



## Preliminary Qualitative Chemical analysis of Poly herbal formulation "Cuttira Apaiyati Lekiyam"

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### ABSTRACT

Siddha system of medicine is the oldest system of medicine in India. 18 Siddhars were contributed for the development of this system. Siddha medicine is capable of treating different types of paediatric disease. Pandu noi is one among them. The disease Pandu noi is the nearest correlation of anemia.

Anemia is a condition in which the number of red blood cells or haemoglobin in the blood is low. The most common cause of anemia is thought to be iron deficiency. Children are particularly vulnerable to iron deficiency because of their increased iron requirements in the period of rapid growth. Iron deficiency anemia in children has been linked to increased childhood morbidity and impaired cognitive development so it is important to treat anemia in children as soon as possible.

There are huge medicines for the treatment of Pandu noi in Siddha and this article aims about phytochemical analysis of poly herbal formulation "Cuttira Apaiyati Lekiyam". The analysis of the drug will be helpful in further studies.

### Keywords:

Pandu noi, anemia, Cuttira apaiyati lekiyam, Children, Biochemical analysis

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## INTRODUCTION

Anemia is a decrease in the total amount of red blood cells or haemoglobin. Haemoglobin is a type of protein that allows red blood cells to carry oxygen to other cells in the body. Iron deficiency anemia is a major health problem in children. Over the last 50 years the prevalence of iron deficiency anemia in children was ranged between 68% to 97%.who has estimated that globally 293million of children were affected by anemia. According to 4<sup>th</sup> National Family Health Survey (2015-2016) data in tamilnadu the prevalence of anemia among children in the age group of 6-59 months is about 50.4%. Risk factors for anemia includes premature or low birth weight, living in poverty, early use of cow's milk, low iron diet, surgery or accidental blood loss, long term illness such as infections or kidney or liver disease

### Siddha Aspect

Pandu noi is a disease of Rattha thathu, characterised by pallor of skin, nails, conjunctiva and tongue. Pandu literally means pallor and it is of Sanskrit origin meaning pale skinned man the first references being found in great epic Mahabharata. When vyasa approached ambalika she got frightened due to his scary appearance she had become pale hence her son was born pale thus he was named as pandu.

### Etiology :

Excessive intake of salt sour foods, muds, ashes, betel leaves, betel-nuts

Hemorrhagic condition like Menorrhagia (perumpadu), Hypertension (kurudhiazhal), Haemorrhoids (moolam), Hematemesis (kuruthivaandhi)

Fever, Diarrhoea, Dysentery

Excessive intake of toxic drugs

Worm infestation

Hepatic disorders

Premonitory symptoms:

Dietary changes, derangements of pitha affect the colour and consistency of the blood which will prevent the proper supply of nutrients to the body

Dyspnoea while walking, weakness of lower limbs

Anorexia, Nausea, giddiness, frequent fainting, weight loss, palpitation

### Classification of pandu noi

Vatha pandu, Pitha pandu, Iyya pandu, Mukkutra pandu, Nanju pandu, & Mannun pandu

## MATERIALS AND METHODS

### Cuttira Apaiyati Lekiyam

Noiyakandam kathiriver nutrumuppa thambalangal ayyakaduk kainuru palangal-paiyaa narukiyae enmarakkal narsalam vittae yerithuneer naalondraai yendhu.

Yendhum kudinneeri l yermoondra manduvellam Botthanee rikaraitup bothavidu-sendhakarka melamila vanga menthiri kadugu kola adimadhuram kuru

kurusiru nagapoo kollaveti vervagaike yerupala mondraekal yitthanaiyum-chooranamai paagathanil thoovip bathathiraki matranal vaagupera naalithen vaar.

Vaarumindha yoogapper vaiyakathil choothira seru mpaiyati lekiyamam -neerum porundhukudi neervendha bongkadukkai ondrum thirundhiyidu lekiyamum thin.

Thinathan soolaiyudan sersuvasa kasam Pannu marusi palaveekam -thunni Varundhum soolaiyandu vanmoolam kunmam Pirindhasayam vandhiyinum pesu.

Pesupitham vaivuvikkal pedhasuram dheerndhuvidum dhesu tharumudambil dheebanamam - pesu malasuthi thadhuviruthi mayavudal pooti nalamundai immarundhai nadu

-Ref( Agasthiyar vaithiya sindhamani 4000)

**Table.1 (Ingredients of *Cuttira apaiyati lekiyam*)**

**Collection, identification and authentication of the drug:** Kantankathiriver were collected from Devadanapatti, Theni dis-

Name	Botanical name	Family	Parts used
Kantanka-thiri ver	Solanum surrattense	Solanaceae	Root
kadukkay	Terminalia chebula	Combretaceae	Fruit
Neer	Water		
Vellam	Jaggery		
Elam	Elettaria cardamomum	Zingiberaceae	Dried fruit
Ilavankam	Syzygium aromaticum	Myrtaceae	Flower bud
Cukku	Zingiber officinale	Zingiberaceae	Rhizome
Milaku	Piper nigrum	Piperaceae	Dried fruit
Tippili	Piper longum	Piperaceae	Fruit
Atimaturam	Glycyrrhiza glabra	Fabaceae	Root
Cirunaka poo	Cinnamomum wightii	Lauraceae	Flower bud
Vettiver	Vetiveria zizanioides	Poaceae	Root
Then	Honey		

trict. Remaining raw drugs were purchased from a well reputed country shop in theni. they were identified and authenticated by Botanist of Government Siddha Medical College, Palayamkottai

**Purification of the drug:**

All the ingredients of this herbal formulation were purified according to the proper produce methods described in Sid-dha literature.

**Preparation of the drug:**

Make decoction of 1 and 2. After that add jaggery to the decoction and it is heated till it reaches pagu patham. Then add remaining powdered ingredients 5 to 11 mix well till it reaches

lekiyam consistency and allow it to cool. Next day add honey on it mix well and store it in airtight container.

**Administration of drug :**

Form of the medicine : Lekiyam

Dosage : 2.5gms twice a day depends on age

Adjuvant : kadukkay kudineer

Indication : **Pandu**, kamalai, soolai, suvaiyinmai, moolam, vaandhi, pithavaayu.

**Table 2. Qualitative biochemical analysis of Cuttira Apaiyati Lekiyam**

S.no	EXPERIMENT	OBSERVATION	INFERENCE
1.	<b>Test for Reducing sugars:</b> Benedict's test: the filtrate 1ml was treated with Benedict's reagent and heated gently	orange red precipitate is formed	Indicates presence of reducing sugar.
2.	<b>Test for Amino acids:</b> One or two drops of the extract is placed on a filter paper and dried well. After drying, 1% Ninhydrin is sprayed over the filter paper and again dried it well.	Violet colour is formed	Indicates presence of amino acid.
3.	<b>Test for Tannic acid:</b> The extract is treated with ferric chloride	Blue black precipitate is formed	Indicates presence of tannic acid
4.	<b>Test for Starch:</b> The extract is added with weak iodine solution	blue colour is formed	Indicates presence of starch.
5.	<b>Test for unsaturated compound:</b> Baeyer's test : Potassium permanganate solution is added to the extract.	It gets decolorized	Indicates the Presence of Unsaturated compound
6.	<b>Test for calcium:</b> 2ml of the above prepared extract is taken in a clean test tube. To this add 2ml of 4% Ammonium oxalate solution	A white precipitate is formed	Indicates the presence of Calcium
7.	<b>Test for sulphate:</b> 2ml of the extract is added to 5% Barium chloride	A white precipitate is formed	Indicates the presence of Sulphate
8.	<b>Test for chloride:</b> The extract is treated with silver nitrate solution	No white precipitate is formed	Absence of Chloride
9.	<b>Test for carbonate:</b> The substance is treated with concentrated Hcl.	No brisk effervescence is formed	Absence of Carbonate
10.	<b>Test for ferrous iron:</b> The extract is treated with concentrated Nitric acid and Ammonium thiocyanate solution.	Blood red colour is formed	Indicates the presence of Ferrous Iron
11.	<b>Test for phosphate:</b> The extract is treated with Ammonium Molybdate and concentrated nitric acid.	No yellow precipitate is formed	Absence of Phosphate
12.	<b>Test for zinc:</b> The extract is treated with Potassium Ferro cyanide.	No white precipitate is formed	Absence of Zinc
13.	<b>Test for albumin:</b> The extract is treated with Esbach's reagent.	No yellow precipitate is formed	Absence of Albumin
14.	<b>Test for ferric iron:</b> The extract is acidified with glacial acetic acid and potassium ferrocyanide	No blue colour is formed	Absence of ferric iron

**Chemical and drugs:**

The chemical used in this study were of analytical grade obtained from Department of Biochemistry, Government Siddha Medical College And Hospital, Palayamkottai.

**Biochemical analysis:**

Bio chemical screening of the extract gives idea regarding the chemical constituents present in trial drug.

**Preparation of extract :**

5gms of the drug was weighted accurately and placed in a 250 ml clean beaker then 50 ml of distilled water is added and dissolved well. Then it is boiled well for about 10minutes.it is cooled and filtered in a 100ml volumetric flask and then it is making up to 100ml with distilled water. This preparation was used for the biochemical analysis.

**RESULTS AND DISCUSSION**

The biochemical analysis of trial drug was tabulated above in table 2 the trial drug contains:

Calcium, Sulphate, Ferrous iron, Starch, Tannic acid, Unsaturated compound, Amino acid, and Reducing sugar these elements plays therapeutic role in the body and may helps in production of haemoglobin

**CONCLUSION**

The overall results of the study suggest that this drug contains few biochemical in them. the drug is easily available to prepare and cost effective and also safer for treatment. further pharmacological studies help in exploring this herbal Siddha formulation.

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**CONFLICT OF INTEREST :** None declared

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