

IN-VITRO CARMINATIVE ACTIVITY OF A POLYHERBAL SIDDHA MEDICINE - CHUKKU NEI

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ABSTRACT

Siddha medicine, a traditional system of medicine has its deep root more than a medical system, it encompasses a way of healthy life. There are many polyherbal formulations were described in siddha medicine which is safe and has a carminative properties. This paper deals with Chukku nei – a ghee based formulation described in classic Siddha literature Balavagadam which is indicated for Kattu mantham in Children. The main ingredients of the Chukku nei are dry ginger, ajowan, betel leaf which helps in indigestion, bloating, constipation. The study was aimed to evaluate the in-vitro carminative properties of Chukku nei. Chukku nei was prepared as mentioned in Siddha classical literature and subjected into the study. In-vitro carminative activity of Chukku nei was evaluated by modified method of Swapnil Sharma *et al.* The Chukku nei extract showed significant amount of carminative properties even at its lowest concentration.

KEYWORDS: Carminative, Chukku nei, Polyherbal, Siddha medicine.

INTRODUCTION

Pediatric practice in Siddha medicine is a specialty subject and it is practiced since some millennium from the origin of Siddha medicine. Infact Siddha system of medicine having many classical literatures exclusively dealing with pediatric ailments and its treatment procedures. About 3-5% of patients is in pediatric group are mostly affected by common

digestive problem like constipation, distension, flatulence, loss of appetite and abdominal pain. Carminative herb prevents formation of gas in the gastro intestinal tract and facilitate the expulsion of gas, thereby combatting flatulence and other common digestive problems. Carminatives are often mixtures of essential oils and herbal spices with a tradition in folk medicine for this use. Chukku nei is a Sastric Siddha formulation indicated for Kattu mantham (Constipation) which is described in the Siddha classical Siddha literature Balavagadam. The main ingredients of the Chukku nei are dry ginger, ajowan seed and betel leaf which are known for their stomachic, carminative, laxative action. Literature survey reveals that the potentials of Chukku nei as carminative has not been evaluated and as a guiding factor in this research I have tried to evaluate Chukku nei scientifically for the carminative property by using modified method of Swapnil Sharma *et al.* The study was aimed to evaluate the carminative activity of Chukku nei- polyherbal Siddha formulation by modified method of Swapnil Sharma *et al.*

MATERIALS AND METHODS

Collection of raw drugs

The required drugs were purchased from Ramaswamy Chettiyar country drug shop, Kandhaswamy kovil street, Paris, Chennai, Tamil Nadu, India.

Authentication

Raw drugs were authenticated by the Medicinal Botanist of National Institute of Siddha, Chennai. The test drug Chukku nei was prepared at Gunapadam lab, National Institute of Siddha, Chennai-47

Ingredients of the Chukku nei

- Chukku (*Zingiber officinale*) - root
- Citrarathai (*Alpinia officinarum*) - rhizome
- Vetrilai (*Piper betel*) - leaf
- Omum (*Trachyspermum ammi*) - seeds
- Murunga pattai (*Moringa oleifera*) - bark -a mixture of 325 ml surasam of above 5 ingredients
- Vembu nei (*Azadirachta indica*) - 325 ml

Preparation of Chukku nei

All the ingredients except vembu nei were taken and grinded with sufficient quantity of water and prepared as surasam (325 ml) then vembu nei (325ml) is mixed together, boiled and filtered.

Dose for human use

5 ml once a day at morning.^[1]

Indications

Kattu mantham.^[1]

Reference

Text book of Balavagadam – pg no 93

Carminative Activity Studies***In-vitro* Carminative Activity**

Test drug ID : Noble research solution (NRS/AS/0087/01/2018)

Institute : National Institute of Siddha, Chennai, Tamil Nadu, India

Sample Name : Chukku nei

Sample ID : CN

***In-vitro* Carminative activity acid-base titration technique**

In-vitro carminative activity of the chukku Nei was evaluated by modified method of Swapnil Sharma *et al.* About 10, 20 and 40 ml of the Chukku Nei were placed in conical flask fitted with air-tight nozzle, to this 100 ml of distill water was added. About 100 ml of Sodium Hydroxide (1M, previously standardized to oxalic acid) was poured into a plastic container fitted with aeration tubing system that was connected directly to the reaction vessel containing varying volume of Chukku Nei. The flask was agitated manually for the next 45 minutes and vigorously for another 30 minutes and was allowed to stand for overnight. The carbon dioxide gas evolved from the reaction vessel was allowed to pass into a plastic container containing excess sodium hydroxide where it was absorbed and converted into equivalent amount of sodium carbonate. The resulting mixture consisting of excess sodium hydroxide and sodium carbonate was titrated with standard Hydrochloric acid using phenolphthalein as indicator to get first endpoint and in continuation to this the second

endpoint was enumerated using methyl orange as indicator. The difference in milliliters between the first & second endpoints was used to calculate the carbon dioxide content per gram of sample.

Vol. of titrant x molarity of std. acid x mol. Wt. of CO₂ = mass of CO₂ in gram

Molarity of the Acid is 0.09184 M

Mol. Wt. of CO₂ is 44.01 g/mole

Table 1: Statistical Representation.

Volume of Test Sample Chukku Nei	Mass of CO ₂ in gram
10	6.87 ± 1.21
20	10.1 ± 1.06
40	19.13 ± 1.23

Each value represents the mean ± SD. N=3



Fig. 1: Reaction Set up- Sample Chukku NEI.

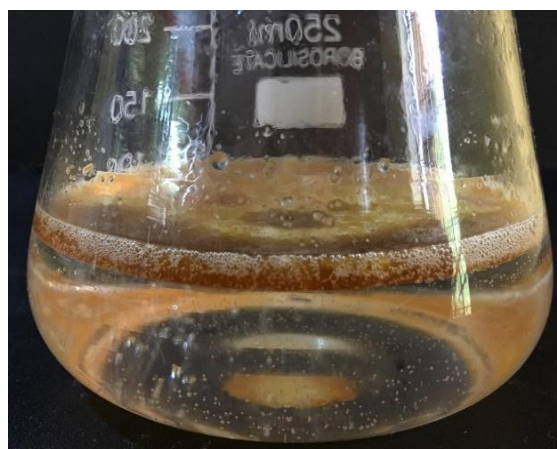


Fig. 2: Evolvement of Carbon dioxide from the reaction mixture.

RESULTS

The carminative profiling of the test sample Chukku nei was evaluated on basis of the amount of carbon dioxide evolved from the reaction mixture with varying volume of Chukku Nei. The amount of Carbon dioxide {g} produced by the 5ml of the sample Chukku Nei was found to be for 10 ml of sample it was (6.87 ± 1.21) , 20 ml of sample it was (10.1 ± 1.06) and 40 ml of sample it was (19.13 ± 1.23) .

Table 2:

Volume of Test Sample	Mass of CO ₂ in gm
0	(6.87 ± 1.21)
20	(10.1 ± 1.06)
40	(19.13 ± 1.23)

Each value represents the mean \pm SD. N=3

In-vitro carminative activity of the Chukku nei was evaluated by modified method of Swapnil Sharma *et al* clearly indicates the test drug Chukku nei (CN). The carminative profiling of the test sample Chukku Nei was evaluated on basis of the amount of carbon dioxide evolved from the reaction mixture with varying volume of Chukku Nei. The amount of carbon dioxide (g) produced by the 10 ml of the sample Chukku Nei was found to be (6.87 ± 1.21) , for 20 ml of sample it was (10.1 ± 1.06) and for 40 ml of sample it was (19.13 ± 1.23) .

CONCLUSION

A carminative property is utilized to improve digestion. Results of this study suggested that the drug extract of Chukku nei has carminative property even at its lowest concentration thus it was concluded from the results of the present investigation possesses promising carminative activity in the tested medium which was measured as an index of mass of CO₂ released from the medium. Thus Chukku nei has a promising Carminative activity.

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