well. Then it was boiled well for about 10 minutes. It was cooled and filtered in a 100 ml volumetric flask then it was made up to 100 ml with distilled water. This fluid was taken for analysis.

Table.1.Biochemical analysis

S.No	Experiment	Observation	Inference
1.	**Test for calcium:** 2ml of the above prepared extract was taken in a clean test tube.2ml of 4%ammonium oxalate solution was added to it.	A white precipitate is formed	Indicates the presence of calcium
2.	**Test for sulphate:** 2ml of the extract is added to 5%barium chloride solution.	No white precipitate is formed	Absence of sulphate
3.	**Test for chloride:** The extract is treated with silver nitrate solution.	No white precipitate is formed	Absence of chloride
4.	**Test for carbonate:** The substance is treated with concentrated HCl.	No brisk effervescence is formed	Absence of carbonate
5.	**Test for starch:** The extract is added with weak iodine solution.	Blue colour is formed	Indicates the presence of starch

6.	**Test for ferric iron:** The extract is acidified with glacial acetic acid and potassium ferro cyanide.	No blue colour is formed	Absence of Ferric Iron
7.	**Test for ferrous iron:** The extract is treated with concentrated nitric acid and ammonium thick cyanate.	Blood red colour is formed	Indicates the presence of ferrous iron
8.	**Test for phosphate:** The extract is treated with ammonium Molybdate and concentrated nitric acid.	No yellow precipitate is formed	Absence of phosphate
9.	**Test for albumin:** The extract is treated with Esbach's reagent.	No yellow precipitate is formed	Absence of albumin
10.	**Test for tannic acid:** The extract is treated with ferric chloride.	No blue colour precipitate is formed	Absence of tannic acid
11.	**Test for unsaturated compound:** Pottasium permanganate solution was added to the	It gets discolouration	Indicates the presence of unsaturated compound
12.	**Test for reducing sugars:** 5 ml of Benedict's Qualitative solution is taken in a test tube and allowed to boil for 2mts and added 8_10drops of the extract and again boiled for 2mts.	No change in colours occur	Absence of reducing sugar

13.	**Test for amino acid:** One or two drops of the extract was placed on filter paper and dried well and after drying 1% Ninhydrin was sprayed over the same and dried well.	Violet colour is formed	Indicates the presence of amino acid
14.	**Test for zinc:** The extract is treated with potassium ferro cyanide.	No white precipitate is formed	Absence of zinc

INFERENCE:

The given sample of " CHUKKU PODI " contains starch, ferrous iron, calcium, unsaturated compound and amino acid.

TABLE .2. Pharmocological properties (1,2,4)

s.no	Botanical name	Part used	Actions	Indications
1.	Chukku – Zingiber officinale	Rhizome	Stimulant , stomachic , Carminative(1)	Cough, Asthma, Diarrhea, Sinusitis, Peptic Ulcer, Anemia, Fever(2)
2.	Elumitchai - Citrus limonia	Leaf, Unripe fruit, Fruit juice, volatile oil	Refrigerant, Rubefacient, Carminative(1)	Thiridosham Imbalance, Pricking Pain, Vomiting, Gastric Ulcer,Pitha Diseases, Psychiatry Diseases, Giddiness, Nausea, Thirst, Eye diseases, Earache, paronychia(4)

TABLE . 3. PHYTOCHEMICAL PROPERTIES

s.no	Common name	Pharmacological action
1.	Chukku-Zingiber officinale	Cardiac glycosides, Alkaloids, Saponins, Tannins, Flavonoids, Sesquiterpenoids, Monoterpenes, Bisapolene, Zingiberene, and Zingiberol (Connel D), 6-Shogaol, Gingerols, Zingerone, Paradol, Zingerone, Geraniol, Gingerols, Gingerdiols, Gingerdiones, and Dehydrogingerdiones (2**,3)**
2.	Elumitchai - Citrus limonia	Citronellal (29.31%), Limonene (17.59%), (E)-citral (12.71%), 1,6-octadien-3-ol,3,7-dimethyl (10.91%), biocyclo [3.1.0] hexane, 4-mehylene-1-(1-methyl) (8.80 %), 6-octen-1-ol,3,7-dimethl (7.95%), 2,6-octadien-1-ol,3,7-dimethyl-acetate (Z) (6.29%), 1,3-cyclohexadiene,5-(1,5-dimethyl-4-hexenyl)-2-methyl, [S(R,S)] (2.81%), cyclohexene,3-(1,5-dimethyl-4-hexenyl)-6-methylene-, [S-(R,S)](1.64 %), bezene,1-(1,5-dimethyl-4-hexenyl)- 4-methyl (1.10 %) and cyclohexene,1-methyl-4-(5-methyl-1-methyl-1-methylene-4-hexenyl)-,(s) (0.88 %) Flavanones (Eriocitrin 16.7%, Hesperidin 20.5%); Flavones (6,8-di-C-GluApigenin1.17%, 6,8-di-C-Glu-Diosmetin 4.95%, 7-O-Rut-Luteolin 3.93%, Diosmin 3.12%), Aglycones (Luteolin 0.08%)]. Coumarins and Psoralens: (Bergapten, Bergamottin, Byakangelicin, Citropten, Imperatorin, Isoimperatorin, Isopimpinellin, phellopterin, Prangol, Scoparon, Scopoletin, Umbelliferone, Umbelliprenin, Xanthyletin). Carotenoids: (Phytofluene, β -carotene, Cryptoxanthin, Violaxanthin, Auroxanthin). **(3)**

DISCUSSION :

The biochemical analysis the presence of ferrous iron in chukku podi may help in hemoglobin synthesis in mild or acute anaemic patients caused due to blood loss along with faeces in dysentery. Phytochemical study showed the presence of various chemical constituents in which most importantly tannins , alkaloids , saponins etc.,in further it has pharmacological actions like Stomachic, Stimulant , Rubefacient and carminative..

ACKNOWLEDGMENT :

I would like to express my thanks to the Biochemistry Unit of Palayamkottai And I would also like to extend my gratitude to Our principal Sir of Sri Sairam Siddha Medical College and Research centre and conveying my thanks to the Co – Authors for their able guidance making me the part of being in it and joining their hands for the support in completing this article.

CONCLUSION :

I hope this study may help many people to get involved in research that deals with the concept of Biochemical Analysis and also it may sow some seeds to them for future references.

REFERENCE :

1.Murugesa Muthaliyar KS.Gunapadam part 1 ,M o o l i g a iVa g u p p u ,2nd e d i t i o n . C h e n n a i ; Directorate of Indian Medicine and Homeopathy; 2008. 98-101, 531-534, 760-763, 463-464, 345-347, 13-16, 846-847, 446-447, 454-458, 720-722, 158-160, 853-861p.

2.Fatai Oladunni Balogun, Esther Tayo Adeye Oluwa and AnofiOmotayo Tom Ashafa, Pharmacological Potentials of Ginger, Ginger Cultivation and Its Antimicrobial and Pharmacological Potentials. Haiping Wang, Intech Open. DOI: 10.5772/intechopen. 88848.

3.Osabor VN, Bassey FI, Umoh UU, Phytochemical Screening and Quantitative Evaluation of Nutritional Values of Zingiber officinale (Ginger). American Chemical Science Journal.January, 2015; 8(4): 1-6.

4.Ali Esmail Al-Snafi, Nutritional value and pharmacological importance of citrus species grown in Iraq. IOSR Journal of Pharmacy. August, 2016; 6(8); 76-108.

5.Dr.K.M.Nadkarni's- The Indian material medica 3rd edition 1976, page number 284 and 313.

6.Sarakku sudhi muraigal (Renewed from Manuscript)

7. Dr.S.Venkatrajan LIM - Sarabendheravaidhiya muraigal(Bedhi muraigalum adhisarasigitchaiyum), Second edition,page number 58.

8.OlasupoStephenAdeniyi ,JamesOmale ,Samuel ChukwumaOmeje ,Victoria OjimaojoEdino ,Antidiarrheal activity of hexane extract of *Citrus limon* peel in an experimental animal model ,Journal of Integrative Medicine -Volume 15, Issue 2, March 2017, Pages 158-164.