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A PHYTO-PHARMACEUTICAL COMPARATIVE STUDY OF KANCHANARA GUGGULU & PATHADI KWATH AND ITS EFFICACY IN PCOD - A LITERARY REVIEW

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ABSTRACT

In the present era, Polycystic ovarian syndrome (PCOS) is a documented as one of the most common hormonal endocrine disorders affecting 5-10 % of females due to life style and stress. It is characterized by hyper androgonism, polycystic ovaries, and chronic anovulation along with insulin resistance, abdominal obesity, hypertension, irregular menses, abnormal uterine bleeding and difficulty getting pregnancy. Kanchanara guggulu and pathadi kwath are effective ayurvedic remedies for treating hypothyroidism, Hormonal imbalanace, PCOS and joint pains. It is especially useful in maintaining the secretion of thyroid hormones. It is highly recommended formulation for treating an enlarged lymph node. This review explains the pharmacological potential of kanchanara guggulu and pathadi kwath along with the other pharmacological activities of the part used of each ingredient in the formulations. This review helps the researcher to explore more about these important Ayurvedic formulation.

KEYWORDS: *PCOS, Kanchnaar guggulu, Pathadi kwath, Pharmacological activity.*

INTRODUCTION

Kanchanara guggulu is a formulation containing *Guggulu* as its major ingredient. It is explained in the 7th chapter of *Sharangadhara Samhita Madhyama khandam* i.e., *Gutika Kalpana, Yogaratnakar, Bhavaprakasha Gandamala Chikitsa* and *Bhaishajya Ratnavali Galagandadi Roga Chikitsa Prakaranam*. Monograph of *Kanchanara guggulu gulika* (pills) as per *Sharangadhara Samhita* reference is present in API and AFI. The ingredients of *Kanchanara guggulu* are *Kanchanara, Varuna, Triphala (Haritaki, Vibhitaki, Amalaki), Trikatu (Pippali, Marica, Sunti), Trijataka (Twak, Ela, Patra)* and *Guggulu*. *Pathadi choorna* was described by Acharya Susruta in the context of *Granthi artavadushti* as a kwatha formulation. Polycystic Ovarian Syndrome (PCOS) can be compared with *granthi artavadushti* due to the *grathila* (polycystic) appearance of ovaries along with abnormal uterine bleeding in the form of Oligomenorrhoea or a phase of amenorrhoea followed by severe bleeding with clots

Profile of individual ingredients of kanchanaraguggulu vati[1]

1. Bauhinia variegata

Botanical name: *Bauhinia variegata*

Family : Ceasalpiniaceae

Parts used : Stem bark

Distribution : distributed throughout India, except Jammu Kashmir, Himachal Pradesh, Sikkim

Vernacular names

Tamil : Sihappumandarai

English : Mountain Ebony

Hindi : Kachanaar, orhid tree

Telugu : Bodanta

Malayalam : Chovanna

Pharmacological activity

- The bark, flowers and root are used as a cataplasm.
- Root decoction used in dyspepsia.
- Flowers used as laxative.
- And bark used as tonic and anthelmintic.

2. Terminalia chebula

Botanical name: *Terminalia chebula*

Family : Combretaceae

Parts used : Fruit

Distribution : Distributed throughout Southeast Asia- India, Srilanka, Bhutan, Nepal, Malaysia

Vernacular name

Tamil : Kadukaay

English : Black or chebulicmerobalan

Hindi : Haritaki

Telugu : Nallakaraka

Malayalam: Katukka

Pharmacological activity

- ❖ Astringent.
- ❖ Bleeding condition.
- ❖ Anti-bacterial.
- ❖ Anti-ulcer.
- ❖ Anthelmintic.
- ❖ Laxative.
- ❖ Stomachic and tonic.

3. Terminalia bellerica

Botanical name: *Terminalia bellerica*

Family : Combretaceae

Parts used : Fruit

Distribution : Distributed throughout Indian Forests and plains.

Vernacular name

Tamil : Tanri

English : Beach almond

Hindi : Bahuvirya

Telugu : Tandra

Malayalam: Thaanni

Pharmacological activity

- The dried fruits used as astringent, tonic and laxative.
- Also used in piles, diarrhea.
- Bark of the plant is used as to increase diuresis.

4. Emblica officinalis

Botanical name: *Emblica officinalis*

Family : Phyllanthaceae

Parts used : Fruit

Distribution : Found throughout India, the sea coast districts and on hill Slopes upto 200 meters also cultivated in plains.

Vernacular names

Tamil : Nelli

English : Amla, Indian gooseberry

Hindi : Aonla

Telugu : Usiri

Malayalam: Nelli

Pharamacological activity

- Fresh fruit is refrigerant, tonic, antiscorbutic, diuretic and laxative, blood purifier,diarrhea and jaundice.
- Syrup from the fruit is antibilous, diuretic and cooling; used in fever, vomiting, indigestion and habitual constipation.
- The root bark is used in aphthous stomatitis.
- The root is used in jaundice treatment, dyspepsia, and cough.
- The shoots are used in diarrhea, indigestion.

5. Zingiber officinale

Botanical name: *Zingiber officinale*

Family : Zingiberaceae

Parts used : Rhizome

Distribution : Distributed in China, India, Indonesia, Nepal, Nigeria and Thailand

Vernacular name

Tamil : Inji

English : Ginger

Hindi : Adrak

Telugu : Allam

Malayalam: Inchi

Pharmacological activity

- The rhizome is used as a stimulant, carminative.
- It is used in dyspepsia, vomiting, rheumatism, dysentery, cholera, piles.
- Also promotes menses in amenorrhoea.

6. Piper longum

Botanical name: *Piper longum*

Family : Piperaceae

Parts used : Dried fruit

Distribution : Distributed in shady floors and village grove in India Found in Kerala, globally found in Indonesia, Madagascar.

Vernacular name

Tamil : Tippili

English: Long pepper

Hindi : Pippal

Pharmacological activity

- Thermogenic, tonic.
- Diuretic, purgative.
- Expectorant, anorexia.
- Splenomegaly, aphrodisiac.

7. Piper nigrum

Botanical name: *Piper nigrum*

Family : Piperaceae

Parts used : Dried fruit

Distribution : Native for black pepper is Malabar region of Southwestern India.Now it is

grown in various tropicalregions, including India, Indonesia and Brazil.

Vernacular names

Tamil : Karumilagu

English : Black pepper

Hindi : Mirch

Telugu : Miryalatige

Malayalam: Karumulaku

Pharmacological activity

- Dried unripe fruits are stimulant, carminative and stomachic.
- Also used as diuretic, and anti-diabetic agents.

8. Crataeva nurvala

Botanical name: Crataeva nurvala

Family : Capparidaceae

Parts used : Stem bark

Distribution : It is widespread from India to Southeast Asia, South of China.

Vernacular name

Tamil : Maralingam

English: Three hand capu

Hindi : Baruna

Telugu: Bilvarani

Pharmacological activity

- Anticancer activity.
- Anti-urolithiasis.
- Migraine.
- Intestinal worms.

9. Elettaria cardamomum

Botanical name: *Elettaria cardamomum*

Family : Zingiberaceae

Parts used : Dried fruit

Distribution : Distributed in evergreen monsoon forests of western Ghats in Southern

India and western highland in Srilanka.

Vernacular names

Tamil : Elam, Elakkaai

English : Cardamom

Hindi : Chhoti Elachi

Telugu : Yelakayalu

Malayalam: Elakkaya, Citalam

Pharmacological activity

- Eases stomach pain.
- Carminative, aromatic.
- Anti-spasmodic.

10. Cinnamomum zeylanicum

Botanical name: *Cinnamomum zeylanicum*

Family : Lauraceae

Parts used : Stem bark

Distribution : Native is Indian subcontinent, Nebal, Bhutan, Pakistan but most specifically in Sri Lanka. Also found in Brazil,Madagascar, Vietnam.

Vernacular names

Tamil : Channalavangam

English : Cinnamon

Hindi : Dalchini

Telugu : Dasini

Malayalam: Elavangam

Pharmacological activity

- Warming stimulant, carminative.
- Antispasmodic, anti-septic.
- Anti-viral.

11. Cinnamomum tamala

Botanical name: *Cinnamomum tamala*

Family : Lauraceae

Parts used : Leaf

Distribution : Native is India, Nepalese cinnamon is Popular for itsmedicinal properties.

Vernacular names

Tamil : Talishapattiri

English : Indian bay leaf

Hindi : Tejpatta

Telugu : Tasilapatri

Malayalam: Tamalapatra

Pharmacological activity

- The leaves are used in the treatment of colic and diarrhea.
- Hypoglycemic activity.
- Anti-fungal activity.

12. Commiphora weightii

Botanical name: Commiphora weightii

Family : Burseraceae

Parts used : Exudate

Distribution : Guggul is native to India, Pakistan and Arabia in India it is found in Rajastan, Gujarat, Madhya Pradesh and Karnataka.

Veranacular name

Tamil : Mahisaksiguggalu

English : Indian badellium

Hindi : Guggulu

Telugu : Guggipannu

Malayalam: Gulgulu

Pharmacological activity

- Anti-bacterial.
- Paralysis.
- Rheumatoid arthritis.
- Gout.

Pharmacotherapeutical study

Kanchanara is considred as drug of choice for granthivikara and galaganda. It has Ruksha, Laghu Gunas, Kashaya rasa, Katu vipaka but its prabhava is gandamalanashana. It has great ability to dry up the vitiated Kapha and Medha because of its potent astringent property. Its grahi property helps to remove excess fluid from swollen tissue. Ethanolic and aqueous extracts of the stem bark and root of B.variegata effectively decreases plasma cholesterol, triglyceride, LDL, and VLDL and increases plasma HDL levels. It has a balancing activity on thyroid production, increasing any deficientproduction and decresing any excess. It is a specific herb for swollen lymph nodes, cervical adenitis. Bauhinia variegata has chemo protective antitumor activity, anti-inflammatory, antidiabetic and antioxidant properties. Active constituent of bauhinia variegate (bark) promotes conversion of tyrosine to thyroxin by potentiating the enzyme tyrosinase. Lupeol&β-sitosterol present in kanchanara exhibits anti-inflammatory, anti-oxidant, anti-tumor, chemo protective and cholesterol lowering effects.

Triphala is having Deepana (stimulation of digestive fire), Vatanulomaka property (proper Regulation of excretory system), Pachana (stimulation of digestive fire), Rasayana (rejuvenation), Sothahra (reduced oedema), and Srotoshodhaka (purification of a channel). The chemical compound gallic acid present in terminalia chebula extract, which is an active blocker of T-lymphocyte mediated cytotoxicity which in turn blocks the major immunocascade resulting in enhanced cellular functionality.

- The Ushna guna and Katu rasa of Trikatu stimulates Pitta, it has predominance of Agni, Vayu and Akasha mahabhuta which is responsible for Kapha shamana. It has Deepaniya and Pachaniya property and it promotes Agni. Besides the Tikshna property of Trikatu ensures tissue penetration thereby showing its action in Manadagni at the Dhatwagni and Bhutagni level. In hypothyroidism where there is hypometabolism, Trikatu churna shows promising results by reversing the hypometabolism in the tissues and thereby, by feedback mechanism normalizing the TSH.
- Pippali increases the absorption of selenium, a trace element required for deiodinase reaction of the thyroid hormone necessary for bioactivity of the hormone.
- The active principle of Trikatu is piperine, piperine (1-piperoyl piperidine), an amide alkaloid, is mainly responsible for enhancing the bioavailability of concurrently administered drugs.
- The active constituents present in Trikatu exhibits anti- inflammatory and stimulant to

pituitary axis promotes thyroid tissue regeneration and bioregulation of thyroid activity.

- Crataeva nurvala is another active ingredient also synergizes with its anti- inflammatory activity and regulate calcium metabolism and ensure ionic concentrations in body fluids. The beta-sitosterol & catechin present in the varuna shows antihypercholesterolemic & anti-oxidant activity, anti-bacterial, anti-proliferative and chemoprotective effect.
- Guggulu contains oleo-resins which have a potent anti-inflammatory effect. It is therapeutically used to treat Gulma (abdominal lump), Ganadamala (cervical lymphadenitis), Apachi (chronic lymphadenopathy), Granthi (cyst) etc., The administration of Guggulu with other herbs has the effect of purging Ama (undigested food) from the body. Agnivardhaka property of guggulu aids in digestion, thereby digests the Amarasa (undigested food), reduces the excessive production of Kapha and removes the obstructive Srotas (body channels).
- Guggulu contains Z & E guggulusterones which are responsible for the hypolipidemic activity of the guggulu, it may decrease hepatic steroid production which ultimately increases the catabolism of plasma LDL cholesterol. Z-guggulusterone was shown to be responsible for thyroid stimulatory action of guggulu, administration of isolated compound of the same leads to significant increase in all thyroid function parameters namely, uptake of iodine by thyroid,enzymes involved in the synthesis of thyroid hormones, and tissue oxygen uptake, thus suggesting thyroid stimulatory action.
- The Mundi contains sterol glycosides, sesquiterpene lactones, sphaerene as chemical constituents anti- inflammatory and stimulant to thyroid pituitary axis promotes thyroid tissue regeneration and bioregulation of thyroid activity.
- The catechin, rutin & kaempferol chemical constituents present in Khadira Sara exhibits antioxidant & immunomodulatory properties including effects on T-lymphocytes and killer cells.
- Catechin affects the molecular mechanisms involved in angiogenesis, extracellular matrix degradation, the regulation of cell death and multidrug resistance in thyroid and other related disorders.
- While discussing over the pharmacodynamic properties of kanchanara guugulu, we found that the Triphala having Kaphavatahara property with Rasayana. Trikatu helps to promote Agni and Aamapachan. Trijataka helps as Agni deepana and Kaphavatahara functions. Kanchanara itself has the function of Shothagna and Galaganda Gandamala Nashaka property where VarunaTwak and Guggulu enhances its action.

Pharmacological studies

Bauhinia variagata

Amita Mishra et al. (2013), assessed the antibacterial, antioxidant, and anticancer activity of various leaf extracts of *B. variagata.* Acetone fraction exhibited appreciable reducing power at all the test concentration. Benzene, ethyl acetate, and water extracts were similar with minor differences. Water fraction was found to be the most active exhibiting percentage growth inhibition against prostrate, lungs (hop-62), ovary, Breast (mcf-7), cell lines respectively. Ethyl acetate extract showed marked cytotoxicity against mcf-7(84%), thp-(93%) cell lines. In general, breast (mcf-7) leukemia (thp-1) cell lines exhibited greater sensitivity to *Bauhinia variegate* extracts.[2]

Sonam Pandey et al. (2012), evaluated the antioxidant and free radical scavenging activity of *Bauhinia variagata* by *in-vitro* methods. Among the various extracts methanol extracts showed good antioxidant activity. IC_{50} value of *B. variagata* leaf, stem bark and floral buds are 17.9, 19.5 and 17.2 µg/ml respectively.[3]

M. M. Ghiaisas, et al. (2008) evaluated the immuno modulatory activity of ethanolic extracts of the stem bark of *B .variegata* using swice albino mice. On oral administration, extract showed a significant increase in the primary and secondary humoral antibody responses, by increasing the hemagglutinating antibody titre at doses of 250 and 500 mg/kg there was a significant increase in the phagocytic index and percentage neutrophil adhesion at doses of 250 and 500 mg/kg. This study reveals that the *B. variagata* holds a promise as an immune modulatory agent, which acts by stimulating both the specific and non-specific arms of immunity.[4]

H. Bodakhe, et al, (2007), assessed the hepato protective properties of bark extract of *Bauhinia variagata* in CCl4 induced cirrhosis in male Sprague dawly rats. Stem bark extracts at 200 mg/kg dose showed better anti-hepatotoxic activity. Hence, *B.variegata* appears to be a promising hepatoprotective agent.[5]

SM. Bairagi et al. (2012), evaluated the anti-inflammatory activity of methanol and aqueous fraction of the bark of *B.variegata* by dextran induced edema method in albino rats. Anti-inflammatory activity determined by carrageenan induced paw edema and dextran induced paw edema. The anti-inflammatory activity determined by carrageenan induced paw edema were not too significantly different (P>0.05) from the control. Significant activity against

dextran induced paw edema in rats was exhibited by both methanol extract (P<0.01) and aqueous extract (P<0.05) when administered orally at 200 mg/kg.[6]

Pathadi kwatha

As per samprapti of PCOD postulated, it is considerable that in this condition mainly *kapha* and *vata* is involved. Both of them are responsible for the *srotodushti* that is *srotorodha* here. In *ayurvedic* classics, as we know, there is no any single condition, which can be compared to PCOD. As PCOD is represented by menstrual irregularities mainly, which are also included in *ashtoartava dushti*, the treatment given for *artavadushti* may be taken for the management of PCOD. So, for the present study, *aushadha yoga* mentioned for *Granthibhuta Artavadushti* which is caused by *vata* and *kapha*, has taken.[1] It includes *kwatha* of *Patha, Trikatu (Shunthi, Maricha and Pippali)* and *Kutaja*. All these drugs are having mainly *katu-tikta rasa*, *ruksha, ushna, tikshna gunaas* and *vatakaphagna doshaghnata*.

Detail description of the pathadi kwatha

***1. Patha*[2]**

Botanical Name: *Cissampelos pareira Linn.*

Family : Menispermaceae

Paryaya : Ambashtha, Shreyasi, Papchelica, Vartikta, Viddhakarni

Swarupa : A Climber

Habitat : All over India

Part Used : Root, Stem

Varnacular names

English : Velvet leaf

Hindi : Padha

Gujarati : Kalipatha, Karandhiyu

Marathi **:** Pahadhvel, Velpadli, Padaval

Rasa panchaka

Rasa : Katu-tikta

Guna : Guru, ushna, tikshna

Virya : Ushna

Vipaka : Katu

Doshaghnata: Kaphavata shamaka

Chemical constituents

Pelosine and Bebeerine (5 % in stem), seponine, alkaloid named Cyclein.

Karma* and *Prayoga

It is antibacterial, anti-inflammatory, antihistamine, antioxidant, antispasmodic, diuretic, hypotensive, muscle relaxant, uterine relaxant, antiseptic, aphrodisiac, analgesic, antihemorrhagic, cardiotonic, diaphoretic, expectorant, febrifuge, hepatoprotective, stimulant, and tonic. It is known as Midwife's herb as mainly used in women aliments. It is used for menstrual problems, hormonal imbalance, ease childbirth, postpartum pain, prevent threatened abortion and control uterine hemorrhages, hormonal acne and premenstrual syndrome. It is used for heart problems, kidney stones, kidney infections and pains, asthma, arthritis, muscle cramps and stomach pains. It is also used to kill bacteria, prevents convulsions, ulcers, indigestion, skin irritations, cough, fever, intestinal worms, and wounds and in snake bite. It is used against poisonous snake bites and is very effective in skin related ailments.

***2. Shunthi*[3]**

Botanical Name: *Zingibar officinalis Roxb.*

Family : Zingiberaceae

Paryaya *:* Nagar, Vishvabhaisaj, Mahaaushadh, Shringvera

Swarupa : It is a kshup having 1'-2' height.

Habitat : All over India.

Part Used : Rhizome

Vernaculars name

English : Ginger root, Ginger

Hindi : Sonth, Adarakha

Guajarati : Sunth, Suntha, Aadu

Bengali : Suntha, Sunthi

Rasa panchaka

Rasa : Katu

Guna : Laghu, Snigdha

Virya : Ushna

Vipaka: Madhura (Shunthi), Katu (Ardrak)

Doshaghnata : Kaphavata shamaka

Chemical constituents

Ginger consists of starch (40-60%), Volatile oil (1-4%), Fat (10%), Protein (10%), fiber (5%), inorganic material (6%), residual moisture (10%), an acrid resinous matter (5-8%); Aroma of the drug is due to volatile oil contains a mixture of over 50 Constituents, Consisting of monoterperes (Phellandrene (+), camphene, Cineole, citral and Borneol), Sesquiterpene hydrocarbons (Zingiberene, bisabolene, (E,E) - curcumene) and the sesquiterpene alcohol zingiberol. The pungency of ginger is due to gingerol, oil consisting of homologous phenols. The principal one of these is gingerol.

Karma* and *Prayoga

The rhizome is sweet, pungent, appetizer, laxative, stomachic, aphrodisiac, carminative; useful in disease of the heart and the throat dyspepsia, inflammations, *Kapha* and *Vata*, bronchitis, asthma, vomiting, pains; elephantiasis, piles, eructation, abdominal pain. Ginger is known digestive stimulant. Ciplastin present in ginger acts directly on the gastro intestinal tract. It is thought that ginger may act by increasing gastro intestinal motility. The ethanolic extract of ginger rhizomes possess potent anti tumor activity. It is also known to have antimicrobial anti fungal activity. The rare side effects are increased bleeding tendency, rash, itching, and swelling of the tongue. It is to be taken with caution in pregnancy, lactation, abnormal bleeding complaints and allergic persons to ginger.[4]

***3. Maricha*[5]**

Botanical Name: *Piper nigrum* Lin. Family : *Piperaceae*

Paryaya *:* Vellaja, Krashana, Ushna, Dhanvantari, Kola

Swarupa : A Climber

Habitat : Konkan southwards

Part Used : Fruit

Vernaculars name

English : Black Pepper

Hindi : Kalimirch

Guajarati: Kalimari

Bengali : Golmorich, Kalamorich, Morich

Kannada : Karimonaru, Menaru

Punjabi : Galmirich, Kalimirch

Tamil : Milagu

Rasa panchaka

Rasa : *Katu, Tikta*

Guna : *Laghu, Ruksha, Ushna*

Virya : *Ushna*

Vipaka : *Katu*

*Doshagnataa***:** *Kaphavatajit, Pittakara*

Chemical constituents

Maricha contains starch (about 30%) and non-volatile, ether soluble substance (about 6%), alkaloids chavicine, piperine (5-9%), piperidine, essential oil (1-2.5%), piperetine. Maricha fruit contains chemical constituents like pipercide characterized as isobutyl amide of 11 - (3, 4 - methylenedioxyphenyl) - 2E, 4E, 10E undecatrienoic acid, N-trans-feruloyltramine and piperonal, piperoleine A & B and (2E, 4E) - N - isobutyl - 2, 4 - decadienamide etc. The essential oil of Piper nigrum shows presence of thyene, dl-limonene, terpinene, dihydracarveol, pinine, sabinene, pinene, myrcene, p-cymene, caryophyllene etc.

Karma* and *Prayoga

The fruit is pungent, bitter, hot, anthlememtic; useful in *Kapha* & *Vata*, asthma, pains, diseases of the throat, piles, urinary discharge eczema, night blindness, increases biliousness, brings on sleep and epileptic fits. Pepper is much employed as an aromatic stimulant in cholera, weakness following fevers, vertigo, coma, as a stomachic in dyspepsia & flatulence, as an antiperidoic in malarial fever, as an alterative in paraplegia arthritic diseases. Externally it is valued for its rubefacient properties and as a local application for relaxed sore throat, piles and some skin diseases. Buttermilk mixed with Marich powder & molasses used internally, cures rhinitis or coryza. Extract of P.nigrum is reported to inhibit E.coli. It is known to increase the bioavailability of many of the modern medicines.

***4. Pippali*[6]**

Botanical Name: *Piper longum Linn.*

Family : Piperaceae

Paryaya *:* Magadhi, Krushna, Chapala, Upkulya, Vaidehi, Kana

Swarupa : An aromatic Climber

Habitat : Hotter parts of India (Assam, Western Ghats, Bengal)

Part Used : Fruit, Root

Vernacular names

English : Indian long pepper, Long pepper.

Hindi : Pipli, Pipal, Pipulmul.

Gujarati : Pipli, Piper

Bengali : Piplamul, Pipli, Piplamor, Pipul.

Rasa panchaka

Rasa : Katu

Guna : Laghu, Snigdha, Tikshna

Virya : Anushna sheeta

Vipaka : Madhura

Doshaghnata : Kapha vata shamaka

Chemical constituents

Two alkaloids piperlongumine and piperlonguminine, n-hexadecane, n- heptadecane, n-octadecane, n-nonadecane, n-eicosane, n-heneicosane, □-thujene, terpinolene, zingiberene, p-cymene, p-methoxy acetophenone, traces of dihydrocarveol, phenylethyl alcohol and two sesquiterpenes (essential oil from the dried fruit); piperine, piplartine, triacontane, dihydro-stigmasterol, an unidentified steroid, reducing sugars, glycosides, sesamin and methyl-3,4,5-trimethoxycinnamate (roots); major alkaloid piperine and sesamin (stem and fruits); sesquiterpene hydrocarbon, caryophyllene, a sesquiterpene alcohol, carbonyl compound (essential oil); N- isobutyldeca- trans-2-trans-4-dienamide, piperine, piplartine and a lignan d-sesamin, two piperidine alkaloids-pipernonaline and piperundecalidine (fruit).

Karma* and *Prayoga

The root is bitter, thermogenic, tonic, diuretic, purgative, expectorant, anthelmintic, stomachic, digestive and emmenagogue. Dried spikes are acrid, vermifuge, stomachic, aphrodisiac, carminative, expectorant, febrifuge, and tonic, laxative, digestive, emollient and antiseptic. The fruits are used after child birth to check postpartum hemorrhage, as a cholagogue in bile duct and gall bladder obstruction.[9] Piper longum doesn't show any oestrogenic or progestenol activity suggesting that the plant preparation do not exert its anti infertility activity by interfering with the activity of ovarian hormones on the uterus. It does

not have any androgenic activity. Piperine functions as a bioavailability enhancer by improving gastro intestinal absorption and inducing thermogenisis (heat energy associated with the digestion of the food).

5. Kutaja[7]

Botanical Name: *Holarrhena antidysenterica Roxb.ex. Fleming*

Family : Apocynaceae

Paryaya *:* Kalinga, Shakra, Vatsaka, Girimallika, Dirghpatraka

Swarupa : Small to medium sized tree

Habitat : All over India.

Part Used : Bark, seed

Vernacular names

English : Ester tree, Conessi bark

Gujarati : Kuda, Kadachhal, Kudo

Hindi : Kurchi, Kuraiya

Bengali : Kurchi

Rasa panchaka:

Rasa : Tikta, Kashaya

Guna : Laghu, ruksha

Virya : Shita

Vipaka : Katu

Doshaghnata: Kapha pitta shamaka

Chemical constituents

Bark contains alkaloids - kurchicine, conessine.[8] Crude protein content of seed contains aspartic acid (18.44%) and argine as major amino acids. An alkaloid by name hollarricine – isolated from seeds. Two alkaloids – holacine and hocinine isolated from bark, structure of holocine is determined Concuressine (MP 86°C), 3- epiphetroconessine (MP 146°C), kurcholessine (MP 219°C) isolated after methylation of alkaloid mixture. O-free alkaloid (conessine, conimine, conkurchine group of alkaloids (including conissidine) and O-containing alkaloids (holarrhemine, holafrine, holarrhetin) are present in bark where as leaves contain O-containing alkaloids (kurchiphyllamine and kurchiphylline) also contains tannins.

Karma* and *Prayoga

It is *deepana, sangrahi, trishahara, shoshana, krimihara arshoghna, jwaraghna*. The bark & seed are bitter, constipating, astringent, and powerful anti dysentery, acrid, refrigerant, anti periodic, aphrodisiac, carminative, digestive, expectorant, febrifuge, and tonic. Both are useful in amoebic dysentery, diarrhea, asthma, broncho-pneumonia, hepatic & gastric disorders, flatulence, hepato- splenomegaly, internal hemorrhages, bleeding piles, rheumatism, fever, malaria, worm infestations, urological disorders, dropsy, & skin diseases. The seeds are carminative, astringent, lithotriptic & aphrodisiac. The leaves are useful in chronic bronchitis, dysentery & ulcers. It is useful as Anti-tubercular, hypotensive, anti protozoal, hypoglycemic, anti-spasmodic, anti-fungal, amboecidal, antidirrhoeal, anticancer, anti spirochetal.[9]

CONCLUSION

This review has presented a collective knowledge on therapeutic, pharmacological and medicinal applications of Kanchanara guggulu as well as Pathadi Kwath and their constituent drugs. By reviewing the properties of each ingredients of kanchanara guggulu and pathadi kwatha, we can conclude that both are an effective poly herbal formulation for treating hypothyroidism, hormonal imbalance PCOS etc., Hence their uses and pharmacological effects should be documented well and more studies on its pharmacological actions must be conducted.

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