



Research Article

ROLE OF POISONOUS PLANT IN MEDICINE -LITERARY REVIEW

1,*Dr. Priti Lohe Wanjari and 2Dr. Sonali Chalakh

¹PG Scholar, Department of Agad Tantra MGACH&RC, Salod (H), Wardha

²Asso. Professor and HOD Department of Agad Tantra, MGACH&RC, Salod (H), Wardha

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ABSTRACT

Ayurveda emphasizes the relationship between man & plants throughout the development of human culture. The use of plants for healing purpose is very common in developing countries. Medicinal plants are used indiscriminately without knowing their possible adverse effects. These effects are due to the presence of some phytotoxic compound present in the plants. Since immemorial time many poisonous plants are used as a medicine. But before its therapeutic use their purification means *shodhanasanskara* is mentioned in *Samhitas*. These *shodhana* procedures reduce toxicity of these plants and also improve their quality. As the action of poison is very fast because of its quality, same quality may be useful while treating the diseases when these plants are used in medicine. So formulations prepared by these poisonous plants are more efficacious and fast acting.

INTRODUCTION

Plants are used for healing purpose since traditional time. Majority of medicines mentioned in *Ayurveda* are plants based. These medicines are used indiscriminately without their side effects. As per *Ayurveda* the action of plants is because of its basic materialistic elements constituents like *Rasa*, *veerya*, *vipaka* and *Prabava*. As per the modern science this can be considered on their chemical constituents like glycosides, volatile oils, resins and alkaloids nature (Deshapande Manasi Dravyagun, 2007). This toxicity is due to the presence of phytotoxic components present in plants. Before use of such poisonous for medicinal various *sanskara* (processing) has been mentioned in *Samhitas*. Due to *shodhanasanskara* toxicity of these plants gets minimized. In *Bhavaprakashit* already mentioned (Charak, 2001). This toxicity is due to the presence of phytotoxic components present in plants. Before use of such poisonous medicine various *sanskara* (processing) has been mentioned in *Samhitas* (Mishra Bramha Shankar, 2003). Acharya Charaka has first explained the *shodhanasanskara* in context of Danti Dravantikalpnaadhyaaya to reduce *vikasi* property of Danti root. *Vaghabhata* also mentioned the *shodhanasanskara* of *bhallataka* in *Bhallatak Rasayana* context. *Shodhana* is not only purification process but it also enhances the potency and efficacy of the drugs.

*Corresponding author: Dr. Priti Lohe Wanjari,
PG Scholar, Department of Agad Tantra MGACH&RC, Salod (H),
Wardha.

Vatsnabhaas before *shodhana* act as cardiac depressant after *shodhana* procedure its property gets converted and acts as cardiac stimulant. Acharya explained ten properties like *Aashu* (fast), *Vavayyi* (spreading before digestion), *sukshma* (minute), *vikasi* (muscle relaxant) which promotes their action. That why any formulations which contains toxic plants becomes fast acting (Prasad, 2009).

Aim and Objectives of Studies

To study the role of toxic plants in medicinal use.

MATERIALS AND METHODS

All the traditional texts like *Charaka Samhita*, *Sushruta Samhita* were studied.

Shodhan Dravya of poisonous plant (Joshi Devendr, 2014)

These plants are classified into *Mahavisha* and *upvisha* on the basis of their potency. Out of *MahaVisha* *Vastanabh* is used for therapeutic purposes and *upvisha* like *Kuchala*, *Jaypala*, *Dhatura*, *Bhallataka*, *vijaya*, *Ahiphena*, *karveer*, *Gunja*, *snuhi*, *arka*, *langaliare* used for therapeutic purposes.

DISCUSSION

Use of medicinal plants is widespread at primary health care level. *Ayurveda* phytochemicals in plants are amino acids, carbohydrates, lipids, volatile oils, steroidal compounds,

Table1. Shodhana Sansakara of Poisonous plants in Different media

Sr.no	Poisonous plant(drug)	Shodhandravaya
1	Vatsanabha	Cowmilk (boiling for 3 hrs)
2	Jaypala	Cow milk (decorticate and boil)
3	Kuchala	Cowurine(frying)
4	Bhallataka	Ishatikachurna(adding and rubbing followed bt washing with(coconut water)
5	Vijaya	Cowmilk(bhavana)
6	Ahiphena	Juice of ginger(bhavana)
7	Gunja	Cowmilk(boiled for 3 hrs)
8	Karveera	Cow urine (boil)
9	Arka	---
10	Snuhi	Add ¼ chinchadrava and dry in sun-shine
11	Langali	Cowurine(boil)
12	Dhaturo	Cowmilk(boil 3hrs)

Vatsanabha (Sharma et al., 2001)

Ayurvedic use	Chemical composition	Pharmacological Activity	Therapeutic Evaluation
External use – Vedanastapana, shothhar Internal karmas- Shoolprashaman, Deepan, Pachan, Mutrajanan, Kushghna (su.chi.), Swedajanana Jwarghna (C.Chi.3.380) Rogghanata –External –as a paste, appliedon kushtha (A.H.Chi. 19.83), Internal –Udarvikar, Udarshool, Yakrut pliha vikar, Unmada, Apsmara (C.s 1-3-24, A.HChi21.16U39.50)	Indoconite Chasmoconite, Schasmanthine A (C26H43O6N), (Achatowicz and marion 1964), bikhaconite, pseudconite, (kleasek et al 1972)	Hypotensive, Spasmogic, Depressnt, anti diarrheal, psychostimulant, CNS inhibitor and cardiac stimulant	Analgesic 9 post operative (albu and jobert). It acts on thermo regulator center and produces hypothermia and excessive sweating and skin becomes cold moist calm

Jaypal (Sharma, 2001)

Ayurvedic use	Chemical constituents	Pharmacological activity	Therapeutic evaluation
Doshghanata-kaphavatshamak. Karmas- : Lekhana, Vidahi Sphotajanana Krimighna, Shothahar, Vishghna, Virechan (C. Su.1. 78,2,9). Rogaghnata - Root is used in Charamarog, Kushtha, (C Chi 7.124. S.Su 44.46, A.H.Chi 19.86) Krimi,(S.SU 45/124) Jalodar (C .chi, 13.154).	Croton oil – crotoleic acid, tiglic acid, or methyl crotonic acid fatty acids, fixed oil (pillai 1990) toxic protein – croton globin, croton albumin sucrose, glycoside, glycoside and crotoloside(Felter , and Llyod 1998) , tetradecanoylphorbol – 13 –acetate (TPA)	Insecticidal (chui 1950, Heal et al), Croton tiglium seed oil major constituent (TPA) is an extra ordinary potent stimulator of diifferentiationand inhibit DNA synthesis or cell replication cultured in HL_60 cells and inhibit DNA synthesis or cell replction (Huberman E, callaham 1979)	TPA is an extraordinary potent stimulator of differentiation of culture human promyeloocytic leukemia cells in vitro . (Zheng Tao Han et al 1998), the results of in vivo and in vitro studied are reported ethnomedical uses of of wounds SAP including in the treatment of tumors ,wounds stomach ulcers, herpez infection ,itching, pain ,swelling of insect bite (Jones 2003)

Dhaturo (Sharma, 2001)

Ayurvedic Use	Chemical constituents	Pharmacological activity	Therapeutic evaluations
Doshghnata-Kaphavatshamak Rogghanata-Shotha, Vedana, Arsha, Vatavikara, Hridayamandata. Pittaasmari Vrikashashool, Shyayamutra, Shoolprashnam, Garbhashay prasaraka. Karma–Jantughna, Vedanastapana, twagdoshahara, Madak, Antrashamak, Hridayottejaka, Twakdoshaha, Swedarodhak	Apothyscine, Hyoscinenorhyoscine, metaloidene, meteloidine, hyoscyamine, scoplamineand fastudine	Antihelmints, Anticancer, Antispasmogestic, Blood pressure, depressant, Strong nematocidal, Antiviral, Analgesic	Analgesic, CNS depressant

Ahiphena (Sharma, 2001)

Ayurvedic Drugs	Chemical constituents	Pharmacologic al Activity	Therapeutic Evaluation
Doshghanata –kaphavatashamak, karmasExternal-Vedanastapana, shothhar Internal-Kaphaghna, Madak, Vyavay, Vikasi, Vamak 'Stambhaka, Shoolprasham Swedajanana, Jwarghna, swedajanana, shukrasta bhamana Vajikar Roghnanta–external-sandhishoth, Phusphusavarashoth , Karnashoth Netrashool , arsha Gudrog. InternalRoghanta -Kaphavata javikara , Udarashool , kampvata, shwas, kasa , Vishmajwar Shleepadajwara	Morphine, codein, thebain, narcotine , narceine papavarine papavaramine, psuedo morphine , narcein protopine,	Anticonvulsant , Analgesic, Antitissiuve, Hypoglycemic, Carcinigesic, p rotrediovascular, Synergetic, Sedative, Antispasmodic, Antitumour, activities Antidiarrhoeal activity	Analgesic ,sedative, induce sleep, anxiety

Karveer (Sharma, 2001)

<i>Ayurvedic Use</i>	<i>Chemical constituents</i>	<i>Pharmacological activity</i>	<i>Therapeutic evaluation</i>
<i>Doshghnata -- kaphavatashamka Karma – Kushtaghna , Vranbhedhan , Vranaropan, Shothahar , Deepan,Vidahi,,Hridya</i>	<i>Glucoside of lupeol,acetate,neriodorin,glucoside of odorine, acid – mixture of urosolic and olenolic acid</i>	<i>Cardiotonic,Diuretic, Anti stress, Spasmodic, Anti-inflammatory</i>	<i>As external medicine used for skin diseases like rash, scabies, ringworm,,leprosy, boils, skin eruption</i>

Bhallataka (Sharma, 2001)

<i>Ayurvedic use</i>	<i>Chemical constituents</i>	<i>Pharmacological Activity</i>	<i>Therapeutic evaluation</i>
<i>Doshghanata– kaphavtashamak Rogghanata – Indralupta,sphotajanan,sheetprashman, Vishghna, medya, achan,deepan, kamuttejak, vrishya, vajikar, swedajanankarma – Pittahar, Sphotjanan,Sheetaprashman , Vishya, Medhya, Rasayana,Vajikarana</i>	<i>Bhiwanol,anacardiacea,Bifl avonides,A,B,C, jeediflavongalluflavnone, semacarpusflavanone</i>	<i>Antitumour,Analgesic Anti – arthrities, Hypotensive, Immunospressive,Cardiac depressant</i>	<i>Rheumaicarthritis, oesteoarthritis</i>

Kuchala (Sharma, 2001)

<i>Ayurvedic use</i>	<i>Chemical constituents</i>	<i>Pharmacological activity</i>	<i>Therapeutic Evaluation</i>
<i>Dohghanata – kaphavatashamakRogaghnata – Sandhivata, Amavata , Putihara, Uttejaka, Nadibalya, kaphaghna,Grahi, AKushtghna , Kandughna , Swedapanayan KandughanKarmas-Shothhar,Amvata , KshataVatarakta, Badhirya , Ardita, Kandu</i>	<i>Glucoside –loganine, bruine,vomicine, pseudobrucine and methaoxystrychnine,loganine, isostrychnine , loganine</i>	<i>Hepatoprotective, Anticancer CNS stimulant Antimicrobial activity</i>	<i>Antiinflammatory, Analgesic, Rejuvation</i>

Snuhi (Sharma, 2001)

<i>Ayurvedic Use</i>	<i>Chemical constituents</i>	<i>Pharmacological activity</i>	<i>Therapeutic evaluation</i>
<i>Dhoshghanata-kaphavatshamakRogghanata-ShothVedana,,Unmad,KarnshoolVatvyadhi,Gulma, Arsha,Charmarog,PratishayKarma-VedanasthapanatKishnavirechanRechan,RaktashodhakTwakdoshhar,Mootrajanan</i>	<i>Glucoside-diglucoside.5-digglucoside, nerifol , Hexaconasol, Eupho</i>	<i>Antiinflammatory, Insecticidal Localanesthetic activity</i>	<i>Fistula in ano(thread smeared with fresh latex of snuhi</i>

Vijaya (Sharma, 2001)

<i>Ayurvedic Use</i>	<i>Chemical constituents</i>	<i>Pharmacological activity</i>	<i>Therapeutic Evaluation</i>
<i>Doshghanta-Vatakaphashamak Rogaghanta –Shirshul, Ardhavabhedaka,Anidra, Jeernaavat, AptanakakDhanustambha.,Udarshool, Grahi, Pravahika</i>	<i>Spiro compound viztacannabispiranol, dehydrocannabisiran, transbandafarmerisosmer, cannabinoids Canabiaspiranbol</i>	<i>Netamaticidal,Antiepileptic Abortive, Anticonvulsant Antibacterial, Spasmolytic Antiinflammatory,CNS depressant, Peripheral Vasoconstrictor,Euphoric</i>	<i>Nausea vomting induced deu to chemotherapy</i>

Arka (Sharma, 2001)

<i>Ayurvedic use</i>	<i>Chemical constituents</i>	<i>Pharmacological activity</i>	<i>Therapeutic evaluation</i>
<i>Doshghanata-Kaphavatshamak Rogghanata - Vedanavayuktavikarashleepad,Amavata, Shwitra , GulmaCharmarogGandmala,Udararog</i>	<i>Beta amyirin , Three olaene type titerpenes namely Calotropoleanyl,esterProceroleanenol, voruschariRhmnoglucoside, Calotropin, Calotropin,Calactinic acid, Uscharin,Calatoxin , Calatinicacid</i>	<i>Analgesic ,Antioxidant, Antitumor,, Antimicrobial, Nematicidal, High fibronolytic,AnticoagulantVermicidal ,Anthelmintic,calotropin shows digitalis like action on heart not culumative and less harmful</i>	<i>Effective in,Diarrhea,dysentery</i>

Gunja (Sharma, 2001)

<i>Ayurvedic Use</i>	<i>Chemical constituents</i>	<i>Pharmacological activity</i>	<i>Therapeutic evaluation</i>
<i>Doshghanata-kaphavatashamak Rogghananta- Kushta, Vrana,Khalitya,Pakshagh-atVatvyadhi,Indralupta,mukharogaKarma -Kushghana ,keshya, Vranaropan,Vedanasthapanan, Mootrala</i>	<i>Abrin A,B,C, abralin,abrincholine,fla voinds,Abrectorin, Ligroceric, Linoleicacid, Abrugestic</i>	<i>Antibacteria,Aborfacient, Uterinestimulant,kushatha (skindisease),Shotha,Kandu</i>	<i>Anticancer, Antitumor, Antifertility, CNSdepressant, Analgesic</i>

Langali (Sharma, 2001)

Ayurvedic Use	Chemical constituents	Pharmacological activity	Therapeutic Evaluations
Doshghanata - Kaphavata shamak, Rogghanata— Shotha, Vrana , Gandmala Charmrog, Vatarakta Vishamjwara Durabalya Karma— Raktotleshaka, Arsha Kshobhak, Grabhapatan, Garbhasha	Cornigerine, colchine, isoperlyrine Glucoside—luminocolchines , 2- hydroxy6, methoxybenzoic acid 3	Spasmolytic , CNS depressant Antibiotic , Uterine stimulant	Abortive Ulcers, Leprosy, Thirst

Sr no.	Poisons	Classical formulations
1.	Vatsanabh	Agnitundi rasa, Saubhagyavati, Sanjeevavati, Sutshekhar Rasa Anandbhairav Rasa (Sharma, 2001)
2.	Jaypaal	Harenuksdi churn, Danti Dravant, Virechanayog Harenuksdi rasa, Icchabhedi rasa, Jalodari rasa (Pandey Gyanendra Dravyagunavignyan, 2003)
3.	Dhatu	Unmadaganskush Rasa Sutshekhar Rasa kanakasundar rasa , Laghuvish garbh tail (Pandey Gyanendra Dravyagunavignyan, 2003)
4.	Ahiphena	Astaksharigutika , Dugdha Gutika, Akarkarabhad gutika, Swalpa Grahani kapat rasa, Karpurasa Mahavatarograsa, Nidroyarasa Nidroygutia (Pandey Gyanendra Dravyagunavignyan, 2003)
5.	Karaveer	karviradyaitaila , Kasisadi tail, karavira yoga (Pandey Gyanendra Dravyagunavignyan, 2003)
6.	Kuchala	Navjeevan rasa , Agnitundivati , Lakshmilvasarasa, Krimikutharasa , Kupiluhingwadivati (Pandey Gyanendra Dravyagunavignyan, 2003)
7.	Snuhi	Chitrakadivati, Abhayalavan, Vajrakshara, Arshakuthar rasa , Snuhyadi tail, Narach rasa (Pandey Gyanendra Dravyagunavignyan, 2003)
8.	Gunja	Gunjabadra Rasa , Gunjaditail , Gunjadipralepa (Pandey Gyanendra Dravyagunavignyan, 2003)
9.	Langali	Nasikachurn, Lagalirasayan, Somraji tail, Kalkutachurn (Pandey Gyanendra Dravyagunavignyan, 2003)

Alkaloids, Terpenoids, Steroidal compounds, Glycosides, Phenols. The functions of these phytochemicals are A) Antioxidant B) Hormonal Action C) Stimulation of Enzymes d) Interference of DNA replication E) Anti-bacterial effect. *Out of Mahavishvasavanabhis* only available today & which is widely used for therapeutic purposes still today. As per *Charaka Vatsanabha* has mentioned *Jwaraghana* and *Shothajanana* property as per modern these properties are also proven by modern researches⁽²⁶⁾. As it acts on the thermo regulating center of brain it helps to regulate the temperature of the body. *Ashatansangrahakara* mentioned its *rogghnata* in arthrities and study also proved that it acts on the sensory nerve terminal which helps to subside the pain. So it is used in rheumatic arthritis, osteoarthritis (Bharata, 2006; Hecker, 1947). *Kuchala* is an irritant poison ethanolic extract of *Strychnos Vomica* (*kuchala*) has Antibacterial activity which was detected against *E. coli*, or *P. aeruginos* (Wealth of Indian Raw Materials Publication and of Information Directorate, 2011). Croton derivatives of pyrazine shows analgesic effects and *Acharya Charaka* mentioned its *shothahara* property. Milk extract and chloroform extract of *Bhallatakash* shows anti-arthritis and anti-inflammatory activity. Its biflavonoids from the stem bark shows anti-inflammatory properties. *Acharya Charaka* mentioned its *Shothahara karma*. Nut extract shows antioxidant and immune modulator activity (Gnanavel *et al.*, 2012; Satyavati *et al.*, 1969; Vijayalaxmi *et al.*, 2012) *Acharya Charaka* also mentioned its *Rasayana* and *Vajikara* properties. *Gunja* is classified under irritant poison. It has highly antioxidant and proliferative activity. It also has antitumor and anti cancer, antifertility activity (Ram *et al.*, 1985 -1989). Modern pharmacology mentioned its action against skin diseases and therapeutically proved it and *Acharya* already mentioned its use as *Vranaropaka* and in skin diseases (GulMz, 2012). *Datura metal* is a centrally acting poison which has deliriant effects on the brain. *Hyoscyamine* and *scopolamine* present in it are active ingredients. They show analgesic effects. So for arthritis external application *dhatu* leaves are used. At the mild dose *Dhatu* shows antispasmodic action and it already mentioned by *Acharya Charaka* also as *shoolprashamana*. And it also has bronchodilator property vapours of *dhatu* leaves are used in asthma as broncho dilators (Ram, 1985 -1989).

Karveer is a poison which acts on the heart. In large dose it causes *Hrudyaavasada* but if taken in proper dose it has beneficial effect on the heart. As per modern science ethanolic extract of *Nerium olender* (*karveer*) shows typical cardiac activity, its has effect on the force of contraction of cardiac muscles (Tyler *et al.*, 1990). *Ahiphena* has *madakaprabhava* and as per modern it has its action on the central nervous system. As *vedanastapana* and *shothahara karma* are mentioned in *Samhitas* before modern pharmacology proved as *Ahiphena* obtained from the fruits is narcotic, myotic, antispasmodic, nervine tonic. Its use is full in the painful conditions like migraines, dysmenorrhea, pain in abdomen. Seed oil is useful in diarrhoea and dysentery (Wang *et al.*, 2009; Manna Sah *et al.*, 2006). It also induces sleep so used in *anidra* as *Acharya Charaka* also mentioned its *nidrajanana* property.

Vijaya affects the central nervous system. It contains active ingredients like cannabinoids. As per modern pharmacology it has antispasmodic and anti-inflammatory action and *Acharya* also mentioned its *rogghnata* in *Udarshool* and *Jeernasandhivata* (Wealth of India Raw material publication and information Director, 2014) As *snuhi* is known as irritant poison. Antiquorine from ethanolic extract of fresh *snuhi* root has anti-inflammatory and analgesic effects which has already mentioned ancient *Acharya* its *rogghnata* in *Vatavyadhi*, *karnshool* and again mentioned its karma like *vedanastapana*. Leaves are used as aphrodisiac, diuretic and also in the treatment of bronchitis, bleeding piles, aqueous extract of latex facilitates wound healing process (Wealth of India Raw material publication and information Director, 2014). *Langali* has its main action on the uterus and used for induction of labour and facilitates normal delivery in rural area 250 to 500 mg extract of *langali* can cause abortion. This abortifacient activity showing resembles with oxytocin and in *Ayurveda* its already mentioned *langali* as *Garbhapatani* (Wang *et al.*, 2009). *Arkais* also an irritant poison as per *Acharya* its *rogghnata* is explained in *Vedanayuktavata vikara*, *Amavata*, *Gandamala* modern science also explained its pharmacological activity like analgesic, antimicrobial, antivermicidal action and anti-cathartic activity. Its latex is used in treatment of ringworm, guinea, worm blisters, scorpion stings (Malpani Arti, 2011).

Jaypal is comes under irritant poison but *Acharya Charka* has explained its roghananta *kushta* and *chamaroga* and *Acharya Sushrut* mentioned it as *Krimihar* modern therapeutic evaluation also proved its action in tumors ,wounds ,stomach ulcer and itching, pain, swelling of insect bite (A wealth of Indian medicine Raw materials and of Information Director of CCS69, 1996; Kishor, 1997; Bhargava, 1983).

Conclusion

From all this it can conclude that in *Ayurveda* many poisonous drugs has been used effectively in various diseases .*Upavisha* are the group of plants has been used to treat the diseases. Modern researches also proved the effect of poisonous plants in treating diseases Ayurveda emphasize the use of *visha* in various formulations as well as used as a single medicine which proposes it's nobel importance in medical practice.

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