



Review Article

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A REVIEW ON KUMARABHARANA PRASHA: A NOVEL AYURVEDIC ELECTUARY

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ABSTRACT

The process of licking and gulping it is called as Lehana. The substance subjected for Lehana is called Lehya, this concept is also adopted in drug delivery for neonates and infants where the proposed drug is mixed with any of honey, sugar, ghee, etc made into lickables and fed to child. The purpose and object of Lehana karma look to prevent the diseases by establishing due immunity and to promote the physical and psychic strength providing nutrition. The broad spectrum actions of Kumarabharana Prasha may be attributed to its constituent's namely Bhasmas (calx) of Swarna (Gold), Rajata (Silver), Pravala (coral) and Choorna of Yastimadhu (*Glycyrrhiza glabra* Linn.), Amalaki (*Emblca officinalis* Gaertn.), Ashwagandha (*Withania somnifera* (L.) Dunal), Shunti (*Zingiber officinale* Roscoe), Pippali (*Piper longum* Linn.), Harithaki (*Terminalia chebula* Retz.), Vacha (*Acorus calamus* Linn.) and all these drugs given one Bhavana with Swarasa (extract juice) of Guduchi (*Tinospora cordifolia* Willd.), Brahmi (*Bacopa monnieri* Linn.) and Tulsi (*Ocimum tenuiflorum* Linn.), with honey and ghee. This can be readily administered to child in requisite dose. This article highlights the ingredients, method of preparation, and probable mechanism of action of Kumarabharana Prasha.

Keywords: Ayurveda, Kumarabharana prasha, electuary, lehana, growth and development, children

INTRODUCTION

Lehana is one of the unique concept of Kaumarabhritya (Ayurveda Pediatrics)¹. The word meaning of Lehana is licking or lickables and its consistency is semi-solid or sticky form². Lehana not only promotes physical and mental health, but also acts as a supplementary food. It helps in strengthening the body's immune mechanism^{3,5}. Acharya Kashyapa had explained in detail about Lehana¹. According to Dalhana, Lehana should be continued for one to two years. The process of licking and gulping it is called as Lehana. The substance subjected for Lehana is called Lehya, this concept is also adopted in drug delivery for neonates and infants where the proposed drug is mixed with any of honey, sugar, ghee, etc made into lickables and fed to child. Hence the Lehyas remain unctuous, sticky semisolids, a variety of medicinal preparation. Swarnaprashana is one such medicine, where Swarna and other medicines are mixed with honey and administered to children with the aim of desire benefits¹. In Kashyapa Samhita a separate chapter called Lehadyaya is devoted to explaining various forms of lehana. The purpose and object of Lehana karma look to prevent the diseases by establishing due immunity and to promote the physical and psychic strength providing nutrition.

Ayurveda is a traditional system of medicine which is having many practices to promote and preserve health⁴. There are certain folklore practices that are promoting for healthy living of the children. The ingredients of Kumarabharana prasha has been compiled from one such folklore practice called Uramarunnu/Suttumadhu⁶. The drug Kumarabharana prasha is being practiced

in new born for enhancing growth and development¹⁹ in Sri Dharmasthala Manjunatheshwara College of Ayurveda and Hospital, Hassan since 2001. Kumarabharana Prasha is one such preparation which contains Medhya drugs that provides mental growth; Swarna and Madhu gives immunity and Rasayana effect. Kumarabharana Prasha is a compound drug comprising of Bhasmas (calx) of Swarna (Gold)⁷, Rajata (Silver)⁸, Pravala (coral)⁹ and Choorna of Yastimadhu (*Glycyrrhiza glabra* Linn.)¹⁰, Amalaki (*Emblca officinalis* Linn.)¹¹, Ashwagandha (*Withania somnifera* Linn.)¹², Shunti (*Zingiber officinale* Roxb.)¹³, Pippali (*Piper longum* Linn.)¹⁴, Harithaki (*Terminalia chebula* Retz.)¹⁵, Vacha (*Acorus calamus* Linn.)¹⁶ and all these drugs given one Bhavana with Swarasa (extract juice) of Guduchi (*Tinospora cordifolia* Willd.)¹⁷⁻¹⁸, Brahmi (*Bacopa monnieri* Linn.)¹¹ and Tulsi (*Ocimum tenuiflorum* Linn.)⁷ separately, later mixed with honey and ghee. In this endeavor, author would highlight the therapeutic efficacy of the various constituents of this compound preparation. Coming to the detailing of various ingredients;

Swarna (Gold) bhasma

Swarna bhasma²³ is Hrudya (Heart tonic), Vrishya (aphrodisiac), improves intellectual power, Rasayana (rejuvenator) and alleviates increased Doshas²⁰. It increases Valya (potentiality), Kantikara (complexion), Ayushkara (longevity), Medha Smriti Mati Pradam (intellect, memory and attentiveness)²¹. It has been utilized as a therapeutic agent in the traditional Indian Ayurvedic medicine for Yakshma (tuberculosis), Unmada (schizophrenia), Jwara (fever), Shoka (grief), Pandu (anaemia), Shwasa

(dyspnoea), Kasa (cough), Krimi (worm infestation), Aruchi (anorexia), Chakshuroga (ophthalmic disorders), Visha (poisoning), bronchial asthma, rheumatoid arthritis, diabetes mellitus, and nervous system diseases²². Swarna bhasma²⁴ is usually given orally mixed with honey, milk or ghee. Pharmacological review of Swarna Bhasma reveals that it possesses immune modulator, free radical scavenging, analgesic, anti-stress, analgesic, Anti Cataleptic, Anti-anxiety, Anti-depressant and antioxidant activity.

Rajata (Silver) bhasma

Rajata Bhasma, a calcined preparation of silver, is astringent, sweet – sour in nature and taste and widely used in various herbo-mineral compounds²⁵. It is used as a single drug with different Anupanas (adjuvant) in several diseases²⁶. It comes under the group of metals having high therapeutic value²⁷. Rajata bhasma is an important metallic preparation used in the management of Prameha, Gridhrasi, Nadi sula Unmada etc. It has scraping quality, hence useful in cardio-vascular diseases, improves skin complexion, digestion power, body strength and immunity, intelligence, excellent rejuvenative, anti-aging medicine. It is effective in Cachexia, Irritable bowel syndrome, acidity, pitta disorders, memory loss, dizziness, excessive thirst, diabetes, depression, burning sensation, memory loss, dizziness, excessive thirst, Tissue wasting, Urinary disorders, Alcoholism, Poisoning, diabetes, Fever, Uterine disorder, Parkinson's disease, tremors and Epilepsy²⁸.

Pravala (Coral) bhasma

Pravala (Coral) belongs to phylum coelenterate and is the calcareous skeleton of the minute marine organism²⁹. It is a natural source of calcium and widely used in traditional system of Indian medicine³⁰. It is known as coral in English and is used in the form of bhasma in Ayurvedic system of medicine to cure various ailments since ancient times³¹. Due to enriched calcium content, it is used to treat variety of bone metabolic disorders such as calcium deficiency. It has been proved recently as natural source of rich calcium for bone mineralization experimental models³². It is proved to be effective in Shotha (inflammation), Hridkampa (weakness of heart), Rakta-pitta (bleeding disorder), Raja Yakshma (tuberculosis), *Timira*, *Yakshma*, *Kasa* cough, sweating, osteoporosis, dysureia and oligourea³³.

Ashwagandha (*Withania somnifera* (L.) Dunal)

*Withania somnifera*⁴²⁻⁴⁴ belongs to the Solanaceae family and is commonly known as “Indian Ginseng” or “Indian Winter cherry”³⁴. It wildly grows in all drier parts of Asia, Africa, Congo, South Africa, Egypt, Morocco, Jordan, Bangladesh, Sri-Lanka, Nepal, Pakistan and parts of subtropical India such as Madhya Pradesh, Uttar Pradesh, Punjab and northwest.³⁵ It is used as general tonic to increase energy, improve overall health and longevity, and prevent disease and as an ingredient in many formulations prescribed for a variety of musculoskeletal conditions, in emaciation of children (when given with milk, it is the best tonic for children), in vitiated conditions of vata, leukoderma, constipation, insomnia etc³⁶. The main constituents of ashwagandha are alkaloids and steroidal lactones. Alkaloids consist of withanine and other substituents such as somniferine, somnine, somniferinine, withananine, pseudo-withanine, tropine, pseudo-tropine, 3-a-gloyloxytropine, choline, cuscohygrine, isopelletierine and anaferine³⁷. The steroidal lactones include ergostane type steroidallactones, withaferin A, withanolides A-Y, withasomniferin-A, withasomnidienone, withasomniferols A-C, withanone etc³⁸. The root extract contains steroidal lactones with ergostane, which include withanone, withaferin, withanolides,

withanolide C, sitoindosides and about 0.2% alkaloids³⁹. It has reported to possess anti-inflammatory, anticancer, antimalarial, antimicrobial, antidepressant, neuroprotective, free radical scavenging, immunomodulatory, spermatogenic, cardioprotective, hypocholesteremic, adaptogenic and antioxidant properties.^{40,41,45}

Amalaki (*Emblica officinalis* Gaertn.)

Emblica officinalis, commonly known as Indian goose berry is widely distributed in tropical and subtropical areas and has therapeutic potential against deleterious diseases^{46,55}. It is found throughout India, tropical and sub-tropical India, Sri Lanka, South East Asia, Uzbekistan, Pakistan, China and Malaysia⁴⁷. It is a potential crop which grows in the marginal soils and various kinds degraded lands such as salt-affected soils, salines and dry and semi-dry regions⁴⁸. Amla is highly nutritious and is one of the richest sources of vitamin-C, amino acids and minerals⁴⁹. It has been reported that fruits of *E. officinalis* contain higher amount of most minerals, protein and amino acids like glutamic acid, proline, aspartic acid, alanine, cystine and lysine⁵⁰. It contains chemical constituents like tannins, alkaloids and phenols⁵¹. It is considered as rasayana (rejuvenator)⁵² and used in delaying the degenerative and senescence related processes⁵³. Amalaki is reported to possess adaptogenic, analgesic, anti-atherogenic, gastroprotective, anti-inflammatory, nephroprotective, anti-tussive, neuroprotective, anticancer, chemopreventive, cardioprotective, immunomodulatory, free radical scavenging and antioxidant activities⁵⁴.

Shunthi (*Zingiber officinale* Roscoe)

Ginger (*Zingiber officinale* Roscoe), belongs to family Zingiberaceae is one of the most important plant with various nutritional and ethnomedical values⁵⁶. It is widely used around the world in foods as a spice and flavoring agent⁵⁷. It is native to tropical Australia, Asia, Brazil, China, India, West Africa, Jamaica and United States⁵⁸. The rhizome has a long history of use in Ayurvedic medicine and are rich source of carbohydrates, vitamins, minerals and iron⁵⁹. Phytochemical studies show that rhizome contains a wide variety of biologically active compounds which impart medicinal property.⁶⁰ It is reported to possess major phytochemical groups such as essential oils, phenolic compounds, flavonoids, carbohydrates, proteins, alkaloids, glycosides, saponins, steroids, terpenoids and tannin.⁶¹ The plant is reported to possess antioxidant, antiobesity, larvicidal, Antiangiogenic, antimicrobial, Renoprotective, anticancer, antidiabetic, anti-inflammatory, Anti-platelet aggregation, analgesic, immunomodulatory, Anti-atherosclerotic, Neuroprotective, antiemetic, hepatoprotective, antihelminthic, gastroprotective and cardiovascular activity.⁶²

Pippali (*Piper longum* L.)

*Piper longum*⁶⁶ commonly known as “long pepper”, belonging to the family Piperaceae is said to be a good Rasayana (rejuvenator), stimulates appetite and dispels gas from the intestines and used to treat various diseases especially for the treatment of respiratory disorders⁶³. It is widely distributed in evergreen forests of the world, throughout the Indian subcontinent, Sri Lanka, Middle Eastern countries and the Americas. In India, it is cultivated in Assam, Tamil Nadu, and Andhra Pradesh and on a large scale in limestone soil and in heavy rainfall areas where relative humidity is high⁶⁴. The fruit contains a large number of alkaloids and related compounds such as isobutyl amides, lignans, volatile oils and esters, the most abundant of which is piperine. The plant is reported to possess anticancer, hepatoprotective, antioxidant, anti-inflammatory, immunomodulatory, antimicrobial, analgesic,

antiplatelet, antihyperlipidemic, antidepressant, Antiamoebic, antiobesity, larvicidal, radioprotective, antifertility, antifungal and cardioprotective activity⁶⁵.

Harithaki (*Terminalia chebula* Retz.)

Terminalia chebula Retz⁷⁶⁻⁷⁷. commonly known as Harithaki belongs to the family Combretaceae⁶⁷. It consists of 250 species and widely distributed in tropical areas of the world⁶⁸. It is found all over Assam, Gujarat, Mumbai, Kerala and Tamil Nadu⁶⁹. This is one of the among the constituent of Triphala drug⁷⁰. It is also famous as “The King of Medicines”⁷¹. In Ayurveda, it is described as a kind of mother because “At times even mother becomes angry but Haritaki never causes a harm to a person who takes it”⁷². It contains several phytoconstituents like tannins, flavonoids, sterols, amino acids, fructose, resin, fixed oils etc⁷³. Further, tannin content of *T. chebula* largely depends on its geographic location⁷⁴. The chief components of tannin are chebulic acid, chebulinic acid, chebulagic acid, gallic acid, corilagin and ellagic acid⁷⁵. The plant is reported to possess anthelmintic, Antidiabetic, Antispermato-genic, antifungal, anticarcinogenic, antiviral, Molluscicidal, Antimutagenic, Antiamoebic, immunomodulatory, antioxidant, Anti-arthritis, wound healing, retino-protective, Cytoprotective, Antinociceptive, antiaging, Antiulcerogenic, anticarcinogenic and Radioprotective activities.⁶⁸

Vacha (*Acorus calamus* L.)

Acorus calamus Linn. Also referred to as sweet flag, sweet roots, Golomi, Uragandha and Vekhanda⁷⁸. It is an uncommon but widespread, semi-aquatic plant of aquatic habitats in temperate to sub temperate regions, especially in India, Kashmir, Manipur, Naga hills Koratagere taluk in Karnataka and Sri Lanka. It is known for its medicinal value, it is wild or cultivated throughout Himalayas at an altitude ascending up to 6000 feet⁷⁹. The rhizomes of *Acorus calamus* contain aromatic oil that has been used medicinally since ancient times and has been harvested commercially. Vacha is a main Medhya (nootropic) drug having property of improving the memory power, speech development and intellect. The chemical constituents such as β -Asarone (isoasarone), α - Asarone, elemicine, cis-isoelemicine, cis and trans isoeugenol and their methyl ethers, camphene, P-cymene, β -gurjunene, α - selinene, β -cadinene, camphor, terpinen-4-ol, α -terpineol and α -calacorene, acorone, acorenone, acoragermacrone, 2-deca- 4,7-dienol, shyobunones, isohyobunones, calamusenone, linalool and pre-isocalamendiol are present. The plant is reported to possess Anti-diabetic, antihypertensive, nootropic, antiepileptic, Neuromodulatory, Antidepressant, Anti-HIV, cytotoxic, Anticancer, Antioxidant, Immunosuppressive, Radioprotection and DNA Repair, Wound-healing, Coronary Vasodilator, Antispasmodic and Anti-diarrhoeal, Anti-inflammatory, Insulin Sensitizing, Synergistic Anthelmintic, Antihepatotoxic, Anti-ischemic Heart Disease, Antifungal, Antipyretic, Bronchodilatory, Antibacterial, analgesic, Licitidal, Mosquito Larvicidal and Antispasmodic activity⁸⁰.

Yastimadhu (*Glycyrrhiza glabra* Linn)

Glycyrrhiza glabra Linn.⁸³⁻⁸⁵ commonly known as Liquorice is used both as a medicine and also as a flavoring herb⁸¹. It is most commonly used herb in Western herbal medicine and found mainly in Mediterranean and certain areas of Asia⁸². Liquorice has been used in medicine for more than 4000 years. In traditional medicine, liquorice has been recommended as a prophylactic agent for gastric and duodenal ulcers. *Glycyrrhiza* roots are useful

for treating cough because of its demulcent and expectorant property, dyspepsia as an anti-inflammatory agent during allergic reactions and as a contraceptive, laxative, anti-asthmatic, emmenagogue and galactagogue. It is also effective against anemia, gout, sore throat, tonsillitis, flatulence, sexual debility, hyperdipsia, fever, skin diseases, swellings, acidity, leucorrhoea, bleeding, jaundice, hiccough, hoarseness, bronchitis, vitiated conditions of Vata dosha, gastralgia, diarrhea, fever, rheumatism, hemorrhagic diseases, epilepsy and paralysis. It is reported to have anti hemorrhoid, antiviral, anti-hyperglycemic, anti-malarial, anticancer, anti-ulcer, anti-diabetic, anti-oxidant, estrogenic activity, anti-thrombic, anti-malarial, anti-fungal, anti-bacterial, immuno stimulant, antithrombotic, anticonvulsant, anti-allergenic, expectorant, anti-hepato toxic, anti-fungal, anti-oxidant, Anti-ulcer, Immuno stimulatory, Anti-bacterial and anti-viral activity⁸².

Madhu (Honey)

Honey is a natural product composed primarily of fructose and glucose but also contains fructo-oligosaccharides and many amino acids, vitamins, minerals, flavonoids, phenolic compounds, trace elements, proteins and enzymes including glucose oxidase, invertase and catalase⁸⁶. It has been widely used for its therapeutic effects⁸⁷. It has been reported to contain about 200 substances and its composition of honey varies depending on the plants on which the bee feeds. It contains flavonoids, phenolic acids, ascorbic acid, tocopherols, catalase, superoxide dismutase, reduced glutathione and peptides⁸⁸. Sugars comprise approximately 95–99% of honey’s dry matter⁸⁹. Fructose is the most prevalent sugar and others are glucose, sucrose, maltose, maltotriose and panose⁹⁰. Organic acids, minerals and trace elements such as calcium, potassium, sodium, magnesium, phosphorus, sulphur, iron, zinc, copper and manganese are other components present⁹¹. It is reported to possess wound healing, antihyperlipidemic, effect on eye diseases, effect on fertility, antioxidant, anti-inflammatory, antifungal, anti-bacterial, antiviral, anti-ulcer, antidiabetic, anticancer activity⁸⁶.

Ghrita (Ghee)

Cow ghee have many medicinal properties like rejuvenating, bestows luster and beauty, enhances memory and stamina, increases the intellect and promotes longevity, increases the digestive fire (agni) and improves absorption and assimilation, nourishes ojas, the subtle essence of all the body’s tissues (dhatus)⁹⁷⁻⁹⁸. It is an aphrodisiac and protects the body from various diseases^{91,99}. Ayurveda has traditionally considered ghee to be the healthiest source of edible fat, with many beneficial properties⁹³. It lubricates the connective tissues, thereby rendering the body more flexible⁹⁴. It is an exceptional anupana for transporting herbs to the deeper tissue layers of body⁹⁵. The lipophilic action of ghee facilitates transportation to a target organ and final delivery inside the cell since the cell membrane also contains lipid⁹⁶. Ghee is reported to possess Immunomodulatory, wound healing, Anticancer, hepatoprotective, Anti-hemorrhoids, nootropic, antiepileptic, anti-stress, Antimicrobial, Antifungal, analgesic, Antiulcer, antidiabetic and eye lubricant activity⁹².

Method of preparation and Packaging

The drugs mentioned above are made into fine powder. Then it is mixed with madhu and ghrita to a semi-solid consistency. Packing will be done in air tight plastic bottles, with each containing 5g Kumrabharana Prasha at Sri Dharmasthala Manjunatheshwara College of Ayurveda And Hospital, Hassan. Packets will be properly labelled with the name of the drug,

reference, details of the manufacturer and batch number. This can be readily administered to child in requisite dose.

Discussion on probable mode of action of Kumarabharana Prasha

Kumarabharana prasha by virtue of ingredients which are nootropic in nature namely Svarna, Ghrita, Madhu, Brahmi, Ashwagandha, Yastimadhu, Pippali¹⁰⁰. Majority of the constituents are with Madura, Tikta, Kashaya rasa predominance, Shita Veerya, Madhura Vipaka and Deepaniya, Brumhana, Balya, Rasayana and Medhya actions¹⁰¹. The Rasayana and Medhya (nootropic) properties of these constituents help in attaining proper growth and development¹⁰². Among the three drugs used for bhavana (impregnation), Brahmi¹⁰³ and Guduchi exhibits rejuvenative and nootropic property. Guduchi, Ashwagandha are having Tikta rasa and Usna Virya¹⁰⁴. By virtue of Tikta Rasa¹⁰⁵ it helps in removing Agnimandya (reduced digestive power), improves taste, reduces thirst, removes Kleda (unwanted metabolic waste)¹⁰⁶. The drugs like Swarna, Madhu, Ghrita, Yashtimadhu, Ashwagandha, Yastimadhu, Pippali all are having Madhura Vipaka¹⁰⁷. Madhura rasa¹⁰⁸ and madhura Vipaka promotes Shadindriya Prasadana (nourishing and augmenting all sensory perceptions) at cytosolic as well as at gene expression level and thereby improving strength, and complexion¹⁰⁹.

CONCLUSION

The advancement of analytical techniques allows the manufacturers to set quality standards and specifications thereby maintaining therapeutic efficacy, safety herbo-mineral drugs. The purpose of standardization of such compound drugs helps in ensuring the therapeutic efficacy and quality. Kumarabharana Prasha is a novel herbo-mineral compound preparation with various biological properties. Hence, efforts have been made to provide scientific data on standardization of Kumarabharana Prasha. The meticulous pharmacological studies are to be conducted on individual ingredients of this compound preparation. In addition, clinical trials are to be carried out to ensure the effectiveness and feasibility of Kumarabharana Prasha in children.

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