A Literature Review of Bhaskaralavana Churna for Ajeeranam in Indigenous Medicine

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ABSTRACT

The Sri Lankan Indigenous Medicine is a mixture of the Ayurveda, Siddha, Unani and Desheeya Chikitsa. **Bhaskaralavanachurna** is one of the internal medicine which is the herbo mineral preparation. Bhaskaralavanachurna is one of the most important drugs in Ayurvedha Government Hospitals in Sri Lanka. Therefore we selected this drug to literature review related its ingredients for “**Ajeeranam**”. This study was done at Unit of Siddha Medicine, University of Jaffna from October 2019 to January 2020. Data for the literature review were collected from relevant books, peer review journals and websites. It consists scientific names; habitat; family; vernacular names; parts used; organoleptic characters; phytochemical; pharmacological actions for the ingredients of this drug. From this Churna has 18 ingredients, 14 (77.7%) were medicinal plants and 04 (22.2%) were minerals. Based on morphology 7 (50%) plants were herbs. From these plants, 3 (21.42%) of the species were found in Piperaceae family; 11 (78%) were cultivated in Ceylon; 5 species (35.75%) were used as fruits and 3 (21.42%) were used as seeds. These plants contain pungent taste [10 (45%)], Salty [4 (18%)], bitter [3 (14%)], astringent [2 (9%)], sweet [2 (9%)] and sour [1 (5%); hot potency [14 (78%)], cold potency [3 (17%)] and hot and cold [1 (5%); pungent efficacy [16 (89%)] and sweet [2 (11%); pharmacological actions such as carminative [14 (77.7%)], stomachic [12 (66.6%)], stimulant [7 (38.8%)] and astringent [3 (16.6%)]. Phytochemicals such as volatile oil [8 (57.14%)] and starch [4 (28%)] were highly found in these medicinal plants. 100% Na, 50% Mg, 25% Ca, and 25% Cl were found in these minerals. This literature review provides useful documented evidence related its ingredients for Ajeeranam. There is need further laboratory study and toxicity study about this drug in future.

Keywords: Ajeeranam, Bhaskaralavanachurna, Herbomineral, Indigenous medicine.

1. Introduction

The Sri Lankan Indigenous Medicine is a mixture of the Ayurveda, Siddha, Unani and Desheeya Chikitsa [35]. Siddha medicine is an ancient system of medicine prevalent in South India [28]. The system is said to have emerged in antiquity from highly evolved consciousness of siddhars. They possessed super natural powers [34].

In Siddha medicine, the individual is microcosm of the universe. The human body consists of the five primordial elements and 7 physical constituents [28]. Vatham, pitham, kapham are three humors which are life constituents of the human body [23]. Disturbance and imbalance of humours leads to disease [34].

Treatment is aim at restoring balance to the mind and body system [28]. Siddhars can be classified the medicine type into three groups such as herbal products, mineral products and animal products [34]. There are 32 types of internal and 32 external medicines in siddha medicine [4].

Chooranam is one of the internal medicine which is the fine powder of drug. The raw drugs are purified separately then pounded separately, sieved mixed according to the given ratio. It is purified by pittavial process [4]. Bhaskaralavana churna is one of the internal medicine in the category of churnam which is the herbo mineral preparation which consist totally 18 ingredients, from this 14 were herbs and 04 were minerals [3].

Bhaskara Lavana churna is one of the most important drugs in Ayurvedha hospitals in Sri Lanka [5]. It was given for ajeeranam such as indigestion, gas flatulence, gastritis, loss of appetite, abdominal pain and constipation in the dose of 500 mg-1500 mg, bd, before meal with hot water/Butter milk [3],[33]. Butter milk has high nutrient value and cooling properties (97.5 g moisture) [25].

2. Methodology

2.1. Study design

A literature review of Bhaskaralavana churna for ajeeranam in indigenous medicine.

2.2. Place and study period

Library at Unit of Siddha Medicine, University of Jaffna, Sri Lanka from October 2019 to January 2020.

2.3. Research instrument

Data entry form.

2.4. Data collection

Data for the literature review were collected from relevant books, peer review journals and websites with the help of data entry form which consists botanical names/scientific names, habitat, family, vernacular names, parts used, organoleptic characters, phytochemicals, and pharmacological actions for the ingredients of this drug.

2.5. Statistical analysis

Collected data were analyzed by simple statistical method with the help of MS Office 2010.

3. Results and discussion

3.1. Taxonomic position of the medicinal plants

Fourteen plants species belonging to 8 families which had been documented as remedies for ajeeranam were used for review. The taxonomic position of the individual plants is summarized in table 1. Plant taxonomy is the science that finds identifies, classifies, describes, and names of the plants [9].

3.2. Family distribution of the medicinal plants

A plant family is simply a collection of plants that share characteristics grouped together. Plants can be categorized by similar features such as overall appearance, seed groupings, flower, shape and to show their relationship to one another [35]. Families of the selected medicinal plants are shown in table 1.

Table 1. Taxanomic positions of the medicinal plants and family distribution of the medicinal plants

Botanical/ Scientific/ Chemical names	Vernacular names				Family names/ types of minerals
	Tamil name	English name	Sinhala name	Sanskrit name	
<i>Coriander sativum</i>	Koththamalli	Coriander	Kottamalli	Ababika	Umbeliferae
<i>Piper longum</i>	Thipilli	Long pepper	Tipilli	Chapala	Piperaceae
<i>Piper lonfum</i>	Thipilli moolam	Long pepper	Tipilli	Chapala	Piperaceae
<i>Nigella sativa</i>	Karuncheeragam	Black cumin	Kaluduru	Bhashpika	Ranunculaceae

<i>Mesua ferrea</i>	Sirunagampoo	Ceylon ironwood	Diyana	Naga	Guttiferae
<i>Abies webbiana</i>	Thalisapathri	Flaurtia Himalayan silver	Talispatura	Talispathra	Coniferae
<i>Cinnamomum verum</i>	Illavangam	Cinnamon	Kurundu	Balya	Lauraceae
<i>Cinnamomum tamala</i>	Illavangam	Cinnamon	Kurundu	Balya	Lauraceae
<i>Garcinia cambogia</i>	Korukkai	Brindle berry	Goraka	Madurammala	Guttiferae
<i>Elettaria cardamomum</i>	Aealam	Malabar cardamomum	Ensal	Bahula	Zingiberaceae
<i>Cuminum cyminum</i>	Seeragam	Cumin	Sudu-duru	Ajaji	Umbelliferae
<i>Piper nigrum</i>	Milagu	Black pepper	Gammiris	Dharmavartana	Piperaceae
<i>Punica granatum</i>	Maathulai oodu	Pomegranate fruit shell	Delun	Dadima	Punicaceae
<i>Zingerber officinale</i>	Sukku	Dry ginger	Inguru	Anupama	Zingerberaceae
<i>Sodium chloride</i>	Kariyuppu	Table salt	Lunu	-	Kaarasaaram
<i>Black salt</i>	Pitalavanam	Black salt	-	Krishna lavana	Kaarasaaram
<i>Asphalte</i>	Kallupu	Asphalte	-	-	Kaarasaaram
<i>Sodium chloride impura</i>	Induppu	Rock salt		Saindhava	Kaarasaaram

From these medicinal plants, 21.4% of the species were found in Piperaceae. Umbelliferae, Lauraceae, Guttiferae and Zingiberaceae were 14.28% each other. Punicaceae, Coniferae, and Ranunculaceae were 7.14% each other.

3.3. Parts of the medicinal plants used for Bhaskaralavana Churna

Medicinal properties derived from plants may come from many different parts of a plant including leaves, roots, barks, seeds, fruits, and flowers.

Fig.1. Parts of the medicinal plants used for Bhaskara lavana Churna

The different parts of these plants contain different active ingredients and organoleptic characters [11]. The review revealed that parts used for Bhaskaralavana Churna were fruits 35.71%, seeds 21.42%, leaves 14.28% and root, bark, dry rhizome and flowers were 7.14% each other [1],[8].

3.4. Morphology of medicinal plants used for Bhaskaralavana Churna

Plant morphology is the study of the physical form and external structure of plants. It is the study of the internal structure of plants. Plant morphology is useful in the visual identification of plants [10]. Based on the morphology of medicinal plants 50% plants were classified to be herbs, 35.71% trees and 14.28% shrub [1],[8].

3.5. Habitat of the medicinal plants used for Bhaskaralavana Churna

The review indicates that 11 (78.5%) plants are cultivated in Ceylon and 3 (21.42%) plants are not cultivated in Ceylon. They are cultivated in foreign countries [2],[8].

3.6. Siddha properties of medicinal plants and minerals of this Churna

The drugs used by Siddha medicine are classified on the basis of five properties: taste, character, potency, efficacy and action [12]. Taste has got a significant place in Siddha medicine. Tongue experiences these tastes when a drug is administrated orally. Six tastes are sweet, salty, pungent, bitter and astringent. Potency is described as an active constituent of the drug which is responsible for the pharmacological activity of the medicinal herbs and other drugs. The drug has cold and hot potency. It is said to be the post absorptive taste which is an important aspect [13],[14]. These plants contain siddha properties such as pungent taste 71.4%, bitter 21.4% and sour, sweet and astringent were 7.1% each other. Minerals also have taste, potency and efficacy which are responsible for its pharmacological actions. These minerals were salty taste, hot potency and pungent efficacy. Table 2 shows its organoleptic characters of this medicinal plant and minerals of this drug [4].

Table 2. Ingredients with parts used and its organoleptic characters of this drug

Sl. No.	Botanical names	Parts used	Tastes	Potency (Hot/cool)	Efficacy (vipakam)
1	<i>Coriander sativum</i>	Seed	Pungent	Hot and cool	Pungent
2	<i>Piper longum</i>	Fruit	Pungent	Hot	Pungent
3	<i>Piper longum</i>	Root	Pungent	Hot	Pungent

4	<i>Nigella sativa</i>	Seed	Bitter	Hot	Pungent
5	<i>Mesua ferrea</i>	Flower	Bitter, Astringent	Cool	Pungent
6	<i>Abies webbiana</i>	Leaves	Pungent	Hot	Pungent
7	<i>Cinnamomum verum</i>	Bark	Pungent, sweet	Hot	Sweet
8	<i>Cinnamomum tamala</i>	Leaves	Pungent	Hot	Pungent
9	<i>Garcinia cambogia</i>	Fruit	Sour	Hot	Pungent
10	<i>Elettaria cardamomum</i>	Seed	Pungent	Hot	Pungent
11	<i>Cuminum cyminum</i>	Fruit	Pungent, sweet	Cool	Sweet
12	<i>Piper nigrum</i>	Fruit	Pungent, Bitter	Hot	Pungent
13	<i>Punica granatum</i>	Fruit shell	Astringent	Cool	Pungent
14	<i>Zingerber officinale</i>	Dry rhizome	Pungent	Hot	Pungent
15	<i>Sodium chloride</i>	-	Salty	Hot	Pungent
16	<i>Black salt</i>	-	Salty	Hot	Pungent
17	<i>Asphalte</i>	-	Salty	Hot	Pungent
18	<i>Sodium chloride impura</i>	-	Salty	Hot	Pungent

3.7. Pharmacological actions of the medicinal plants and minerals of this drug

Action is the function of the drug. A drug has more than one action [13],[14]. The specific pharmacological actions of the medicinal plants and minerals which were utilized for the Bhaskaralavana are listed in Table 3. According to this table, carminative 66.6%, stomachic 61.1%, stimulant 38.8%, digestive 5.5%, astringent 16.6%, refrigerant 5.5%, laxative 5.5% , diuretic 11.1%, astringent 16.6% and alterative and tonic were 11.1% each other.

3.8. Phytochemicals contents of this drug

Phytochemicals are non-nutritive chemicals that have disease preventive properties which are active principle for function of the drug [15]. Common Phytochemicals of these plants such as volatile oil 57.1%, essential oil 7.1%, fixed oil 14.2%, starch 28.5%, resin 28.5%, tannin 21.4%, fatty oil 21.4% and gums 14.2%. The minerals contain Ca, Mg, Na and Cl [2],[8]. Table 3 shows pharmacological actions and phytochemicals of ingredients of this drug.

Table 3. Pharmacological actions and phytochemicals of ingredients of this drug

Sl. No.	Botanical name/ Chemical name	Pharmacological actions	Phytochemicals
1	<i>Coriander sativum</i>	Carminative, stomachic, stimulant, diuretic, aromatic refrigerant, tonic, antibilious	Coriandrol, volatile oil, malic acid, mucilage, tannin, barboneol, d-pinene
2	<i>Piper longum</i>	Carminative, Stimulant, Diuretic, Alterative	Piperine, volatile oil, starch, resin, fatty oil and gum

3	<i>Piper longum</i>	Stomachic, expectorant	Piperine, volatile oil, starch, resin, fatty oil and gum
4	<i>Nigella sativa</i>	Carminative, stomachic, diuretic, emollient	Volatile oil, essential oil, fixed oil, Arabic acid, melanthin, carvone, terpepene, nigelline, connigelline
5	<i>Mesua ferrea</i>	Astringent, carminative	Essential oil, mesuol
6	<i>Abies webbiana</i>	Carminative, stomachic, expectorant, tonic	Volatile oil, taxol, tannin, ephedrine
7	<i>Cinnamomum verum</i>	Carminative, stimulant	Sapponins, flavonoids, tannin, phenolic acid
8	<i>Cinnamomum tamala</i>	Carminative, stomachic, stimulant, diaphoretic	Tannins, alkaloids, flavonoid, terpenoids
9	<i>Garcinia cambogia</i>	Carminative, digestive	Hydroxycitric acid, polyphenols, kaemperol
10	<i>Elettaria cardamomum</i>	Carminative, stimulant, stomachic	Volatile oil, fixed oil, cineole, barneol, terpinyl acetate, barneol, starch
11	<i>Cuminum cyminum</i>	Carminative, stomachic, astringent, aromatic	Fatty oil, cumin, cuminol, thymine, cymene, resin, mucilage
12	<i>Piper nigrum</i>	Carminative, stimulant, acrid	Piperine, piperidine, volatile oil, oleo resin
13	<i>Punica granatum</i>	stomachic, astringent	Gallo tannins, gallic acid, punicalins, punicalagins
14	<i>Zingerber officinale</i>	Stomachic, carminative, stimulant	Zingerone, gingerol, volatile oil, gingeberol, gingerine
15	<i>Sodium chloride</i>	Stomachic, laxative, Antacid	Na, Mg, Cl, Ca
16	<i>Black salt</i>	Antacid, Carminative, stomachic, laxative, alterative, tonic	Na
17	<i>Asphalte</i>	Antacid	Na, Cl
18	<i>Sodiumchloride impura</i>	Carminative, antacid, stimulant, stomachic, digestive, refrigerant, purgative	Na, Mg, Ca

Fig.3. Total number of ingredients and its taste

Fig.4. Total number of ingredients and potency

Fig.5. Total number of ingredients and its vipakam

4. Conclusion

This literature review provides useful documented evidence related to its ingredients for ajeeranam in the indigenous medicine.

5. Suggestions

There is need further laboratory study and toxicity study about this drug in future.

Authors' contributions

This work was carried out in collaboration between both authors. Author JK and YD designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Author NRM and NN manage the literature searches and analysis of the study. Both authors read and approved the final manuscript.

Declarations

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Competing Interests Statement

The authors declare no competing financial, professional and personal interests.

Consent for publication

Authors declare that they consented for the publication of this research work.

Ethical Approval

Based on Institutional guidelines.

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