



SCREENING OF ANTI-TOXIC (VISHAGHNA) PROPERTY OF *PIPPALYADI AGADA* - A REVIEW

Dr. Pranjali B. Kharat^{1*}, Dr. Naganatha S. Gangasagre², Dr. Shital P. Mirajkar³ and Dr. Suhasani M. Lahankar⁴

¹PG Scholar, Agadtantra Dept. GAC Osmanabad.

²Prof. and Head of Agadtantra Dept, GAC Osmanabad.

³Assist Prof. and Guide Agadtantra Dept. GAC Osmanabad.

⁴Associate Prof., Agadtantra Dept. GAC Osmanabad.

*Corresponding Author: Dr. Pranjali B. Kharat

PG Scholar, Agadtantra Dept. GAC Osmanabad.

Article Received on 20/04/2018

Article Revised on 10/05/2018

Article Accepted on 31/05/2018

ABSTRACT

Agadtantra is one of the eight branches of *Ayurveda*. Which deals with the identification of *Visha* (poison), types of *Visha* (poison), signs, symptoms and their treatment. Poisons(*Visha*) have faster action due to its *Vyavayi*, *Vikasi*, and *Ashukari Guna*. In various *Ayurveda samhita* various *Agada Kalpas* are described which have faster action and potent ingredients. sorrow and depression is caused by *Visha*(poison) and body and it also creates sadness to the world. Many *Agadas* are described in the *Agadtantra* and in various *Ayurvedic Granthas*. *Pippalyadi Agada* is one among the several *Agada Kalpas* which is explained in *Yogaratanakara*. According to *Yogaratanakara* *Pippalyadi Agada* is prepared by using *Vishaghana* herbs and it is used in *Dooshivisha Chikitsa* and their symptom like *Kitibha*, Urticarial rashes etc. The ingredient of *Pippalyadi Agada* having anti-inflammatory, antifungal, antimicrobial insecticidal, anti-oxidant, hepatoprotective, immunostimulatory action. In this review article pharmacological & therapeutic action, as well as anti-toxic(*Vishaghna*) property of *Pippalyadi Agada* along with each ingredient will be discussed.

KEYWORD: Pippalyadi Agada, Visha, Antimicrobial, Antioxidant, Dooshivisha, Skin.

INTRODUCTION

Agadtantra is the branch of *Ayurveda*, which deals with treatment of poisonous bites such as snakes, insects, spiders, rats etc. symptoms of different types of poisons along with their combinations.^[1] *Gada* means the disease, *Visha* (poison), pain and *Agada* means a medicine for counteracting the effects of poison disease, etc. *Agada* means an antidote, (*Vishaghna kalpa*).^[2] In *Ayurveda* *Visha* is a substance which after entering the body disturbs all the function of *Doshas*, *Dhatus*, *Rasa* and *Malas* and make them abnormal, thus degrading the health of a human being and sometimes leading to destruction of life.^[3] As it is named *Visha*, it creates sorrow (*Vishada*) in the mind of the affected human being.^[4] In modern science poison is defined as a poison is a substance which, when administered, inhaled or ingested, is capable of acting deleteriously on the human body.^[5] In *Ayurveda* literature various *Agada Yoga* formulations are described and these are used in various poisons treatment. *Pippalyadi Agada* is one of the formulation described by *Yogaratanakara*, it is used in *Dooshivisha Chikitsa*^[6], to treat symptoms like pustules, *Kitibha* and urticarial rashes.^[7] According to *Aacharya*

Sushruta the persons suffering from *Dooshivisha* will be having symptoms are toxicity of food, loose motion, vomiting, thirst, rashes on skin, swelling feet, hand and face, irregular fever.^[8] *Pippalyadi Agada* is available in *Kwatha* form.^[6] This article is based on the textual review and descriptions related to *Pippalyadi Agada* which are collected from classical text *Yogaratanakara*, the related scientific publications and textual literature are also referred. The ingredients of *Pippalyadi Agada* as described in *Yogaratanakara* along with *Rasapanchaka* (table no. 1).

AIM

1. To study the anti-toxic (*Vishaghna*) action of *Pippalyadi Agada*.

OBJECTIVE

1. Collectively study the pharmacological, therapeutic, and anti-toxic (*Vishaghna*) action of each ingredient of *Pippalyadi Agada*.
2. To study the pharmacological, therapeutic and anti-toxic (*Vishaghna*) action of *Pippalyadi Agada*.

MATERIAL AND METHODS

The whole study is based on literary review collected from *Ayurved Samhita*.

Method of preparation of Pippalyadi Agada

All ingredients are taken in same quantity. Then all

ingredient mentioned above are mixed then *Kwatha* are prepared as classical way with 16 times of water by volume with respect to raw material and reduced to $\frac{1}{4}$ th of its initial volume.^[9] *Madhu* as *prakshepa* are added after preparation of *Kwatha*. Then this whole preparation is known as *Pippalyadi Agada*.^[6]

Table 1: Rasapanchaka of the ingredients of Pippalyadi Agada.^[10,11]

Sr. No.	Dravya (Drug)	Rasa (Taste)	Guna (Property)	Veerya (Potency)	Vipaka (Metabolic property)	Karma (Action)	Doshaghnata
1.	Pippali	Katu	Laghu, Snigdha	Ushna	Madhura	Deepana, Kushtahara, Rasayan	Vatakaphahara
2.	Maricha	Katu	Laghu, Tikshna	Ushna	Katu	Shoolaghna, Krimihara	Kaphavatahara
3.	Jatamansi	Tikta, Kashaya, Madhura	Snigdha Laghu,	Shita	Katu	Kasahara, Vishaghna, Twachya	Tridosahama- ka
4.	Lodhra	Kashaya	Laghu, Ruksha	Shita	Katu	Shothahara, Kushtaghna, Jwaraghna, Raktastambhana, Chakshushya	Kapha- pitta shamaka
5.	Dhanyaka	Kashaya	Laghu, Snigdha	Ushna	Madhura	Shothahara, Shukrakshaya – kara, Shulahara, Mutrala, Deepana, Krimihara, Shvaskashra	Tridosahara
6.	Sukshma Ela	Katu, Madhura	Ruksha, Laghu	Shita	Madhura	Hrudya, Mutrajanan, Deepana, Pachan, Kasa- shwashara, Udarshulahara	Tridosahara
7.	Bruhada Ela	Katu, Tikta	Laghu, Ruksha	Ushna	Katu	Twagadoshah – ara, Shulahara, Vishaghna, Jwaraghna, Mukharogahar-a, Vedanashama-Ka	Kaphavatasha- maka
8.	Balak (Sugandhi Wala)	Tikta, Madhura	Ruksha, Laghu	Shita	Katu	Vishaghna, Kushtaghna, Jwaraghna, Twagadoshah–ara, Raktaprasadana, Varnya, Kaphanissarak-a, Hrudiyashama-ka	Kapha-Pittahara

▪ **PIPPALI**^[12]

Latin name – *Piper longum* linn, **Family** – Piperaceae.

Chemical constituent – Piperine, pipartine, sesamin, pipasterol, two alkaloids piperlongumine and piperlonguminine, essential oils.^[12]

Pharmacological action- Antibacterial, anti-inflammatory, insecticidal, antimalarial, CNS stimulant, hepatoprotective, antinarcotic, antiulcerogenic, antispasmodic, anti-giardial, antielmintic, hypoglycaemic, antitubercular, immunostimulatory, analgesic, analeptic.^[13] Antimicrobial activity, anticancer, antioxidant, antiplatelet activity, antidepressant activity, bioavailability enhancer, antiamebic activity, larvicidal activity^[14], etc.

Therapeutic action- Agnidipaka, Vrushya, Rasayana, Rechaka, Swasaghna, Kasaghna, Udararogahara, Jwaraghna, Kushtaghna, Aamvatanasaka, Pittaprakopaka, Shirovirechana, Sugandhi, Pachaka.^[15]

Anti-toxic action – It is one of the important ingredient of *Gandhahasti Agada*^[16], which is used in the treatment of *Shirapradeshi sthita visha*, *Dashta*, *Peetvisha*,

Vidagdha Vishavega in the form of *Lepa*. For *Garavisha* treatment, *Dantecharitaki*^[17], *Dadhika Ghruta*^[18], *Dhanvantara Ghruta*^[19], *Bilvamuladiyoga*^[20] is used. It is one of the content of *Mrutasanjeevan Agada*^[21], *Mahagandhahastinam Agada*^[22], *Mahasugandhi Agada*^[23], *Yapanakhyia Agada*^[24], *Sanjeevan Agada*^[25], *Kshara Agada*^[26], *Amruta Ghruta*^[27], which is used in the treatment of all types of poisoning. It is also used in the following anti-toxic preparation like *Dooshivishari Agada*^[28] used in *Dooshivisha chikitsa*, *Lodhradi Yoga*^[29] used in the treatment of animal bites like snakes(*Sarpa*), rats(*Akhu*), Cat(*Marjara*), hornet(*Kanabha*) etc., *Dashanga Agada*^[30] used in all insect (*Kita*) bite poisoning.

▪ **MARICHA**^[31]

Latin name – *Piper nigrum* linn, **Family** – Piperaceae.

Chemical constituent – Piperidine characterised as isobutylamide, Alkaloids (piperine, chavicine, piperidine, piperetine) and essential oil.^[31]

Pharmacological action - Antioxidant, anticonvulsant,

sedative, analgesic, insecticidal, pesticidal, CNS depressant, muscle relaxant, antipyretic, anti-inflammatory, antifungal, hepatoprotective, Antimicrobial, antiulcer, antibacterial, lipolytic cyclo-oxygenase inhibitory activity.^[32]

Therapeutic action—Agnidipana, Vatashamaka, Pittakaraka, Shvasaghna Shulaghna, Krimighna, Chedana, Ruchya, Medohara, Chedi, Hrudrogahara, Sugandhi, Uttejaka, Svedajanana, Mutrajanana, Lekhanana.^[33]

Anti-toxic action – It is included in *Ashtanga Lavana*^[34], having anti-toxic action. which is used in *Madatya chikitsa*. It is one of the ingredients of anti-toxic formulation like *Mandar Agada*^[35], *Mahasugandhi Agada*^[23], *Yapanakhya Agada*^[24], *Suryodaya Agada*^[36], *Kshara gada*^[37], *Tarun Palaksha Kshara*^[38], *Abhayarishta*^[39], *Ajita Agada*^[40], which is used in the treatment of all types of poisoning. It is mentioned in *Bilvamuladi yoga*^[20], *Mahagandhahasti Agada*^[22] used in the treatment of rats (*Akhu*) bite, snakes (*Sarpa*) bite, spider (*Luta*) bite, poisoning etc.

▪ **LODHRA**^[41]

Latin name – *Symplocos racemosa* Roxb., **Family** – Symplocaceae.

Chemical constituent – Monomethyl pelargonidin glucosides (I & II), Loturine, colloturine, loturidine reducing sugar^[41]

Pharmacological action - Antimicrobial, antidiarrhoeal, spasmogenic, heart depressant, blood pressure depressant, anti-inflammatory^[42]

Therapeutic action – *Grahi*, *Raktapittaghna*, *Raktavikarahara*, *Jwarghna*, *Atisarahara*, *Shothaghna*, *Raktastambaka*, *Sleshmaghana*, *Vranaropana*, *Balya*, *Kushthaghna*.^[43]

Anti-toxic action – It is known anti-toxic drug. It is one of the ingredients of anti-toxic preparations like *Amruta Ghruta*^[27], *Mahasugandhi Agada*^[23], *Sanjeevana Agada*^[25] which is used in the treatment of all types of poisoning. It is also used to prepare *Hridayugmadi Agada*^[44], a remedy useful in *Luta* (spider) *Visha* and all types of poisoning.

▪ **JATAMANSI**^[14]

Latin name – *Nardostachys jatamansi* D., **Family** – Valerianaceae.

Chemical constituent – Essential oil and resinous matter, sesquiterpenes & coumarine active principle^[14].

Pharmacological action – Anticonvulsant, hepatoprotective, hypotensive, antiparkinson's, tranquilizing, antidiabetic, CNS depressant, hypothermic, anthelmintic, diuretic, antifungal, antimicrobial, antiulcerogenic, antiarrhythmic, antispasmodic, anti-implantation, analgesic, antibacterial, antiestrogenic, anti-anxiety, bronchodilatory effect^[45], etc.

Therapeutic action – *Kasahara*, *Vishaghna*, *Twachya*, *Medhajanaka*, *Kantikaraka*, *Balaprada*, *Dahashamaka*, *Visarpahara*, *Kushtaghna*, *Deepana*, *Pachana*, *Mutrala*, *Vatanulomaka*, *Mruduvirechaka*, *Aartavajanana*, *Jwaraghana*, *Twakadoshahara*, *Hrudya*, *Balya*.^[46]

Anti-toxic action – It is important ingredients of following anti-toxic preparation *Chandrodaya Agada*^[47], *Rushabha Agada*^[48], *Dashanga Agada*^[49], *Mahagandhahasti Agada*^[22], *Mrutasanjeevana Agada*^[21], *Tarunapalasha Kshara*^[38], *Yapanakhya Agada*^[24], *Sanjeevani Agada*^[25]. which is used in the treatment of all types of poisoning.

▪ **DHANYAKAMA**^[50]

Latin name – *Coriandrum sativum* linn., **Family** – Umbelliferae.

Chemical constituent – Essential oil, Coriandrol.^[50]

Pharmacological action – Antibacterial, Radical scavenging activity, antioxidant, hepatoprotective, antihyperglycemic, antihyperlipidemic, antimicrobial activity.^[51]

Therapeutic action – *Mutralam*, *deepana*, *Pachana*, *Jwaraghnam*, *Rechaka*, *Grahi*, *Trashnanigrahara*, *Dahaprashamana*, *Vamaka*, *Swasaghna*, *Kasaghna*, *Krimighna*, *Vatanulomana*.^[52]

Anti-toxic action – *Yapanakhya Agada*^[24], *Sanjeevana Agada*^[25], used in *Garavisha* and all types of poisoning. *Trakshya Agada*^[53] used in *Takshaka Sarpa Visha Chikitsa*. *Manadar Agada*^[35] used in *Keeta*, *Luta Visha Chikitsa*. It is also content of *Dooshivishari Agada*^[28], *Mrutasanjeevana Agada*^[21], *Mahagandhahasti Agada*^[22], *Ajeya Ghruta*^[54]. which is used in the treatment of specific cases of poisoning.

▪ **SUKSHMA ELA**^[55]

Latin name – *Elettaria cardamomum maton*, **Family** – Zingiberaceae

Chemical constituent – Volatile oil terpene, terpineol.^[55]

Pharmacological action – Antioxidant, antimicrobial activity, antiulcerogenic activity, gastroprotective activity.^[56]

Therapeutic action – *Kasaghna*, *Svasaghna*, *Kaphanisaraka*, *Arshoghna*, *Mutral*, *Mukhashodhana*, *Durgandhanasaka*, *Chardinigrahana*, *Trushnanigrahana*, *Deepana*, *Pachana*, *Ruchya*, *Sugandhi*, *Vatanulomaka*, *Uttejaka*.^[55]

Anti-toxic action – It is one of the content of following anti-toxic preparation *Balasurya Agada*^[57], *Sugandhakhya Agada*^[58], *Kalyanaka Ghruta*^[59], which is used in the treatment of all poisoning. *Gandhamadana Agada*^[60] is also anti-toxic preparation used in *Keeta*, *Luta Visha Chikitsa*.

▪ **BRUHADA ELA**^[61]

Latin name – *Amomum subulatum* Roxb, **Family** – Zingiberaceae.

Chemical constituent – Cineol, essential oil.^[61]

Pharmacological action – Due to terpinols it has analgesic, antimicrobial activity, cardiac stimulant, carminative, diuretic, stomachic. Antioxidant activity, antiulcer activity, hpolipidaemic activity.^[62]

Therapeutic action – *Twagadoshahara*, *Varnya*, *Mastishka-Nadisansthan shamaka*, *Raktaprasadana*, *Hrudya shamaka*, *Balya*, *Raktarodhaka*, *Kaphanissaraka*,

Mutrajanan, Kushtaghna, Jwaraghna, Vishaghna.^[61]

Anti-toxic action - It is one of the ingredients of anti-toxic formulation like Mahagandhahasti Agada^[22], Danti Haritaki^[17], Gandhamadana Agada^[60], Balasurya Agada.^[57]

▪ **BALAKA^[63] (Sugandhi wala)**

Latin name – *Vetiveria zizanioides*, **Family** – Gramineae.

Chemical constituent – Essential oil (vetiver oil), Benzoic acid, furfural.^[63]

Pharmacological action - Antioxidant, anti-inflammatory activity, pesticide.^[64]

Therapeutic action – Jwaraghna, Chardinigrahana, Hrudyā, Madarogahara, Kaphaghna, Pittanighrahar, Trashnanigrahana, Vishaghna, Visarapahara, Dahaprashmana, Mutrala, Vranaropana, Stambhaka, Pachaka, Duragandhanasaka, Stanyajanana, Sramahara, Kusthaghna.^[63]

Anti-toxic action – it is mentioned in Udumbaradi yoga^[65], Garudanjana^[66], Sugandhakhyā Agada^[58], Mrutasanjeevana Agada^[21], Sanjeevana Agada^[25] & Mahagandhahasti Agada^[22] having anti-toxic action. Shairisha Tail.^[67] is also anti-toxic preparation used in Dranshtavisha, Garavisha, Mulavisha chikitsa.

▪ **SUVARCHIKA (salt peter)**

A preservative and curing agent. Is an antimicrobial action.^[68]

Chemical constituent: Pottassium nitrate (KNO₃), Nitrites.^[69]

Anti-toxic action – It includes following anti-toxic formulation like Panchama Triphaladi Kshara^[70], Somamruta Ghruta^[71], Kshara Gutika^[72], Kshara Agada^[26] & Dooshivishari Agada^[28], which is used in the treatment of all types of poisoning.

▪ **GAIRIKA^[73] - (Kanaka Gairika- fe₂o₃)**

Madhura, Kashaya Rasa, Snigadha, Sheeta Guna, Chakshushya, Dahahara, Pittahara, Raktavikarhara, Kaphahara, Hikkahara, Vishaghana, Kanduhara, Udararogahara.^[73]

Anti-toxic action - It content Udumbaradi yoga^[65], Mahasugandhi Agada^[23], Trakshya Agada^[53], Kshara Agada^[37], Mandara Agada^[35] having anti-toxic action.

▪ **MADHU (Honey)**

According to Acharya Charaka Madhu has Kashaya Rasa, Ruksha, Tikshana Guna, and Kaphashamaka.^[74]

According to Acharya Sushruta Madhu has Madhura Rasa, Anurasa Kashaya, Guna Ruksha, Lekhana, Shita.^[75] According to Yogaratnakara Madhu is Kushtanashaka, also used in, gulma, Pittaatisara, Grahani, Kshaya, Jwara.^[76]

Pharmacological action – Modern science honey has hygroscopy & fermentation property, also antibacterial, antidiarrheal. Used in obesity, arthritis, skin disease, enczema, dermatitis, stomach ulcers, burns, wounds,

cough, asthma, vision problem.^[77]

Therapeutic action - Vishaghna, Krumighna, Hrudyā, Vajikarana, Vranropana, Chakshushya, Prasadana, Tridoshaprashmana, Kaphapitta – Medovrudhinashaka, Prameha, Kasa, Hikka, Shwasa, Trushna nashaka, Sandhana, Shodhana, different types of Madhu are described in Sushruta Samhita.^[75]

Anti-toxic action – it is one of the ingredients of anti-toxic preparation like Gomaya Agada^[78], Champaka Agada^[79], Mandara Agada^[35] which is used in the Keeta, Luta Visha Chikitsa. It is also content of following anti-toxic preparation Dwitiya Indrokta Rasayana^[80], Lodhradi Yoga^[29], Heemavana Agada^[81], Haridrayugmadi Yoga.^[44]

▪ **DISCUSSION**

Pippalyadi Agada contains 11 drugs. Most of these drugs have Katu Vipaka, Ushana Veerya, Katu, Tikta, Kashaya Rasa, and Vishaghna, Krimihara, Kusthaghna, Twagdosha, Deepaniya, Shothahara, Karma. In Dooshivisha Chikitsa Pippalyadi Agada is used. Any poison which has become old, killed by other antipoisonous medicines, dried by forest fire, breeze and sunlight or that which by its very nature is not endowed well with (all) the properties (of the poison) derives the name Dooshivisha. It is less potent and deposited in the body. Poorvarooopa of Dooshivisha is Nidra, Gurutwa, Jrumbha etc. also symptoms like pustules, Kitibha, And Urticarial rashes etc. Katu, Tikta, Ushana, And Tikshna poroperties of Diaphoretic and diuretic action of some drug individually in the Pippalyadi Agada helps to elimination of poison. pharmacological action of these drug is antibacterial, analgesic, antifungal, antioxidant, anti-inflammatory, hepatoprotective, diuretic, antiulcerogenic, anthelmintic, anticonvulsant etc. the preparation of Pippalyadi Agada is useful in the Dooshivisha chikitsa and treatment of poison.

▪ **CONCLUSION**

Yogaratanakara described Pippalyadi Agada. Most of the ingredient of Pippalyadi Agada having Krimihara, Vishaghna, Deepaniya, Karmas. The use of Pippalyadi Agada in Dooshivisha chikitsa and their symptoms like Kitibha, urticarial rashes, pustules. Most of the drugs in the Pippalyadi Agada is used in skin disease, leprosy, acne, bronchitis, asthma, eye disease, gastric disorders, scorpion sting, convulsions, epilepsy etc. The review of this article is to provide collective information on pharmacological, therapeutic, anti-toxic (Vishaghna) and medicinal use of Pippalyadi Agada.

REFERENCE

1. Kaviraj Dr. Shastri Ambikadatta - Sushrut samhita Sutrashtana, Vedotpattadhyaya, 1/14, Edition reprint 2008, published by- Chaukhamba Sanskrit Sansthan Varanasi, 4.
2. Vd. Pravinkumar Thakre – Agadatantra, Vyavahar Ayurved Shlokavalee, Edition, published by-

- Shanatanu Prakashan Pune, 2010; 2.
3. Kaviraj Dr. Atrideva Gupta–Ashatangasangraha Uttarasthana, Vishapratishedhiyaadhyaya, 40/17, Edition reprint, published by- Chaukhamba Krushanadas Academy Varanasi, 2005; 342.
 4. Kaviraj Dr. Shastri Ambikadatta - Sushrut samhita Kalpasthana, Jangamvishavidnyaniyam Aadhyaya, 3/21, Edition reprint, published by- Chaukhamba Sanskrit Sansthan Varanasi, 2008; 32.
 5. BV Subrahmanyam – Parikh’s Textbook of Medical Jurisprudence, Forensic Medicine and Toxicology, Edition Seventh- reprint, published by – CBS Publishers & Distributors Pvt Ltd, New Delhi-110002, India, 2016; 507.
 6. Vaidya Lakshmiapati Shastri - Yogaratanakar, Vishaadhikar (Dooshivishchikitsa)/2, Edition, published by - Chaukhamba Sanskrit Sansthan Varanasi, 1999; 470.
 7. Acharya Vidyadhar Shukla, Ravidutta Tripathi – Charaka Samhita vol-II, edited with ‘Vaidyamanorama’ hindi Commentary, Chikitsasthana, Vishachikitsa Aadhyaya 23/ 31, Edition reprint, published by- Chaukhamba Sanskrit Sansthan Varanasi, 2010; 545.
 8. Kaviraj Dr. Shastri Ambikadatta - Sushrut samhita, Kalpasthana, Sthavar - vishavidnyaniyam Aadhyaya, 2/30-32, Edition reprint 2008, published by- Chaukhamba Sanskrit Sansthan Varanasi, 26.
 9. Srivastava Shailaja –Sharngadhar Samhita, Dvitiya Aadhyaya, 2/1-2, Edition-2013, published by- Chaukhamba Sanskrit Bhavana Varanasi, 135.
 10. Acharya Priyavata Sharma – Dravyaguna Vidyana, part-II, Edition reprint 2017, published by- Chaukhamba Sanskrit Sansthan Varanasi, 221001.
 11. Prof. Chunekar Krushnchandra – Bhavprakashnighantu, Edition reprint-2015, published by- Chaukhamba Bharati Academy Varanasi, 221001.
 12. Acharya Priyavata Sharma – Dravyaguna Vidyana, part-II, Edition reprint 2017, published by- Chaukhamba Sanskrit Sansthan Varanasi, 221001: 277.
 13. P.C. Sharma, M.B. Yelne, T.J. Dennis, – Database on medicinal plant used in Ayurveda, Pippali, volume –3, Edition reprint - 2003, published by- Central Council for Research in Ayurveda & Siddha, Department of AYUSH, New Delhi, 110058; 472-499.
 14. Aravind D et al. Conceptual study on anti-toxic action of Kshara Agada. A review. Int. J. Res. Ayurveda Pharm., 2017; 8(1): 19-21. <http://dx.doi.org/10.7897/2277-4343.08129>.
 15. Prof. D. Shanth Kumar Lucas - Dravyaguna Vidyana, part-II(Study of Dravya-Materia Medica), Edition - 2008, published by- Chaukhamba Visvabharati Varanasi, 221001; 365.
 16. Prof Priyavata Sharma –editor, translator. Charaka Samhita (Text with English translation). Chaukhamba Orantaliya, Varanasi, 2011. Chikitsasthana–Visha Chikitsaadhyaya. 1st edition, 23/65-73: 371-372.
 17. Dr.Bramhanand Tripathi – Ashatangahrudya part I, Gulmachikitsaadhyaya Chikitsasthana 14/92-97, Edition reprint 2012, published by- Chaukhamba Sanskrit Sansthan Varanasi, 740.
 18. Dr. Bramhanand Tripathi – Ashatangahrudya Chikitsasthana, Gulmachikitsa adhyaya 14/13-99, Edition reprint 2012, published by- Chaukhamba Sanskrit Sansthan Varanasi, 731.
 19. Kaviraj Dr. Atrideva Gupta – commentator. Ashtanga Sangraha, Krushnadas Academy, Varanasi, 2001. Chikitsasthana – Prameha Chikista. 1st edition, 14/13. 84.
 20. Kaviraj Dr. Atrideva Gupta –Ashatangasangraha Uttarasthana, Sarpavidyaniyama adhyaya, 42/60, Edition reprint 2005, published by- Chaukhamba Krushanadas Academy Varanasi, 361.
 21. Prof Priyavata Sharma –editor, translator. Charaka Samhita (Text with English translation). Chaukhamba Orantaliya, Varanasi, 2011. Chikitsasthana – Visha Chikitsaadhyaya. 1st edition, 23/54-60. 370-371.
 22. Prof Priyavata Sharma –editor, translator. Charaka Samhita (Text with English translation). Chaukhamba Orantaliya, Varanasi, 2011. Chikitsasthana – Visha Chikitsaadhyaya. 1st edition, 23/77-94. 373.
 23. Kaviraj Dr. Shastri Ambikadatta - Sushrut samhita, Kalpasthana, Dundubhiswaniykalpa Aadhyaya, 6/14-27, Edition reprint 2008, published by- Chaukhamba Sanskrit Sansthan Varanasi, 69.
 24. Kaviraj Dr. Atrideva Gupta – commentator. Ashtanga Sangraha, (Vol II). Krushnadas Academy, Varanasi, 2001. Uttarasthana – Vishapratishedha. 1st edition, 40/50: 344.
 25. Kaviraj Dr. Atrideva Gupta –Ashatangasangraha Uttarasthana, Vishapratishedhiya Aadhyaya, 40/55, Edition reprint 2005, published by- Chaukhamba Krushanadas Academy Varanasi, 361.
 26. Kaviraj Dr. Shastri Ambikadatta - Sushrut samhita, Kalpasthana, Dundubhiswaniykalpa Aadhyaya, 6/3-7, Edition reprint 2008, published by- Chaukhamba Sanskrit Sansthan Varanasi, 68.
 27. Acharya Vidyadhar Shukla, Ravidutta Tripathi – Charaka Samhita vol-II, edited with ‘Vaidyamanorama’ hindi Commentary, Chikitsasthana, Vishachikitsaadhyaya 23/243-248 31, Edition reprint 2006, published by- Chaukhamba Sanskrit Sansthan Varanasi, 573.
 28. Kaviraj Dr. Ambikadatta Shastri – commentator. Sushruta samhita, (Vol I). Chaukhamba publication, Varanasi, 2001. Kalpasthana–SthavaraVisha Vijnaniyuma adhyaya. 12th edition, 2/50-52. 29.
 29. Kaviraj Dr. Atrideva Gupta –Ashatangasangraha Uttarasthana, Sarpavidyaniyama adhyaya, 42/59, Edition reprint 2005, published by- Chaukhamba Krushanadas Academy Varanasi, 360.
 30. Prof. K.R. Srikantha Murthy – editor. Ashatanga Hrudya (Vol III). Chaukhamba Krishanadas Academy, Varanasi, Reprint 2013. Uttarasthana – Kitalutadi Pratishedha. 1st 37/27-28, 363.

31. Prof. D. Shanth Kumar Lucas - Dravyaguna Vidyana, part-II(Study of Dravya-Materia Medica), Edition - 2008, published by- Chaukhamba Visvabharati Varanasi, 221001: 361.
32. P.C.Sharma, M.B. Yelne, T.J. Dennis, – Database on medicinal plant used in Ayurveda & Siddha, Maricha, volume –5, Edition reprint - 2008, published by- Central Council for Research in Ayurveda & Siddha, Department of AYUSH, New Delhi, 110058: 187-234.
33. Prof. D. Shanth Kumar Lucas - Dravyaguna Vidyana, part-II(Study of Dravya-Materia Medica), Edition - 2008, published by- Chaukhamba Visvabharati Varanasi, 221001: 360.
34. Kaviraj Dr. Atrideva Gupta –Ashatangasangraha Uttarasthana, Chikitsasthana-Madatyayachikitsaadhyaya, 9/29, Edition reprint 2005, published by- Chaukhamba Krushanadas Academy Varanasi, 54.
35. Prof. K.R. Srikantha Murthy – editor. Ashatanga Hrudya (Vol III). Chaukhamba Krishanadas Academy, Varanasi, Reprint 2013. Uttarsthana – Kitalutadi Pratishedha. 1st 37/24-32: 371.
36. Kaviraj Dr. Atrideva Gupta –Ashatangasangraha Uttarasthana, Vishapratishedhiyaadhyaya, 40/57, Edition reprint 2005, published by- Chaukhamba Krushanadas Academy Varanasi, 345.
37. Acharya Vidyadhar Shukla, Ravidutta Tripathi – Charaka Samhita vol-II, edited with 'Vaidyamanorama' hindi Commentary, Chikitsasthana, Vishachikitsaadhyaya 23/102-104, Edition reprint 2006, published by- Chaukhamba Sanskrit Sansthan Varanasi, 573.
38. Kaviraj Dr. Atrideva Gupta –Ashatangasangraha Uttarasthana, Vishapratishedhiyaadhyaya, 40/110, Edition reprint 2005, published by- Chaukhamba Krushanadas Academy Varanasi, 350.
39. Dr. Bramhanand Tripathi – Ashatangahrudya Chikitsasthana, Aarshachikitsa adhyaya 8/64-67, Edition reprint 2012, published by- Chaukhamba Sanskrit Sansthan Varanasi, 665.
40. Kaviraj Dr. Ambikadatta Shastri – commentator. Sushruta samhita, (Vol I). Chaukhamba publication, Varanasi, 2001. Kalpasthana – Sarpa Dashta Visha Vijnaniyumaadhyaya. 12th edition, 5/76: 52.
41. Prof. D. Shanth Kumar Lucas - Dravyaguna Vidyana, part-II(Study of Dravya-Materia Medica), Edition - 2008, published by- Chaukhamba Visvabharati Varanasi, 221001: 255.
42. P.C. Sharma, M.B. Yelne, T.J. Dennis,– Database on medicinal plant used in Ayurveda & Siddha, Lodhra volume –5, Edition reprint - 2008, published by- Central Council for Research in Ayurveda & Siddha, Department of AYUSH, New Delhi, 110058: 164-170.
43. Prof. D. Shanth Kumar Lucas - Dravyaguna Vidyana, part-II(Study of Dravya-Materia Medica), Edition - 2008, published by- Chaukhamba Visvabharati Varanasi, 221001: 254.
44. Kaviraj Dr. Atrideva Gupta –Ashatangasangraha Uttarasthana, Lutapratishedha adhyaya, 44/50, Edition reprint 2005, published by- Chaukhamba Krushanadas Academy Varanasi, 372.
45. K.V.Billore, M.B.Yelne, T.J.Dennis, B.G.Chaudhari – Database on medicinal plant used in Ayurveda, Jatamansi, volume –7, Edition- 2005, published by- Central Council for Research in Ayurveda & Siddha, Department of AYUSH, New Delhi, 110058: 135-157.
46. Prof. D. Shanth Kumar Lucas - Dravyaguna Vidyana, part-II(Study of Dravya-Materia Medica), Edition - 2008, published by- Chaukhamba Visvabharati Varanasi, 221001: 232.
47. Prof. K.R. Srikantha Murthy – editor. Ashatanga Hrudya (Vol III). Chaukhamba Krishanadas Academy, Varanasi, Reprint 2013. Uttarsthana – Visha Pratishedha. 1st 35/24-32: 332.
48. Kaviraj Dr.Atrideva Gupta–Ashatangasangraha Uttarasthana, Sarpavishapratishedhaadhyaya, 42/62, Edition reprint 2005, published by- Chaukhamba Krushanadas Academy Varanasi, 362.
49. Kaviraj Dr. Atrideva Gupta –Ashatangasangraha Uttarasthana, Vishapratishedhiyaadhyaya, 40/64, Edition reprint 2005, published by- Chaukhamba Krushanadas Academy Varanasi, 346.
50. Acharya Priyavata Sharma – Dravyaguna Vidyana, part-II, Edition reprint 2017, published by- Chaukhamba Sanskrit Sansthan Varanasi, 221001: 323.
51. <https://www.researchgate.net>
52. Prof. D. Shanth Kumar Lucas - Dravyaguna Vidyana, part-II(Study of Dravya-Materia Medica), Edition - 2008, published by- Chaukhamba Visvabharati Varanasi, 221001; 207 53. Kaviraj Dr. Shastri Ambikadatta - Sushrut samhita, Kalpasthana, Sarpadashtavishachikitsaadhyaya, 5/65-67, Edition reprint 2008, published by- Chaukhamba Sanskrit Sansthan Varanasi, 65.
54. Kaviraj Dr. Shastri Ambikadatta - Sushrut samhita, Kalpasthana, Sthavarvishavidyanyayaadhyaya, 2/47-49, Edition reprint 2008, published by- Chaukhamba Sanskrit Sansthan Varanasi, 37.
55. Chuneekar Krushnchandra – Bhavprakashnighantu, Edition reprint-2015, published by-Chaukhamba Bharati Academy Varanasi, 221001: 213.
56. Gurdip Singh et al. Antioxidant and antimicrobial activities of essential oil and various oleoresins of Elettaria cardamomum (seed and pods) Journal of the Science of Food and Agriculture, 2008; 88(2): 280-289. <https://scholar.google.co.in>
57. Kaviraj Dr. Atrideva Gupta – commentator. Ashatanga Sangraha, (Vol II). Krushnadas Academy, Varanasi, Uttarasthana – Vishapratishedha. 1st edition, 2001; 40/77; 347.
58. Kaviraj Dr. Atrideva Gupta –Ashatangasangraha Uttarasthana, Vishopadravapratishedhaadhyaya, 47/39, Edition reprint, published by- Chaukhamba Krushanadas Academy Varanasi, 2005; 383.
59. Acharya Vidyadhar Shukla, Prof.Ravidutta Tripathi – Charaka Samhita vol-II, edited with

- ‘Vaidyamanorama’ hindi Commentary, Chikitsasthana, Unamadachikitsa adhyaya 9/35-41, Edition reprint 2010, published by- Chaukhamba Sanskrit Sansthan Varanasi, 240.
60. Dr. Bramhanand Tripathi–Ashotanghrudya Uttarsthana, Keetalutadivishapratishedhaadhyaya 37/74, Edition reprint 2012, published by- Chaukhamba Sanskrit Sansthan Varanasi, 1174.
 61. Acharya Priyavata Sharma – Dravyaguna Vidya, part-II, Edition reprint 2017, published by- Chaukhamba Sanskrit Sansthan Varanasi, 221001: 729-730.
 62. Kumar Gopal et al. Amomum subulatum (Roxb.): An overview in all aspects. Int. Res. J. Pharm., 2012; 3(7). ISSN: 2230-8407. www.irjonline.com
 63. Acharya Priyavata Sharma – Dravyaguna Vidya, part-II, Edition reprint 2017, published by- Chaukhamba Sanskrit Sansthan Varanasi, 221001: 114-116
 64. Bharat Bhushan, et al. Vetiveria zizanioides (Linn.) Nash: A pharmacological overview. Int. Res. J. Pharm., 2013; 4(7): 18-20. <http://dx.doi.org/10.7897/2230-8407.04704>
 65. Kaviraj Dr. Atrideva Gupta –Ashotangasangraha Uttarasthana, Vishapratishedhiyaadhyaya, 40/65, Edition reprint 2005, published by- Chaukhamba Krushanadas Academy Varanasi, 346.
 66. Kaviraj Dr. Atrideva Gupta – Ashotangasangraha Uttarasthana, Sarpavishapratishedhaadhyaya, 42/40, Edition reprint 2005, published by- Chaukhamba Krushanadas Academy Varanasi, 360.
 67. Shri Kaviraj Dr. Atrideva Gupta – commentator, Ashtanga Sangraha, (Vol II). Krushnadas Academy, Varanasi, 2001. Uttarasthana – Balopacharnium. 1st edition, 10/17. 225.
 68. <https://en.m.wikipedia.org>
 69. Prof. Chuneekar Krushnchandra – Bhavprakashnighantu, Haritakyadivarga, Edition reprint-2013, published by- Chaukhamba Bharati Academy Varanasi, 221001: 161.
 70. Acharya Vidyadhar Shukla, Prof. Ravidutta Tripathi – Charaka Samhita vol-II, edited with ‘Vaidyamanorama’ hindi Commentary, Chikitsasthana, Grahaidoshachikitsaadhyaya 15/188-193, Edition reprint 2010, published by- Chaukhamba Sanskrit Sansthan Varanasi, 383.
 71. Kaviraj Dr. Atrideva Gupta –Ashotangasangraha Uttarasthana, Rasayanvidhinam aadhyaya, 49/158, Edition reprint 2005, published by- Chaukhamba Krushanadas Academy Varanasi, 409.
 72. Acharya Vidyadhar Shukla, Prof. Ravidutta Tripathi – Charaka Samhita vol-II, edited with ‘Vaidyamanorama’ hindi Commentary, Chikitsasthana, Shvayathuchikitsa Aadhyaya, 12/43-46, Edition reprint 2010, published by- Chaukhamba Sanskrit Sansthan Varanasi, 278.
 73. Shri Gulrajsharma Mishra – Ayurveda Prakasha, Edition - 1994, published by- Chaukhamba Bharati Academy Varanasi, 221001.324-325.
 74. Acharya Vidyadhar Shukla, Prof. Ravidutta Tripathi – Charaka Samhita vol-I, edited with ‘Vaidyamanorama’ hindi Commentary, Vimanasthana, Rasavimana adhyaya 1/3., Edition reprint 2011, published by- Chaukhamba Sanskrit Sansthan Varanasi, 551.
 75. Kaviraj Dr. Shastri Ambikadatta- Sushrut samhita Sutrasthana, Dravdravyavidhi aadhyaya, 45/132, Edition reprint 2008, published by- Chaukhamba Sanskrit Sansthan Varanasi, 180.
 76. Vaidya Lakshmipati Shastri - Yogaratanakar, Madhuguna, 8-9, Edition-1999, published by - Chaukhamba Sanskrit Sansthan Varanasi, 109.
 77. www.medicalnewstoday.com
 78. Dr. Bramhanand Tripathi – Ashotanghrudya Uttarasthana, Keetalutadivishapratishedha Aadhyaya, 37/72, Edition reprint 2012, published by- Chaukhamba Sanskrit Sansthan Varanasi, 1175.
 79. Dr. Bramhanand Tripathi–Ashotanghrudya Uttarasthana, Keetalutadivishapratishedhaadhyaya, 37/71-72, Edition reprint 2012, published by- Chaukhamba Sanskrit Sansthan Varanasi, 1175.
 80. Acharya Vidyadhar Shukla, Prof. Ravidutta Tripathi – Charaka Samhita vol-I, edited with ‘Vaidyamanorama’ hindi Commentary, Chikitsasthana, Rasayana adhyaya (Ayurvedsamuthaniya Rasayanpada) 1/1/4- 13-26, Edition reprint 2010, published by- Chaukhamba Sanskrit Sansthan Varanasi, 40-41.
 81. Kaviraj Dr. Atrideva Gupta–Ashotangasangraha Uttarasthana, Sarpavishapratishedhaadhyaya, 42/27, Edition reprint 2005, published by- Chaukhamba Krushanadas Academy Varanasi, 358.