SCREENING OF ANTI-TOXIC(VISHGHNA) PROPERTY OF MANJISTHADI AGAD: A REVIEW

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ABSTRACT

Agadtantra is branch of Ayurveda which deals with identification of Visha (poison), types of Visha (poison), signs, symptoms and their Chikitsa (Management). Agada means formulation of Vishaghana Dravyas. There are many Agadas described in Ayurvedic Samhita. They are used for internal as well as external purpose. Manjisthadi Agad is one of the Kalpa explained by Bharat Bhaishjiya Ratnakara. It is prepared by using Vishghna herbs and used in Visha Chikitsa. In this review article pharmacological and therapeutic action as well as anti-toxic (Vishghna) property of Manjisthadi Agad along with each ingredient will be discussed.

KEYWORD: Manjisthadi Agad, Visha, Antioxidant.

INTRODUCTION

Agadtantra is one of the branch of Ayurveda in which Ayurveda medicine is traditionally divided. Gada means a disease and Agad means any agent which makes the body free from disease; however the term Agad is used specifically for the branch of medicine dealing with toxicology, the description of the different types of poisons, and their antidotes.

Ayurveda has explained numerous medicinal preparations both external as well as internal for the management of Visha (poison).

Visha means the Dravya (substance) which causes Vishad (sorrow/depression).[1] Drugs which act against toxic substance are called as Vishaghna (Anti-toxic).potency and efficacy
of Ayurvedic preparations depend upon quality of drug, Desha (region), Kala (time), Ritu (season), preparation method and route of administration.

*Manjisthadi Agad* is one of the drug explained by *BHARAT BHAISHAJYA RATNAKARA*\(^2\) for the treatment of poison. All the contents of *Manjisthadi Agad* have been evaluated according to the various literatures and have Tridoshghna property especially Kaphvataghna in action.

This article is based on the textual review and descriptions related to *Manjishthadi Agad* which are collected from *Bharat Bhaishajya Ratnakara*, the related scientific publications and textual literature are also referred. This article reviews Therapeutic screening of anti toxic (Vishghna) properties of *Manjishtahi Agad*.

AIM

To study the anti-toxic action of *Manjisthadi Agad*.

OBJECTIVES

1. To study therapeutic and pharmacological action of each ingredient of *Manjisthadi Agad*.
2. To study pharmacological and anti-toxic action of *Manjisthadi Agad*.

MATERIALS AND METHODS

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

Method of preparation of *Manjishthadi Agad*

All ingredients are taken in same quantity and mixed well.
Table no. 1. Raspanchaka of ingredients of Manjisthadi Agad.\textsuperscript{[3,4,5]}

<table>
<thead>
<tr>
<th>Sr.no</th>
<th>Name</th>
<th>Latin Name</th>
<th>Ras</th>
<th>Virya</th>
<th>Vipak</th>
<th>Guna</th>
<th>Karma</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>\textit{Manjista}\textsuperscript{[3]}</td>
<td>Rubia cordifolia</td>
<td>Tikta, Kashay, Madhura</td>
<td>Ushna</td>
<td>Katu</td>
<td>Guru, Ruksha</td>
<td>Kustaghna, Kandugha Raktaprasadan</td>
</tr>
<tr>
<td>2</td>
<td>\textit{Ela}\textsuperscript{[3]}</td>
<td>Elettaria cardamomum maton</td>
<td>Katu, Tikta</td>
<td>Ushn</td>
<td>Katu</td>
<td>Laghu, ruksha</td>
<td>Kafaghna, Kandughn</td>
</tr>
<tr>
<td>3</td>
<td>\textit{Draksha(mrudvika)}\textsuperscript{[4]}</td>
<td>Vitis vinifera</td>
<td>Madhura</td>
<td>Shita</td>
<td>Madhur</td>
<td>Snighda, mrudu</td>
<td>Pitaghn, Raktprasadan, Dahashamak</td>
</tr>
<tr>
<td>4</td>
<td>\textit{Nisha}\textsuperscript{[3]}</td>
<td>Curcuma longa</td>
<td>Tikta, Madhura</td>
<td>Ushn</td>
<td>Katu</td>
<td></td>
<td>Kustaghna, Kandugha, Vishagha</td>
</tr>
<tr>
<td>5</td>
<td>\textit{Jatamansi}\textsuperscript{[3]}</td>
<td>Nardostachys jatamansi D</td>
<td>Tikta, Kashay, Madhura</td>
<td>Shita</td>
<td>Madhur</td>
<td>Laghu</td>
<td>Vedanasthapan, Shothhara</td>
</tr>
<tr>
<td>6</td>
<td>\textit{Yashtimadhu}\textsuperscript{[3]}</td>
<td>Gycerrhiza glabra</td>
<td>Madhura</td>
<td>Shita</td>
<td>Madhur</td>
<td>Guru, Snigdha</td>
<td>Dahshaman, Kandughn</td>
</tr>
<tr>
<td>7</td>
<td>\textit{Harenuka}\textsuperscript{[5]}</td>
<td>Vitex Agnus-Castus</td>
<td>Tikta, Katu</td>
<td>Ushna</td>
<td>Katu</td>
<td>Laghu, Ruksha</td>
<td>Vishaghna, Kafaghna</td>
</tr>
</tbody>
</table>

- **MANJISTHA**
  
  **Latin name** – Rubia cordifolia Linn.
  
  **Family** – Rubiaceae\textsuperscript{[3]}
  
  **Chemical constituent** – Manjistin, Purpurin, Xanthine, Garancin, Alizarin.\textsuperscript{[6]}
  
  **Pharmacological action**
  
  1. Anti-inflammatory action: It exhibited the inhibition of lipoxygenase enzyme pathway responsible for anti-inflammatory action.
  
  2. Anti-microbial action: suppressed the activity of phytopathogens and gossypium klebsiella pneumonia, E.coli, streptomycin.
  
  3. Anti-acne property- it shows activity against propionbacterium acne, staphylococcus Epidermis.
  
  4. Anti-convulsant activity – Triterpenes inhibited seizures induced by electric shock, chemo convulsant.
  
  5. Anti-platelet activity: Inhibits action of platelet activating factors at its receptor level either by its blocking or desensitization property.
  
  6. Anti-viral – napthohydroquinones have antiviral action.
  
  7. Anti-stress- Enhance brain gamma amino-n-buteric acid level and decreased brain dopamine and plasma corticosterone levels.
8. Immuno-modulating –alkaloids, cardiac glycosides, tannins responsible for enhanced immunomodulation.
9. Anti-ulcer, anti-arthritic property, anti-diabetic\(^7\)

**Pharmacological action according to Ayurveda:** Vishaghna, Varnya, Kaphaghna, Kushthaghna, Shothaghna, Raktadoshahara, Pramehaghna, Yoniroghara.\(^8\)

**Therapeutic action:** Vatrakta, Dadru, Shwitra, Ashmari, Prameha, Visarpa, Asthibhagna, Dagdha vrana.\(^8\)

**Anti-toxic action:** Manjistha is an ingredient of Rishbha Agada.\(^9\) Mahaagada,\(^10\) Ksharagada\(^11\), Vishaghna mahakashaya.\(^12\) It is used for treatment of Tritiya Visha Vega\(^13\) mentioned by Acharya Charaka.

**2. SUKSHMA ELA**

**Latin name**- Elettaria cardamomum maton

**Family**- Zingiberaceae\(^3\)

**Chemical constituent**- volatile oil terpene, terpineol\(^14\)

**Pharmacological action**\(^{15}\)

1. Antioxidant
2. Antimicrobial activity
3. Antiulcerogenic activity
4. Gastroprotective activity

**Pharmacological action according to Ayurveda**

Kasaghna, Mutral, Arshoghna, Shwasaghna, Chardinigrahana, Trushnanigrhana, Sugandhi, Uttejaka, Deepan, Pachana\(^{14}\)

**Therapeutic action:** Vatanulomak, Timir nashak, Danta roga, Mukharoga, Hrudroga.\(^{14}\)

**Anti-toxic action:** It is one of the ingredient of Balasurya Agada\(^{16}\) Sugandhyakhyaa Agada\(^{17}\), Kalyanak Ghrita\(^{18}\), Gandhamadana Agada\(^{19}\), Mandara Agada.\(^{20}\) It is one of the content of Lootavishnashaka yoga\(^{21}\)
3. Haridra

**Latin name** – Curcuma longa Linn.

**Family** - Zingiberaceae\(^{[3]}\)

**Chemical Constituent** – Curcumin, Curcumen, Albuminoids, Starch\(^{[22]}\)

**Pharmacological action**

1. Anti-bacterial
2. Anti-inflammatory - It reduces inflammation by lowering histamine levels and producing natural cortisone by adrenal glands.
3. Anti-cancer - It helps to prevent the new cancers growth that are caused by chemotherapy or radiation. Curcumin affects a variety of growth factor receptor and cell adhesion molecules involved in tumor growth, angiogenesis and metastasis.
4. Anti-oxidant - It has a strong capability for scavenging superoxide radicals, hydrogen peroxide and nitric oxide from activated macrophages reducing iron complex and inhibiting lipid peroxidation.
5. Anti-microbial – Inhibits the growth of various bacteria like staphylococci, streptococci.
6. Anti-fungal - It is active against Aspergillums flacus, A. parasiticus\(^{[23]}\)

**Pharmacological action according to Ayurveda:** Vishaghna, Kaphaghna, Shothaghna, Pandughna, Pramehaghna, Twakdoshghna, Vataghna.\(^{[24]}\)

**Therapeutic action:** Pradara, Kandu, Pama, Shitapitta, Udara, Vicharchika, Arsha, Daha, Bhrama, Shlipada.\(^{[22]}\)

**Anti-toxic action:** It is one of the ingredient of Ajeya Ghrita\(^{[25]}\), Sanjeevan Agada\(^{[26]}\), Mahaagada\(^{[10]}\), Ksharagada\(^{[11]}\), Kalyanaka Sarpi\(^{[18]}\), Mahasugandhi Agada\(^{[27]}\), Rajanyadi Agada.\(^{[28]}\) It is mentioned in Yoga used in Tritiya and Ashtam Vega Chikitsa\(^{[13]}\) described by Acharya Charaka. Haridra is one of content of anti toxic preparation like Gandhahastinam Agada\(^{[29]}\), Mruta Sanjeevan Agada\(^{[30]}\), Mahagandhastinam Agada\(^{[31]}\), Paramogada\(^{[32]}\), Chandroday Agada\(^{[33]}\), Vajra Namak Agada\(^{[34]}\), Padmakagada\(^{[35]}\), Suryoday Agada.\(^{[36]}\) Haridra is included in Vishaghna Mahakashaya\(^{[12]}\). Haridra is useful to patients of poisoning for Aabhyantar and Bahya Prayoga.\(^{[37]}\)
4. Jatamansi

**Latin name** – Nardostachys jatamansi D.

**Family** – Valerianaceae

**Chemical constituent** - Essential oil and resinuous matter, sesquiterpens, coumarine, valeranal, nardostachone.

**Pharmacological action**

1. Anti-fungal activity - N. jatamansi oil has fungi static activity against Aspergillus flavus, Aspergillus niger, Fusarium oxysporum. It has fungicidal activity.
2. Hepatoprotective activity - hepatoprotectivity activity against thioacetamide induced hepatotoxicity.
3. CNS activity - Valeranone in Jatamansi prolonged the barbiturate anesthesia, inhibited electroshock convulsions.
4. Antioxident activity - Extract of Jatamansi provides protection against lipid peroxidation.
5. Neuroprotective activity - The protective effect is associated with improving glutathione content, inhibiting lipid peroxidation.
6. Antiparkinson’s activity - It slows the neuronal injury caused in parkinson’s disease.
7. Antidiabetic activity - It decreases glucose level significantly.
8. Jatamansi has antimicrobial, anti hypertensive activity.

**Pharmacological action according to Ayurveda:** Dahashamaka, Vishaghna, Jwaraghna, Kushthaghna, Twakadoshahara.

**Therapeutic action:** Twachya, Deepana, Pachana, Balapradha, Mutrala, Hrudya, Vatanulomaka.

**Anti-toxic action:** It is important content of anti-toxic preparation like Chandrodaya Agada, Rushabha Agada, Dashanga Agada, Mahagandhahasti Agada, Mrutsanjeevana Agada, Yapanakhyya Agada, Sanjivani Agada, Tarunpalasha Kshara.

5. YASHTIMADHU

**Latin name** – Glycerrhiza glabra Linn.

**Family** - Fabaceae
Chemical constituent – Glycyrrhizin, asparagines, sulphuric and malic acid, calcium and magnesium salts\(^{[42]}\)

Pharmacological action
1. Anti-inflammatory – Agent on neutrophil functions including reactive oxygen species, quenching agent of free radicals.
2. Anti-oxidant activity – significant free radical scavenging, Hydrogen donating ,metal ion chelating ,anti-lipid peroxidative
3. Anti-fungal activity- Isoflavonoids such as glabridin, glabrol and their derivatives are responsible for inhibition of Mycobacterium smegmatis and candida albicans.
4. Anti-tussive and expectorant activity- It decreases irritation and produce expectorant effect 5.
5. Anti-bacterial activity- In vitro studies prove that inhibitory activity on cultures of staphylococcus aureus and streptococcus pyogens.
7. Immunostimulatory effect- It shows immunostimulatory effect by increased production of TLD 69 lymphocytes and macrophages from human granulocytes. It prevents increase in amount of immune-complexes related to autoimmune disease like SLE.
8. Anti-diabetic activity, anti-viral activity.\(^{[43]}\)

Pharmacological action according to Ayurveda: Shothahara, Vatanuloma,Kandughna, Chardinigrhan, Vranaropana, Dahashamaka, Jeevaniya.\(^{[44]}\)

Therapeutic action: Rasayana, Dagdha Vrana Ropak.\(^{[44]}\)

Anti-toxic action : It is one of the ingredients of anti-toxic preparation like Chandrodaya agada\(^{[33]}\), Dooshivishari agada\(^{[45]}\), Himavana agada\(^{[46]}\), Vishanashak yavagu\(^{[47]}\), Kashmaryadi pana\(^{[48]}\) used in Mandala Sarpa Visha, Vamana Yoga for Loota Visha\(^{[49]}\), it is content of Ashtam Vegnashak Yoga explained by Acharya Charaka\(^{[29]}\),Mrutsanjivana Agad\(^{[30]}\), Mahagandhahastinam agada\(^{[31]}\), Rushbhakadi Agada\(^{[9]}\), Ksharagada\(^{[11]}\), content of Dhatugat Vish Nashak Yoga\(^{[50]}\) and Loota Vishnashak Yoga\(^{[51]}\), Amrit Ghrita\(^{[52]}\), Mahagada\(^{[10]}\), Sanjivana Agada\(^{[26]}\),Mahasugandhinamak Agada\(^{[27]}\)
6. Draksha

Latin name: Vitis vinifera

Family: Vitaceae[^4]

Chemical constituent: Flavonoids, Kaempferol-3-0-glycosides, Quercetin 3-0-glycosides, Myricetin.[^53]

Pharmacological action
1. Antioxidant activity – grapes seed has anti toxicant and free radical scavenging activity.
2. Anticarcinogenic effect-Grape seeds resulted in highly effective protection against phorbol ester induced tumor promotion in chemical carcinogen initiated mouse skin.
3. Antimicrobial and antiviral activity – Its effect reported in component of grapes including gallic acid, hydroxycinnamic acids, flavanol-9
4. Cardio protective – provides significant cardio protection by improving post-ischemic ventricular recovery.
5. Anti-diabetic, Antitoxic, Anti-inflammatory, Anti-microbial[^54]

Pharmacological action according to Ayurveda: Kamalahara, Jwaraghna, Vataraktaghna, Trushnahara.[^53]

Therapeutic action: Swarya, Mutrala, Chakshushya, Vrushya, Bhedani, Saraka.[^53]

Anti-toxic action: It is one of the ingredient of Mandali Vishanashak Yoga[^55], it is used for Shankavisha treatment.[^56] Sugandhadi Agada[^57], used for Vishajanya Kasa, Shwasa, Hikka[^58] It is one of the content of Loota Vish Nashak Yoga.[^51]

7. HARENUKA

Latin name- Vitex Agnus-Castus Linn

Family- Verbenaceae[^5]

Chemical action – Castine[^59]

Pharmacological action
1. Antifungal activity- Antifungal activity seen in Candida species responsible of nosocomial infections.[^60]
2. Antioxidant activity-protection against oxidative stress and degenerative diseases, gallic acid showed strong antioxidant activity by preventing lipid per-oxidation.[^61]
Pharmacological action according to Ayurveda: Trushnahara, Kandughna, Vishahara, Dahahara.\(^{[59]}\)

Therapeutic action: Santambhana, Anulomaka, Mutrajanan, Shothaghna, Uttejaka.\(^{[59]}\)

Anti-toxic action: It is one of the ingredient of Rushbha Agada\(^{[9]}\), Sanjivana Agada\(^{[26]}\), Kalyanaka Sarpi\(^{[18]}\), Mahasugandhiraj Agadraj\(^{[27]}\), Ajeya Ghrita\(^{[25]}\), Lodhradi Agada\(^{[62]}\), Sugandhyakhya Agada\(^{[17]}\), Katukadi Agada\(^{[63]}\), Chandrodaya Agada\(^{[33]}\), Mrutasanjivani Agada\(^{[30]}\), Mahagandhhastinam Agada\(^{[31]}\), Ksharagada\(^{[11]}\), it is one of the content of Loota Vishnashak Yoga.\(^{[21]}\)

**Madhu (honey)**

According to Acharya Sushruta Madhu has Madhura Rasa, Kashaya Rasa
Guna-Ruksha, Lekhana, Shita.\(^{[64]}\)

According to Acharya Charaka Madhu has Kashaya Rasa
Guna –Ruksha, Tikshana, Kaphashamaka.\(^{[65]}\)

Pharmacological action: It has hygroscopic and fermentation property Antibacterial, Antidiarrheal. Used in obesity, skin disease, burns, wounds, cough.\(^{[66]}\)

Therapeutic action: Vishaghna, Krumighna, Vajikara, Vranaropana, Hrudya, Trushnashaman, Medohara, Shodhana.\(^{[67]}\)

Anti-toxic action: It is one of the constituent of anti-toxic preparation like Tarksya Agada\(^{[68]}\), Rishabha Agada\(^{[9]}\), Sanjivana Agada\(^{[26]}\), Mahasugandhi Agada\(^{[27]}\), Himvan Agada\(^{[46]}\), Padmakagada\(^{[35]}\), Mandar Agada.\(^{[20]}\)

**DISCUSSION**

*Manjisthadi Agad* contains 7 drugs. These drugs possess various medical properties like antibacterial, Anti-oxidant. So it can be used in the treatment of various disorders especially skin disorders. While explaining *Dushivisha Acharya* have mentioned some skin disorders also. It manifests due to *Asatmya Ahara-Vihara* and contact with different poisonous materials. These poisonous substance remains in the body for longer time and cause ill effect on immune system. Various drugs of *Manjisthadi Aagad* like *Haridra* has immuno-modulatory, anti-allergic, antiseptic properties. *Manjistha* act as a blood purifier and help in curing skin disease by counteract the adverse effect of *Visha*. *Ela* act as an antioxidant, antibacterial and
helps in regaining the original texture of skin. Jatamansi act on CNS and relives the stress. Yashtimadhu also act as anti toxicant, immunomodulatory, hepatoprotectory. Thus Manjisthadi Agad has Raktaprasadak, Kandughna, Vishaghna properties. All the ingredients of Manjisthadi Agad together helps in reducing the effect of Visha and act as a Vishaghna Kalpa. Most of the drug has Ushna Veerya so it can be used in Vata Kapha Janya Dushta Vyadhi such as Kushtha, Kanda, Shotha, Stambha. Madhur Rasa reduces the action of Visha so act as Vishaghna and Balya. Some of the drugs has Sheeta Veerya so it act on Visha.

CONCLUSION

Bharat Bhaishajya Ratnakara described Manjishthadi Agad. Most of the ingredients of Manjisthadi Agad can be used in skin diseases, gastric diseases, convulsions, fungal infections, burns because of Vishghna, Kandughna, Raktaprasadak, Dahashamak properties but for this further research and clinical trials are needed. The review of this article is to provide collective information on pharmacological, therapeutic and anti-toxic use of Manjisthadi Agad.

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