



Pharmacodynamics of *Panchatikta Guggulu Ghrita* in *Asthimajjagata Vata* with special reference to avascular necrosis of femoral head

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ABSTRACT

Avascular necrosis (AVN), is a condition that occurs when there is loss of blood supply to the bone, also known as osteonecrosis, bone infarction, aseptic necrosis, or ischemic bone necrosis. Based on pathogenesis and clinical sign and symptoms, it can be compared with *Asthimajjagata Vata*. One of the popular and frequently used medications in the Ayurvedic medical system is *Panchatikta Guggulu Ghrita*. *Panchatikta Guggulu Ghrita* has been described in *Astangahrudyam Vatavyadi Chikitsa Adhayayam* which is indicated in *Asthimajjagata Vata*. Here is an attempt made on pharmacodynamics of *Panchatikta Guggulu Ghrita* in respect of *Asthimajjagata Vata*.

KEYWORDS: *Asthimajjagata Vata*, Avascular necrosis of femoral head, *Panchatikta Guggulu Ghrita*

INTRODUCTION

There is no single pathogenic mechanism leading to avascular necrosis established in modern text. But there is most important known route cause of osteonecrosis/bone infarction is impaired vascular supply irrespective of cause, which can be considered as *Srotavrodha* (vascular obstruction) which may be due to vitiation of *Meda* and ultimately causes *Vata* vitiation. Factors responsible for vitiation of *Vata*, are ultimately responsible for *Asthidusthi* which causes cracking type of pain in bones and joints in the affected part with restriction of the movements. So, it is clear that *Vata* plays important role as *Vikaraprakrti* in AVN. Symptoms of *Majjadusthi* or *Majjagata Vata*, such as *Santata Ruk* (continuous pain), are

involved in the later stages of AVN if they are not addressed early. All of these factors may contribute to *Asthimajja Kshaya*, which results in the death of bone tissue and the collapse of bone leading to *Asthimajjagata Vata*. Therefore, avascular necrosis of femoral head can be clinically correlated with *Asthimajjagata Vata*.^[i]

Panchatikta Guggulu Ghrita is a polyherbal *Ghrita* preparation which is indicated in *Asthimajjagata Vata*^[ii]. The ingredients of *Panchatikta Guggulu Ghrita* have *Tikta Rasa*, *Ushna Virya*, and *Madhura* and *Katu Vipaka*. It may increase *Dhatwagni* and *Poshana* of all the *Dhatus*, especially *Asthi* and *Majja Dhatu* which controls *Asthi* and *Majja Kshaya* (the degeneration process). Hence, here an attempt has been made to

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understand the pharmacodynamics of the drug on avascular necrosis of femoral head. *Asthimajagata Vata* with special reference to

Table No. 1: Ingredients of Panchatikta Guggulu Ghrita:

S.N.	Drug	Latin Name	Part used	Quantity
KWATHA DRAVYA				
1.	<i>Nimba</i>	<i>Azadirachta indica</i> A. Juss	Stem Bark	1 Part
2.	<i>Guduchi</i>	<i>Tinosporacordifolia</i> Willd.	Stem	1 Part
3.	<i>Vasa</i>	<i>Justicia adhatoda</i>	Whole plant	1 Part
4.	<i>Patola</i>	<i>Luffa acutangula</i> Linn.	Whole Plant	1 Part
5.	<i>Kantakari</i>	<i>Solanum surattense</i> Burm. F.	Whole Plant	1 Part
KALKA DRAVYA				
1.	<i>Patha</i>	<i>Cissampelos parietata</i> Linn.	Root	1 Part
2.	<i>Vidanga</i>	<i>Embelia ribes</i> Burm. f.	Fruit	1 Part
3.	<i>Suradaru/Devadaru</i>	<i>Cedrus deodara</i> Roxb.	Hard wood	1 Part
4.	<i>Gajapippali</i>	<i>Piper chaba</i> Hunter	Fruit	1 Part
5.	<i>Yavakshara</i>	<i>Potassium carbonate</i>	-	1 Part
6.	<i>Svarjikshara</i>	<i>Sodium carbonate</i>	-	1 Part
7.	<i>Sunthi</i>	<i>Zingiber officinale</i> Rosc.	Rhizome	1 Part
8.	<i>Haridra</i>	<i>Curcuma longa</i> Linn.	Rhizome	1 Part
9.	<i>Mishi</i>	<i>Foeniculum vulgare</i>	Fruit	1 Part
10.	<i>Chavya</i>	<i>Piper Retrofractum</i> .	Stem	1 Part
11.	<i>Kushtha</i>	<i>Saussurea lappa</i> C.B. Clarke	Root	1 Part
12.	<i>Tejavati/Tumbaru</i>	<i>Zanthoxylum armatum</i> DC.	Fruit	1 Part
13.	<i>Maricha</i>	<i>Piper nigrum</i> Linn.	Fruit	1 Part
14.	<i>Kutaja</i>	<i>Holarrhena antidysenterica</i> Wall	Stem Bark	1 Part
15.	<i>Dipyaka/Jiraka</i>	<i>Cuminum cyminum</i>	Fruit	1 Part
16.	<i>Chitraka</i>	<i>Plumbago zeylanica</i> Linn.	Root	1 Part
17.	<i>Katuki</i>	<i>Picrorhiza kurroa</i> Royle ex Benth	Root/Rhizome	1 Part
18.	<i>Bhallataka-Suddha</i>	<i>Semecarpus anacardium</i> Linn.	Fruit	1 Part
19.	<i>Vacha</i>	<i>Acorus calamus</i> Linn.	Rhizome	1 Part
20.	<i>Pippalimoola</i>	<i>Piper longum</i>	Root	1 Part
21.	<i>Manjistha</i>	<i>Rubia cordifolia</i> Linn.	Root	1 Part
22.	<i>Ativisha</i>	<i>Aconitum heterophyllum</i> Wall.	Root Tuber	1 Part
23.	<i>Yavani</i>	<i>Trachyspermum ammi</i> Linn.	Fruit	1 Part
24.	<i>Shuddha Guggulu</i>	<i>Commiphoramukul</i> Engl.	Gum-resin	20 Part
SNEHA DRAVYA				
1.	<i>Shuddha Goghrita</i>	-	Quantity: ¼ times to prepared decoction	

Method of preparation of panchatikta guggulu ghrita^[iii]

Ref- Ashtanga hridaya, Chikitsasthana.21/57-59, as per AFI

1. *Nimba* 480g
2. *Guduchi* 480g
3. *Vasa* 480g
4. *Patola* 480g
5. *Kantakari* 480g
6. Water for decoction 12.288lt
7. *Ghrita* (*Go ghrita*) 768g
8. *Kalka Dravya*

Each of the following herbs should be taken in 12gm doses: *Patha*, *Vidanga*, *Suradaru* (*Devadaru*), *Gajapippali* *Yavakshara*, *Sarjikshara*, *Shunti*, *Haridra*, *Mishi*, *Chavya*, *Kushta*, *Tejavati*,

Maricha, *Kutaja*, *Dipyaka*, *Chitraka*, *Katuka*, *Bhallataka* *Suddha*, *Vacha*, *Pippalimool*, *Manjistha*, *Ativisa*, *Yavani*.
9. *Guggulu- Shudda* 240g

The aforementioned medications, numbered from 1 to 5, are taken in water in the prescribed amount, boiled, and reduced to 1/8th, or 1.536 litre, before being filtered. Then, 5 Pala (240gm) of *Shuddha Guggulu*, 1 *Prastha Ghrita* (768gm), and 1 *Karsha* (12gm) of *Kalka Dravya* are added, and the mixture is heated over a low flame on a *Mandagni* till *Sneha Siddha Lakshanas* are attained. By using the *Dola Yantra* method, *Guggulu* should be hung in the *Kwatha* (decoction) as it boils.

Table No. 2: Properties of ingredients of Panchatikta Guggulu Ghrita

Property	Drava Dravya	Ghrita	Guggulu
Rasa	Tikta	Madhura	Katu
Guna	Laghu, Ruksha	Snigdha	Laghu, Sukshma, Teekshna, Snigdha, Sara ^[iv]
Vipaka	Katu	Madhura	Katu
Veerya	Ushna	Sheeta	Ushna
Doshaghnata	Kapha Vatashamaka	Vatapittahara ^[v]	Tridosha hara ^[vi]
Karma	Vishagna, Krimigna, Lekhana, Jwa-ragna, Deepana, Pachana, Stanyasho-dhana, Upashoshana of kleda-medavasa-majja-laseeka-pooya-swedamootra-pureesha-pitta-shleshma, Moorcha-daha-kandu-kustatrishnaprashamana.	Smruti-buddhi-agni-shukra-kapha-medovardhaka Visha-Unmada-Shosha-Jwarahara ^[v]	Swarya, Rasayana, Balya, Medomeshma

Mode of action of Panchatikta Guggulu Ghrita:

Tikta Rasa, Ushna Virya, and Katu Vipaka, which are prevalent in Panchatikta Guggulu Ghrita, promote Deepana-Pachana, raise Dhatvagni, and provide nutrition and stability to all Dhatus, particularly Asthi and Majja Dhatu. Vayu and Akasha Mahabhuta, which are dominant in Asthi, are in Tikta Rasa. As a result, it is drawn to bodily components like Asthi. Vata-pittashamaka, Balya, Agnivardhaka, Madhura, Saumya, Sheeta Virya, Shula, Jwarahara, Vrishya, and Vayasthapaka are other components of Ghrita. As a result, it calms Vata, improves the overall health of the body, and revitalises the body, helps in Samprapti Vighatana of Asthi-Majjagata Vata. Ghrita has qualities like Yogavahi, which helps to increase the bioavailability of various medications without affecting its own properties..

Guggulu is one of the principal Vatashamaka Dravya due to its Ushna characteristic. It functions as a Medohara because of its Ruksha and Vishada Guna. It functions as a Deepana because of its Katu Rasa helping to improve the patient's overall condition in the process. Old Guggulu also functions as a Rasayana, which may help avoid any deteriorating bodily changes. It has been discovered that the Panchatikta Guggulu Ghrita overall effect is dominated by Ushna Virya and aids in calming elevated Vata. Vata is completed by Snehana, who also softens the body and eliminates the accumulated Malas.

DISCUSSION

Avascular necrosis (AVN) is characterised by the cellular death of bone constituents brought on by a disruption in the blood supply. The collapse of the bone structures causes the destruction of bone, discomfort, and loss of joint function. Avascular necrosis is not specifically mentioned in Ayurveda, however based on clinical presentation, Vata

Dosha and the Vikruti of Asthi Dhatu, which followed by Majja Dhatu, are more prevalent. In AVN, blood flow (Rakta Dhatu) to the femoral head is reduced as a result of Margavrodha (blood vessel obstruction) or Abhighata (trauma), which finally results in necrosis. Both Margavrodha and Abhighata contributed to the deterioration of Vata Dosha, which eventually led to the loss of Asthi Dhatu.

A compound formulation called Panchatikta Guggulu Ghrita, which have Tikta Rasa, Ushna Virya, Madhura, and Katu Vipaka properties, promotes the regular operation of the Dhatvagni and enables enhanced nutrition for the Asthi Dhatu. As a result, it balances Vata, enhances Dhatu Upachaya, and revitalises the body. Vata is calmed, Dhatu Upachaya is enhanced, with Ghrita which also functions as a Rasayana as a result of its Vata-Pitta Shamaka, Rakta Prasadaka, Balya, Agnivardhaka, Madhura, and Shita Virya qualities. Since Asthi is Khara by nature, using medications with qualities like Snigdha, Shoshana, and Khara would help control Vata and make Asthi Vridhi^[vii]. The attributes of Panchatikta Guggulu Ghrita include Snigdha, Shoshana, and Khara. Ghrita acquires Snigdha Guna, Tikta Rasa acquires Shoshana Guna, and Guggulu acquires Khara Guna.

CONCLUSION

Based on above said pharmacodynamics action of Panchatikta Guggulu Ghrita, it can be concluded that it is beneficial in treating Asthimajjagata Vata.

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