



***Mukkudi* - a polyherbal combination of drugs used in traditional postnatal care in north Kerala, India**

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Abstract

Postnatal care (*sutika paricharana*) is the management during the period from soon after the placental expulsion to one and half/second months. According to ayurveda *paricharana* should start with *deepana pachana* drugs. *Mukkudi* is one of the drug presentations used in the traditional *sutika paricharana* in north Kerala, as food and medicine in the week after delivery. It is mainly used as *deepana, pachana, vathanulomana* and stimulating lactation. It is a type of formulation coming under the *upakalpana* of *kwathakalpana* (*pramatya kalpana*) as well as in *annavarga* (*khala kalpana*). The other formulations used in *sutika paricharana* are *kurukkumarunnu* (porridge) in the south and *kashaya, lehya* and *kalka* in north Kerala. Though the volume of knowledge in traditional postnatal care is very extensive. It differs according to caste, religion and geographical locations. Ayurvedic *Samhitas, Nighandus*, textbooks on ethnomedicine, and online publications were used to compile the relevant information in this regard. Data was also collected from 400 postnatal women from 4 zones by a questionnaire and directly from Ayurvedic experts, and traditional *Vaidya* families across Kerala. This paper highlights the prevalence of different formulations of *mukkudi* used in postnatal care from different places in north Kerala. *Mukkudi kanji, mukkudi moru, mukkudi churnam, mukkudi marunnu, pettumukkudi* and *pettu podi* are the major formulations. A total of 10.8% was used *mukkudi* preparations with a higher prevalence of 16.3% in zone C. As part of the study, collected different formulations of *mukkudi*, ingredients and indications of these formulations.

Keywords: *Mukkudi*, Postnatal care, *Sutika paricharana*, Traditional medicine

1. Introduction

A woman who has just given birth to a child followed by the expulsion of the placenta is *sutika*. If the placenta is not expelled the woman cannot be called *sutika* (Usha, 2013). *Mukkudi* is a special preparation of drug combinations used in postnatal care and *karkidaka chikitsa* especially in north Kerala. These preparations are the concoction of choice in digestive disorders of all kinds and are a cross between food and medicine. In Kerala, an Ayurveda principle-based culinary tradition was established in postnatal care (PNC). *Mukkudi* has an identity of medicine that can be used as a food supplement e.g., *mukkudi kanji* and also used as

medicine for postnatal ailments. It is used as minor preparations and also has many ingredients in different forms like *mukkudi kanji, mukkudi moru, mukkudi churnam, mukkudi marunnu, pettumukkudi* and *pettu podi*. The drugs are cooked in buttermilk, ground and made into a liquid form is called *mukkudi* (Padmanabha, 1987). In *Chikitsamanjari* (Namboothiri, 2003) different types of *mukkudi prayogas* for different diseases like *atisara, vishama jwara, pradara, sukrasrava* etc are mentioned. Around 30 *mukkudi yogas* are cited in *Chikitsamanjari*. In *pradara* and *sukrasrava, mukkudi* is mentioned as

sthanbhana yoga. *Arogyakalpadruma* (Ramavarier, 2011) mentioned the administration of *mukkudi* in *udara*, *arsas*, *grahani*, *atisara*, *apasmara* and *visarpa*. It is listed as a speciality of *Keraleeya Bala Chikitsa* like *patadi mukkudi*, *aardrakadi mukkudi*, *ajmodadi mukkudi*, *punarnavadi mukkudi* and is used as *mukkudi moru* or *thakra yusha*, another form of preparation. Here, medicines are cooked in buttermilk and grated then boiled in water. The *pramatya kalpana* is mentioned in *Sharangadhara Samhita poorvakhanta* (Ravindra, 2017) and *takra kalpana* in *Yogaratanakara* (Madhamshetty, 2008). Traditional *Keraleeya Vaidyas* used *pramatya kalpana* as *mukkudi* (Remadevi, 2010). In *pramatya*, *dravya kalka* is boiled in water. According to Chakrapani Datta *pramatya* is *deepana pachana kashaya*. *Sharangadhara Samhita* (Ravindra, 2017) describes the preparation of *pramatya*. One *pala* of grated drugs mixed well in one *idangazhi* (768ml) water and reduced to one fourth and called it *pramathya*. The recommended dosage is 2 *thuda*. eg, *mustaadi pramatya*. But there is no mention of *thakra* in this context.

Bhavaprakasa (Bulusu, 2007) mentions *pramatya* in *kruthannavarga* and it is a medicated gruel prepared with drugs. Here *Acharya* mentions the preparation as finely ground drugs mixed with water in the proportion of 1:8. The recommended dosage is 2 *pala*. This *pramatya kalpana* is also mentioned as *mukkudi* by commentators. The term *Khala* is also used as *mukkudi* but it is a form of *yusha kalpana*. *Navakhandom*, (Dhanwanthari and Narayanan, 1939) a traditional Ayurveda textbook mentioned *khala* in *khalakanda* as *mukkudi*. Here 20 gm of drugs boiled in 360 ml *thakram* and ground well to mix completely and then boiled again to reduce it. More than 30 *yogas* are included in *khalayogas*. *Keraleeya Ayurveda* textbook-like *Yogamritham* (Namboothiri, 2014) and *Vaidyamanorama* (Achutha, 2020) also mentioned *khala* as *mukkudi yoga*. These different formulations of *Mukkudi* are widely used in north Kerala in PNC such as *mukkudi churna*, *kashaya*, *kanji* etc. So, the collection and preservation of these *yogas* are essential for future generation.

2. Materials and methods

A cross-sectional and observational study was conducted on 400 postnatal mothers who utilized PNC across Kerala. 100 postnatal women from each zone, in the age group between 20 to 35 years were included in the survey. Data was collected using a semi-structured questionnaire which was prepared by the scholar in consultation with experts in the field of Ayurveda. The data regarding the PNC methods, formulations used, diet and care were ascertained through the questionnaire from 400 participants. For evaluation purposes, the state of Kerala was divided into four

zones, A, B, C, and D. The zones were set to have almost equal areas and population. A sample of 100 postnatal mothers was selected from each zone after getting informed consent. Thiruvananthapuram, Kollam and Alappuzha districts are included in zone A Pathanamthitta, Kottayam, Idukki and Ernakulam in zone B Thrissur, Palakkad, Malappuram in zone C and Kozhikode, Wayanad, Kannur and Kasaragod in zone D. An extensive literal survey was done to collect all possible documented knowledge on traditional PNC practices and cross verified with classical textbooks of Ayurveda as well as with the collected data through the survey.

3. Results and discussion

The results from the survey were conducted related to *mukkudi* as given below. The demographic profile of the samples from 4 zones is given in Table 1. In the survey, *mukkudi* was included as internal traditional medicine (Table 2). The prevalence was calculated as a percentage. After the survey 17 *mukkudi* formulations were found which were extensively used in different parts of Kerala (Table 4).

A total of 10.8% of mothers used *mukkudi* preparations, 1.1% in zone A, 6.9% in zone B, 12.1% in zone D and a higher prevalence of 16.3% in zone C (Table 3). The diversity of *mukkudi* preparations is solely from the northern zone of Kerala. These preparations have been modified to be incorporated in different forms of administration like *churna*, *kanji* and *kashaya*. The drugs in each formulation are compiled in Tables 5 to 14. It is used as an appetizer in the early weeks of postnatal care mainly during the 2nd to 3rd week. Table 5 enumerates *Mukkudi marunnu* used by traditional *Vaidya's* for PNC. They are recommended for *garbhashaya sodhana* and *deepanapachana* in the form of *Kashaya*. *Kanji* preparations are consumed after bath (Table 6) 3 to 5 days in the 2nd week is good for digestion. The *anupana* used in *churna* formulations is buttermilk. *Thakram* is also having *deepana*, *pachana* property. *Pettumukkudi* is widely used for PNC in Malappuram District (Table 8). In addition to *teeshna ushna* drugs, it contains *triphala* and *muthira* which have *medohara* properties. The physician from traditional *vaidya* families using *pettumukkudi kashaya* in PNC includes different drugs (Table 10). *Ariyaaru* (a combination of 6 seeds) is included in this *yoga*. It is *deepana*, *pachana* and *krimighna*. *Mukkudi churnam* (Table 11) includes *kayam*, *vellulli*, *ariyaru* and other drugs for good digestion and it is used in 2nd week after delivery. Table 12 is a *churna* form of *Mukkudi* that contains *teeshna*, *ushna* drugs used with buttermilk for *garbhashaya sodhana*. *Mukkudi kanji*

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(Table 13) is a medicated rice gruel obtained from zone C is used in the early weeks of the postnatal period for increasing digestion. While preparing this gruel, adding grated coconut, small onion and cumin seed is easily digestible and good for lactation. Other small *mukkudi yogas* (Table 14) are also used in various parts of north Kerala for PNC.

In general, *Mukkudi* is used for *deepana pachana, garbhasaya sodhana, vathanulomana, vrana ropana, vedana sthapana, sthanya janaana* and for proper lochial discharges. It is used as medicine as well as food. There is flexibility in selecting drugs to address

the need of the subject. *Mukkudi* plays an important role in health management during the regulation of the menstrual cycle. *Jeerakam, uluva, sathakuppa, ariyaru, thrikadu, ayamodakam and chuvannulli* and are the common drugs in *mukkudi yogas* and having *theekshna, ushna, kadu and laghu* properties helps *kapha vatha and samana and agni deepana* and helps to restore the health of the postnatal women. Table 14 shows all formulations are consumed along with buttermilk. *Thakram* (buttermilk) is *laghu guna, kashaya* and *amla rasa* and has the properties of *deepana and kaphavatahara*.

Table 1. Sociodemographic characteristics of the study participants – postnatal mothers

Variables	Categories	Frequency	Percentage
Zone	A	100	25.0
	B	100	25.0
	C	100	25.0
	D	100	25.0
Age in years	20-24	71	17.8
	25-29	173	43.3
	30 and above	156	39.0
Religion	Hindu	238	59.5
	Christian	27	6.8
	Muslim	135	33.8
Marital status	Yes	400	100
	No	0	0
Educational status	10	18	4.5
	12	82	20.5
	Graduate	99	24.8
	Postgraduate	36	8.8
	Professional	166	41.5
Occupation	Government	40	10.0
	Private	96	24.0
	Self-Employed	71	17.8
	Others	28	7.0
Married status	Unemployed	165	41.3
	Yes	400	100.0
	No	0	0

Table 2. Number of medicines from the survey

Types of medicines	Number of types of medicines and diet
Internal classical medicine	53
Internal traditional medicine	44
External medicine	18
Diet varieties	57
Internal patent medicine	8

Table 3. Prevalence of *mukkudi yogas*

Use of mukkudi yogas by zone					
Zones	A	B	C	D	Total
<i>Mukkudi yogas</i>	1.1%	6.9%	16.3%	12.1%	10.8%
Use of mukkudi yogas by age group					
Age group	20-24	25-29	30 and above	Total	
<i>Mukkudi yogas</i>	13.6%	10.4%	9.3%	10.8%	
Use of mukkudi yogas by religion					
Religion	Hindu	Christian	Muslim	Total	
<i>Mukkudi yogas</i>	7.3%	2.5%	15.2%	10.8%	

Table 4. Different formulations of *mukkudi* used in Post NatalCare

Sl.No	Name of the preparation	Form of preparation	No of preparations
1	<i>Mukkudi marunnu</i>	<i>Kashayam</i>	1
2	<i>Mukkudi Kanji</i>	Gruel	5
3	<i>Pettu mukkudi</i>	Powder	1
4	<i>Mukkudi churnam</i>	Powder	6
5	<i>Pettumukkudi</i>	<i>Kashayam</i>	1
6	<i>Mukkudi moru</i>	<i>Thakra</i>	2
7	<i>Inchi mukkudi</i>	<i>Thakra</i>	1
Total			17

Table 5. Formulation 1, *Mukkudi marunnu* (Physician 1)

Sl.No	Drug name	Scientific name	Part used	Karma
1	<i>Masham</i>	<i>Vigna mungo</i> (L.) Hepper	Seed	<i>Snigdha, guru, ushna, madhura rasam, vatha samana</i>
2	<i>Mudgam</i>	<i>Vigna radiata</i> L. <i>subloblata</i>	Seed	<i>Sleshma pithaharam, ruchya</i>
3	<i>Ashwagandha</i>	<i>Withania somnifera</i> (L.) Dunal	Rhizome	<i>Madhura, thiktha, Kashaya, balya, thridosha samana,</i>
4	<i>Rasna</i>	<i>Alpinia galanga</i> (L.) Willd.	Rhizome	<i>Ushna, kashaya, deepana kapha vatha samana</i>
5	<i>Vacha</i>	<i>Acorus calamus</i> L.	Rhizome	<i>Deepana. pachana, vata kapha samanam</i>
6	<i>Kattu thippali</i>	<i>Piper longum</i> L.	Fruit	<i>Kadu, ushnam, vatha kapha samana</i>
7	<i>Kushta</i>	<i>Saussurea lappa</i> (Decne) Sch, Bip.	Bark	<i>Madhura, rooksham, guru, grahi, seetham</i>
8	<i>Jeera</i>	<i>Cuminum cyminum</i> L.	Seed	<i>Theekshna, ushna, katu, laghu. kapha vatha amana</i>
9	<i>Thakara</i>	<i>Senna tora</i> (L.) Roxb.	Stem	<i>Thiktham, laghu, Seetha</i>
10	<i>Grambu</i>	<i>Syzygium aromaticum</i> (L.) Merr. L M Perry.	Fruit	<i>Kashayam, Madhuram, vatha kapha samanam</i>
11	<i>Nagapushpa</i>	<i>Mesua ferrea</i> L.	Flower	<i>Seetham, deepanam, vatha samana</i>
12	<i>Yashti</i>	<i>Glycyrrhiza glabra</i> L.	Stem	<i>Guru, madhura, seetha, vrukshya, Raktapitta samana</i>
13	<i>Gajapippali</i>	<i>Scindapsus Officinalis</i> (Roxb) Schott	Fruit	<i>Seethaveeryam, katu, tikta rasam, kapha samana</i>
14	<i>Chithrakom</i>	<i>Plumbago zeylanica</i> L.	Root	<i>Kadu, laghu, tikshna, rooksham. ushnam Deepana pachana</i>
15	<i>Vidangam</i>	<i>Embelia ribes</i> Burm. f.	Seed	<i>Thiktha, seetha, kapha pitha samana, pachana</i>
16	<i>Sarshapa</i>	<i>Brassica nigra</i> L.	Seed	<i>Theekshna, ushnam, rooksham, kapha vata samana</i>

17	<i>Methika</i>	<i>Trigonella foenum- graecum</i> L.	Seed	<i>Thiktha,uushana,laghu.rooksha,ushna, deepani</i>
18	<i>Shatapushpa</i>	<i>Anethum graveolens</i> L.	Seed	<i>Katu,thiktha, snigdha,ushna kapha vata samana</i>
19	<i>Ajamoda</i>	<i>Trachyspermum roxburghianum</i> H. Wolff	Seed	<i>Rooksha,thiktha,kadu, laghu,ushna</i>
20	<i>Haridra</i>	<i>Curcuma longa</i> L.	Rhizome	<i>Katu,thiktha,kapha piktha samana</i>
21	<i>Aashaalika</i>	<i>Lepidium sativum</i> L.	Seed	<i>Theekshna,kapha,samana,deepani vatha samana</i>
22	<i>Jaati</i>	<i>Myristica fragrans</i> Houtt.	Fruit	<i>Katu tikta rasa,vrukshya</i>
23	<i>Jathipathri</i>	<i>Myristica fragrans</i> Houtt.	Aril	<i>Kadu thiktha rasam,vrukshya</i>
24	<i>Lavangam</i>	<i>Syzygium aromaticum</i> (L.) Merr. & L.M. Perry.	Flower	<i>Katu, thiktham rasam , laghu snigtham gunam, seeta veeryam</i>
25	<i>Ela</i>	<i>Elettaria cardamomum</i> (L.) Maton	Fruit	<i>Anticephalalgia,antiemeticDeepana,vatha samana</i>
26	<i>Kankolam</i>	<i>Piper cubeba</i> L. f.	Dried unripe berries	<i>Thiktha,ooshana, laghu,theekshna,ushna</i>
27	<i>Lasuna</i>	<i>Allium sativum</i> L.	Bulb	<i>Ooshana,theeksna,snigdha, Deepana,katu,thiktha,</i>
28	<i>Kudaja</i>	<i>Holarrhena antidysenterica</i> Wall	Seed	<i>ushna rasam,laghu, ruksha guna, vata kapha hara</i>
29	<i>Bakuchi</i>	<i>Cullen corylifolium</i> (L.) Medik	Seed	<i>Tiktha rasa ushna veerya, laghu</i>
30	<i>Dhanyakam</i>	<i>Coriandrum sativum</i> L.	Seed	<i>Laghu,thiktha,kadu,ushnam,deepana,pachana</i>
31	<i>Jyothishmathi</i>	<i>Celastrus paniculatus</i> Willd	Seed	<i>Thiktha,kadu,rooksha,laghu,kapha vatha samana</i>
32	<i>Akkikaruka</i>	<i>Anacyclus pyrethrum</i> (L.) Lag.	Whole plant	<i>Katu, ruksha,teekshna ushna, kapha vata samana</i>

Table 6. Formulation 2, *Mukkudi kanji* (from survey)

Sl.No	Malayalam	Sanskrit	Scientific name	Part used
1	<i>Ramacham</i>	<i>Useeram</i>	<i>Chrysopogon zizanioides</i> (L.) Roberty	Root
2	<i>Kanji pavutta</i>	<i>Kakachdi</i>	<i>Pavetta indica</i> L.	Root
3	<i>Puthari chunda</i>	<i>Bruhati</i>	<i>Solanum anguivi</i> Lam.	Root
4	<i>Kurunthotti</i>	<i>Bala</i>	<i>Sida rhombifolia</i> L.	Root
5	<i>Oreerathinte veru</i>	<i>Bhandeeram</i>	<i>Clerodendrum infortunatum</i> L.	Root
6	<i>Malli</i>	<i>Dhanyakom</i>	<i>Coriandrum sativum</i> L.	Seed
7	<i>Manjal</i>	<i>Haridra</i>	<i>Curcuma longa</i> L.	Rhizome
8	<i>Chukku</i>	<i>Sundi</i>	<i>Zingiber officinale</i> Roscoe	Rhizome
9	<i>Kurumulaku</i>	<i>Maricham</i>	<i>Piper nigrum</i> L.	Seed
10	<i>Kaduku</i>	<i>Sarshapam</i>	<i>Brassica nigra</i> L.	Seed
11	<i>Thenga</i>	<i>Nalikeram</i>	<i>Cocos Nucifera</i> L.	Fruit
12	<i>Cheriyu ulli</i>	<i>Palandu</i>	<i>Allium cepa</i> L.	Bulb
13	<i>Jeerakam</i>	<i>Jeera</i>	<i>Cuminum cyminum</i> L.	Seed

*Dry drugs numbered 1 to 6, remove skin and powder it. Add powder of turmeric, dry ginger, pepper, and mustard into it. Prepare a porridge with the prepared mixture by adding the required quantity of rice. When cooked add grated coconut, small onion and cumin seed into it and recook the mixture well. Add small onion fried in ghee into it. Consumed after bathing for good digestion.

Table 7. Formulation 3, *Mukkudi churnam*, (Physician 2)

Sl.No	Malayalam	Sanskrit	Scientific name	Part used
1	<i>Sathakuppa</i>	<i>Shatapushpa</i>	<i>Anethum graveolens</i> L.	seeds
2	<i>Ayamodakam</i>	<i>Ajamoda</i>	<i>Trachyspermum, roxburghianum</i> H. Wolff	Seeds
3	<i>Jeerakam</i>	<i>Jeera</i>	<i>Cuminum cyminum</i> L.	Seeds
4	<i>Aasali</i>	<i>Chandrika</i>	<i>Lepidium sativum</i> L.	Seeds
5	<i>Manjal</i>	<i>Haridra</i>	<i>Curcuma longa</i> L.	Rhizome

*Take all these drugs in equal quantities and finely powder them. Dose: 1teaspoon morning with buttermilk

Table 8. Formulation 4, *Pettumukkudi* (from survey)

Sl.No	Malayalam	Sanskrit	Scientific name	Part used
1.	<i>Akkikaruka</i>	<i>Akarakarabha</i>	<i>Anacyclus pyrethrum</i> (L.) Lag.	Roots
2	<i>Thamarayalli</i>	<i>Padmakarnika</i>	<i>Nelumbo nucifera</i> Gaertn.	Fruits
3	<i>Jathipathri</i>	<i>Jathipathri</i>	<i>Myristica fragrans</i> Houtt	Aril
4	<i>Elam</i>	<i>Ela</i>	<i>Elettaria cardamomum</i> L	Seeds
5	<i>Ayamodakam</i>	<i>Ajamoda</i>	<i>Trachyspermum, roxburghianum</i> H. Wolff	Seeds
6	<i>Vizhalari</i>	<i>Vidangam</i>	<i>Embelia ribes</i> Burm.f.	Seeds
7	<i>Uluva</i>	<i>Metika</i>	<i>Trigonella foenum - graecum</i> L.	Seeds
8	<i>Muthira</i>	<i>Kulatha</i>	<i>Macrotyloma uniflorum</i> (Lam.) Verdc	Seeds
9	<i>Chukku</i>	<i>Sundi</i>	<i>Zingiber officinale</i> Roscoe	Rhizome
10	<i>Yavam</i>	<i>Yavam</i>	<i>Hordeum vulgare</i> L.	Grains
11	<i>Kurumulaku</i>	<i>Maricham</i>	<i>Piper nigrum</i> L.	Fruits
12	<i>Thippali</i>	<i>Pippali</i>	<i>Piper longum</i> L.	Fruits
13	<i>Kadukka</i>	<i>Haritaki</i>	<i>Terminalia chebula</i> Retz.	Fruits /trough shell
14	<i>Thanikka</i>	<i>Vibheethaki</i>	<i>Terminalia bellirica</i> (Gaertn) Roxb.	Fruits /trough shell
15	<i>Nellikka</i>	<i>Amalaki</i>	<i>Phyllanthus emblica</i> L.	Fruits /trough shell
16	<i>Vayambu</i>	<i>Vacha</i>	<i>Acorus calamus</i> L.	Rhizome
17	<i>Chittaratha</i>	<i>Rasna</i>	<i>Alpinia calcarata</i> (Andrews) Roscoe	Roots

*Take all these drugs in equal quantities and finely powder them. Using one teaspoon powder evening with buttermilk

Table 9. Formulation 5, *Mukkudi Churnam* (survey)

SL. No	Malayalam	Sanskrit	Scientific name	Part used
1	<i>Jeerakam</i>	<i>Jeera</i>	<i>Cuminum cyminum</i> L.	Seed
2	<i>Ayamodakam</i>	<i>Ajamoda</i>	<i>Trachyspermum, roxburghianum</i> H. Wolff	Seed
3	<i>Manjal</i>	<i>Haridra</i>	<i>Curcuma longa</i> L.	Rhizome
4	<i>Aasali</i>	<i>Chandrika</i>	<i>Lepidium sativum</i> .L.	Seed
5	<i>Cheruvula</i>	<i>Gorakshaganja</i>	<i>Aerva lanata</i> (L.) Juss.ex Schult	Root

*Take all these drugs in equal quantities and powdered them. Using 1 teaspoon powder evening with buttermilk 5 days in the 2nd week after delivery.

Table 10. Formulation 6, *Pettumukkudi Kashayam*, (Physician 2)

SL. No	Malayalam	Sanskrit	Scientific name	Parts used
1	<i>Vizhalari</i>	<i>Vidangam</i>	<i>Embelia ribes</i> Burm.f.	Seed
2	<i>Kudappalayari</i>	<i>Kudaja</i>	<i>Holarrhena antidysenterica</i> Wall	Seed
3	<i>Elathari</i>	<i>Ela</i>	<i>Elettaria cardamomum</i> L	Seed
4	<i>Karkokilari</i>	<i>Bakuchi</i>	<i>Psoralea corylifolia</i> L.	Seed
5	<i>Kothampalayari</i>	<i>Dhanyakom</i>	<i>Coriandrum sativum</i> L.	Seed
6	<i>Cherupunnayari</i>	<i>Jyothishmathi</i>	<i>Celastrus paniculatus</i> Willd.	Seed
7	<i>Karimjeerakam</i>	<i>Karavi</i>	<i>Nigella sativa</i> L.	Seed
8	<i>Jeerakam</i>	<i>Jeera</i>	<i>Cuminum cyminum</i> L.	Seed
9	<i>Sathakuppa</i>	<i>Sathahwa</i>	<i>Trachyspermum ammi</i> (L) Sprague	Seed
10	<i>Chukku</i>	<i>Sundi</i>	<i>Zingiber officinale</i> Roscoe	Rhizome
11	<i>Kurumulaku</i>	<i>Maricham</i>	<i>Piper nigrum</i> L.	Seed
12	<i>Thippali</i>	<i>Pippali</i>	<i>Piper longum</i> L.	Fruit
13	<i>Induppu</i>	<i>Saidhavam</i>	Himalayan salt	
14	<i>Vellulli</i>	<i>Lasunam</i>	<i>Allium sativum</i> L.	Rhizome
15	<i>Kayam</i>	<i>Hingu</i>	<i>Ferula asafoetida</i> (Falc) H. Karst.	
16	<i>Vayambu</i>	<i>Vacha</i>	<i>Acorus calamus</i> L.	Rhizome
17	<i>Manjal</i>	<i>Nisa</i>	<i>Curcuma longa</i> L.	Rhizome
18	<i>Mathalam</i>	<i>Dadimam</i>	<i>Punica granatum</i> L.	Fruit
19	<i>Kudalchurukki</i>	<i>Madanaghanta</i>	<i>Spermacoce hispida</i> L.	Whole plant
20	<i>Ayamodakam</i>	<i>Ajamoda</i>	<i>Trachyspermum roxburghianum</i> H.Wolff	Seed

Table 11. Formulation 7, *Mukkudi churnam* (Ramachandran 2019)

SL.No	Malayalam	Sanskrit	Scientific name	Parts used
1	<i>Vizhalari</i>	<i>Vidangam</i>	<i>Embelia ribes</i> Burm.f.	Seed
2	Kudakappalayari	<i>Kudaja</i>	<i>Holarrhena antidysenterica</i> Wall.	Seed
3	<i>Elathari</i>	<i>Ela</i>	<i>Elettaria cardamomum</i> L	Seed
4	<i>Karkokilari</i>	<i>Bakuchi</i>	<i>Psoralea corylifolia</i> L.	Seed
5	<i>Kothampalayari</i>	<i>Dhanyakom</i>	<i>Coriandrum sativum</i> L.	Seed
6	<i>Cherupunnayari</i>	<i>Jyothishmathi</i>	<i>Celastrus paniculatus</i> Willd.	Seed
7	<i>Karimjeerakam</i>	<i>Karavi</i>	<i>Nigella sativa</i> L.	Seed
8	<i>Thulasi</i>	<i>Bhashpikam</i>	<i>Ocimum sanctum</i> L.	Whole plant
9	<i>Jeerakam</i>	<i>Jeera</i>	<i>Cuminum cyminum</i> L.	Seed
10	<i>Chukku</i>	<i>Sundi</i>	<i>Zingiber officinale</i> Roscoe	Dry rhizome
11	<i>Kurumulaku</i>	<i>Maricham</i>	<i>Piper nigrum</i> L.	Seed
12	<i>Thippali</i>	<i>Pippali</i>	<i>Piper longum</i> L.	Seed
13	<i>Induppu</i>	<i>Saidhavam</i>	Rocksalt	
14	<i>Vellulli</i>	<i>Lasunam</i>	<i>Allium sativum</i> L.	Bulb
15	<i>Kayam</i>	<i>Hingu</i>	<i>Ferula asafoetida</i> (Falc) H. Karst.	
16	<i>Vayambu</i>	<i>Vacha</i>	<i>Acorus calamus</i> L.	Rhizome
17	<i>Manjal</i>	<i>Nisa</i>	<i>Curcuma longa</i> L.	Rhizome
18	<i>Mathalom</i>	<i>Dadimam</i>	<i>Punica granatum</i> L.	Fruit
19	<i>Ayamodakam</i>	<i>Ajamoda</i>	<i>Trachyspermum roxburghianum</i> (H.) Wolff.	Seed

Table 12. Formulation 8, *Mukkudi* (Ramachandran, 2019)

Sl. No.	Malayalam	Sanskrit	Scientific name	Parts used
1	<i>Thippali</i>	<i>Pippali</i>	<i>Piper longum</i> L.	Seed
2	<i>Thippali moolam</i>	<i>Pippali</i>	<i>Piper longum</i> L.	Seed
3	<i>Kattu Mulaku</i>	<i>Chavya</i>	<i>Piper retrofractum</i> Vahl	
4	<i>Koduveli</i>	<i>Chitrakam</i>	<i>Plumbago zeylanica</i> L.	Root
5	<i>Chukku</i>	<i>Sundi</i>	<i>Zingiber officinale</i> Roscoe	Dry rhizome
6	<i>Kurumulaku</i>	<i>Maricham</i>	<i>Piper nigrum</i> L.	Seed
7	<i>Jeerakam</i>	<i>Jeera</i>	<i>Cuminum cyminum</i> L.	Seed
8	<i>Karimjeerakam</i>	<i>Karavi</i>	<i>Carum carvi</i> L.	Seed
9	<i>Vayambu</i>	<i>Vacha</i>	<i>Acorus calamus</i> L.	Rhizome
10	<i>Induppu</i>	<i>Saindhava</i>	Himalayan salt	

* Powder these drugs and used with buttermilk.

Table 13. Formulation 9, *Mukkudi kanji* (Survey)

Sl.No	Malayalam	Sanskrit	Scientific name	Part used
1	<i>Ramacham</i>	<i>Useeram</i>	<i>Chrysopogon zizanioides</i> (L) Roberty	Root
2	<i>Kanji pavutta</i>	<i>Carnicara</i>	<i>Pavetta indica</i> L.	Root
3	<i>Puthari chunda</i>	<i>Bruhathi</i>	<i>Solanum anguivi</i> Lam	Root
4	<i>Kurunthothi veru</i>	<i>Bala</i>	<i>Sida rhombifolia</i> L.	Root
5	<i>Peruvila veru</i>	<i>Vattaperuku</i>	<i>Clerodendrum infortunatum</i> L.	Root
6	<i>Malli</i>	<i>Dhanyakam</i>	<i>Coriandrum sativum</i> L.	Seed
7	<i>Manjal</i>	<i>Haridra</i>	<i>Curcuma longa</i> L.	Rhizome
8	<i>Chukku</i>	<i>Sundi</i>	<i>Zingiber officinale</i> Roscoe.	Rhizome
9	<i>Kurumulaku</i>	<i>Maricham</i>	<i>Piper nigrum</i> L.	Seed
10	<i>Kaduku</i>	<i>Sarshapam</i>	<i>Brassica juncea</i> (L.) Zern	Seed
11	<i>Thenga</i>	<i>Nalikeram</i>	<i>Cocos nucifera</i> L.	Fruit
12	<i>Cheriyu ulli</i>	<i>Palandu</i>	<i>Allium cepa</i> L.	Bulb
13	<i>Jeerakam</i>	<i>Jeera</i>	<i>Cuminum cyminum</i> L.	Seed

* Dry drugs numbered 1 to 6, remove skin and powder it. Add powder of turmeric, dry ginger, pepper, and mustard into it. Prepare a porridge with the prepared mixture by adding the required quantity of rice. When cooked add grated coconut, small onion and cumin seed into it and recook the mixture well. Add small onion fried in ghee into it.

Table 14. Other small *mukkudi yogas* used in PNC

Formulation No	Preparation	Contents
Formulation No 10	<i>Mukkudi kanji</i>	Gruel prepared with brown Rice, <i>Laja</i> , <i>Amalaki</i> , & <i>Buttermilk</i>
Formulation No 11	<i>Mukkudi kanji</i>	Rice, <i>Sarshapam</i> , Ghee, <i>Saidhava</i> . & <i>Buttermilk</i>
Formulation No 12	<i>Mukkudi kanji</i>	Rice, <i>Surasa moola</i> , <i>Vidanga moola</i> , <i>Kattu Thippali</i> , <i>Sigru twak</i> , Coconut milk & <i>Buttermilk</i> .
Formulation No 13	<i>Mukkudi Moru</i>	<i>Dronapushpi samoolam</i> , <i>Thulasi</i> , <i>Vasa (adalodakam)</i> , Tender leaves of the mango tree, Curry leaves & <i>Buttermilk</i> .
Formulation No 14	<i>Mukkudi moru</i>	<i>Vasthukam</i> , <i>Dronapushpi samoolam</i> , <i>Kattuthippali</i> . <i>Saliparni</i> , <i>Bhandeera</i> , <i>Nirgundi</i> , <i>Hashthapadi</i> , <i>Buttermilk</i> & Salt.
Formulation No 15	<i>Inchi mukkudi:</i>	<i>Ardraka</i> & <i>Buttermilk</i> .
Formulation No 16	<i>Mukkudi churnam</i>	<i>Apamarga moola</i> , <i>Aswatha mukulam</i> , <i>Dronapushpi</i> , <i>Punarnava moolam</i> , <i>Ardrakom</i> , <i>Saidhava</i> & <i>Buttermilk</i> .
Formulation No 17	<i>Mukkudi</i>	<i>Dronapushpi swarasam</i> (25ml), <i>Dusparsha</i> (15ml), Salt, & <i>Buttermilk</i> .

4. Conclusion

Mukkudi is a widely used drug combination for PNC in north Kerala as food and medicine. It is mainly used as *deepana*, *pachana*, *vathanulomana* and for *stimulating lactation*. In Kerala, many drug presentations were converted to a user-friendly manner. *Mukkudi* is one among them. Lot of herbs are found used in preparing *Mukkudi* for PNC according to the needs of the subject. This study unearths simple and easily available yet potent herbs with extensive use in the postpartum period. Traditional knowledge proves its utility in the postpartum period, for the purification of the uterus and postpartum anaemia and to increase breast milk. But most of these practices are being followed as a ritual rather than a need-based application. Hence detailed clinical studies are required for validation and documentation of the benefits of individual preparations and steps should be taken to incorporate such knowledge in Ayurvedic Pharmacopoeia.

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