

RELEVANCE OF GAMBHIRA (DEEP-SEATED) VATARAKTA WITH CHRONIC TOPHACEOUS GOUT- CONCEPTUAL REVIEW

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ABSTRACT

Gambhira Vatarakta is one of the Chronic Deep- Seated musculoskeletal system (*AsthiSandhi Vaha Srotos*) disease characterised by swelling (*shwayathu*), pain (*ruka*) and burning sensation (*daha*) in joints. The *Nidanas* responsible for *Vatarakta* are *Sukumara*, *Mithya Ahara Vihara* and other *nidanas* mentioned in *Vatarakta Charak Chikitsa Sthan* chapter. Due to excessive usage of *Nidanas Vata dosha* vitiates *rakta*, further obstructs the path of *vata* that's why disease is called *Vatarakta*. *Vatarakta* is of two types *Uttana* and *Gambhira*. *Uttana Vatarakta* primarily affects *Twacha* and *Mansa Dhatu*. *Gambhira Vatarakta* affects *Asthi*, *Sandhi* and *Majja dhatu* involving deeper tissues. There is no treatment for *Vatarakta* equal to or superior to *Basti*. The site of affliction of *Vatarakta* are hands, feet, fingers and all other joints. At first it settles in hands and feet and then spread all over the body. *Gambhira Vatarakta* resembles Tophaceous gout is a chronic, progressive manifestation of hyperuricemia characterized by Mono sodium urate crystal deposition in soft tissues and joints throughout the body. The initial attack (flare) of gout is usually monoarticular and often involves the first metatarsophalangeal joint. Hyperuricemia (serum urate > 6.8 mg/dL [> 0.4 mmol/L]) is almost always present. Definite diagnosis requires identification of crystals in synovial fluid. Treatment of acute flares is with anti-inflammatory drugs. Acute flares can be treated with nonsteroidal anti-inflammatory drugs (NSAIDs), colchicine, glucocorticoids, and/or occasionally IL-1 inhibitors (eg, anakinra). Long-term management to prevent recurrent flares involves persistent lowering of the serum urate level below its saturation level (< 6.8 mg/dL [< 0.4 mmol/L]) with allopurinol, febuxostat, or uricosuric drugs such as probenecid.

KEY WORDS: *Vatarakta*, *Gambhira*, *Mithya Ahara Vihara*, *Basti*, Tophaceous Gout

INTRODUCTION

Gambhira Vatarakta is an important chronic musculoskeletal disease (*AsthiSandhivaha Sroto Vyadhi*) and clinical condition described in *Ayurvedic* classics under the classification of *Vatarakta*. It is characterized by the simultaneous vitiation of *Vata Dosha* and *Rakta Dhatu*, leading to pathological changes in deeper tissues, particularly the joints and associated structures. The term *Gambhira* signifies deep-seated involvement, while *Vatarakta* indicates the pathological association between aggravated *Vata Dosha* and vitiated *Rakta Dhatu*. In *Gambhira Vatarakta*, the morbid *Doshas* affect deeper tissues, resulting in severe pain, swelling, burning sensation, stiffness and restricted movements of the affected joints. *Gambhira Vatarakta* correlates Tophaceous Gout presents with severe, chronic form of gout characterized by the formation of uric acid crystal deposits called tophi in joints and soft tissues.

SYNONYMS OF *VATARAKTA*

Khuda, Vatashonita, Vatabalasa and Adhyavata

वातशोणितम्, खुडं वातबलासाख्यमाढ्यवातं च नामभिः

येन वातरक्तं वातस्य रक्तस्य च दुष्ट्या जायते; न्यायचन्द्रिका व्याख्या (गयदास कृत)¹

“*Vatarakta* is a disease that arises due to the vitiation of both *Vata Dosha* and *Rakta Dhatu*.”

अग्निमारुततुल्यस्येत्यनेन वातरक्तस्य दुर्निवारत्वं शीघ्रकारित्वं चाह आयुर्वेददीपिका व्याख्या (चक्रपाणिदत्त कृत)²

Vatarakta is compared to the combination of fire and wind to emphasize that the disease is difficult to restrain and progresses rapidly.

CLASSIFICATION OF *VATARAKTA*

VATARAKTA

Classical classification

- ✓ Based on site and depth (*Adhishthana Bheda*)-
Uttana (*Twak and Mamsa*) , *Gambhira* (*Deeper tissues, Asthi and Sandhi*)
- ✓ Based on predominant Dosha (*Dosha Pradhanya*)-
Vataja, *Pittaja*, *Kaphaja*, *Raktaja*, *Dvandvaja*, *Sannipataja*

DESCRIPTION OF *VATARAKTA* IN *SAMHITA*

SAMHITA PERIOD (2000 B.C.-800 A.D.)- The main classical text of this era is *Brihatrayi*. Entire aspect of the illness *vatarakta* from etiology to treatment is described at full length in the books of *samhita kala* as follows:

CHARAKA SAMHITA: (2000 B.C.)- *Vatarakta* explained in 29th chapter of *Chikitsa sthana* “*Vatashonita chikitsam Vyakasyam*”.

SUSHRUTA SAMHITA: (1000-1500 B.C.)- Sushruta samhita's understanding of *Vatarakta* is different regarding its types. It states that the *Uttana* and *Avagadha Vatarakta* are not the types of this illness rather they are its *avasthavishesh*. In *Sushruta Samhita*, the disease has been described in 2 chapters, under *Vatavyadhi Nidan sthana* 1st Chapter and *Mahavatavyadhi Chikitsa sthana* 5th chapter where all aspects of disease are described in detail.

BHELA SAMHITA (1000 B. C.)- In Bhela Samhita Chikitsa sthan, brief description of *vatarakta* is found in chapter 15 i.e. *Visarpa Vatashonita adhyaya* and in chapter 24 i.e. *vatavyadhi chikitsit adhyaya*.

HARITA SAMHITA (1000 B.C.)- The disease is mentioned in *Harit Samhita*, *Tritiya sthana* chapter 23, after ‘*Gridhrsi chikitsa Adhyaya*’, where the etiology and symptoms have been described briefly along with the use of internal as well as external medication.

ASHTANGA SAMGRAHA (400 A.D) / ASHTANGA HRIDAYA (500 A.D.)- In *Ashtanga Samgraha* (*Vatashonita nidana adyaya*” & *Vatashonita Chikitssthana*, 16th & 24th chapter) & *Ashtanga Hridaya* (“*Vatashonita Nidana Adyaya*” & “*Vatashonita chikitsa Adyaya*” 16th & 22nd chapter respectively) elaborate description about *Nidana*, *Samprapti*, *Bheda*, *Upadrava*, *Sadhya-asadhyatva*, *Pathya-Apathya*, *Chikitsa sutra* & *Chikitsa* is available in these texts.

ASHTANGA HRIDAYA has also added the management of *Sama* and *Nirama* stage of *Vatarakta*. In ayurveda dipika few lines of *Kharanada Samhita* is quoted in relation to types of *Vatarakta*. In this context it is said that *Kharanada Samhita* accepts 36 types of *Vatarakta*. *Nidana*, *Samprapti*, *Lakshana*, *Sadhya-asadhyata* & *Chikitsa* of *Vatarakta* in full length in *Gadnigraha*.

MADHAVA NIDAN (800 A. D.)- *Madhava* explains *Vatarakta Nidana*, *Samprapti*, *Purvarupa*, *Upadrava* and *Asadhya lakshana* in chapter 23rd “*Vatarakta Nidana*”.

CHAKRADATTA(1100A.D.)- *Chakradatta* in 23rd chapter “*Vatarakta chikitsa*” has explained both *Bahya* & *Abhyantara Chikitsa* like *Kwatha*, *Churna*, *Ghrita*, *Taila* & *Guggulu Kalpa*.

SHARANGDHAR SAMHITA (1300A.D.)- *Saptamadyaya* “*Roga Ghanna*” of *Purvakhanda* explains about the *saptaprakara* of *Vatarakta* as *Vataja*, *Pittaja*, *Kaphaja*, *Raktaja*, *Samsargaja* & *Sannipataja*. While explaining *Niruha Basti*, *Vatarakta* is mentioned as one of the conditions for *Niruha Basti* in the 6th chapter.

BHAVA PRAKASHA (1500 A.D.)- In *uttarardha* 29th chapter “*Vatarakta adikara*”, *Acharya* has explained all about *Nidana*, *Samprapti*, *Purvarupa*, *Rupa*, *Bheda* & *Chikitsa*.

YOGA RATNAKARA (1600 A.D.)- In *Yoga Ratnakara*, *Purvaardha*, under *Vatarakta Nidana*. *Acharya* has explained details of *Nidana*, *Samprapti*, *Purvarupa*, *Dosha-pradhana rupa*, *Upadrava* & *Asadhya lakshana* of *Vatarakta*. While under *Vatarakta chikitsa*, *Acharya* has explained separate combinations like *Kwatha*, *Guggulu*, *Taila*, *Ghrita* and *Rasa*.

BHAISHJYA RATANAVALI (1600 A. D.)- In “*Vatarakta chikitsa prakrana*” chapter 27th, description about *Samprapti*, *Bheda*, *Pathya-apathya*, and *Chikitsa* is available.

NIDANA OF GAMBHIRA VATARAKTA³

AHARAJ NIDANA- unhealthy foods and activities (*Mithya Ahaar Vihara*), long-standing diseases, who drink wine or other alcoholic beverages in excess, who indulge in foods and activities which are opposite to the nature of the seasons and accustomed ones (foods and activities), those who have been administered with improper oleation and other therapies,

- ✓ Excess intake of salty, sour, pungent, alkalies and fatty substances, cake of oil seeds after extraction of oil (*pindyaka*), radish (*Raphanus sativus*), red gram, black gram, green vegetables, *palala* (grated flesh), sugarcane, curd, sour gruel, *sauvira* and *shukta* (vinegar), butter milk, *sura* and *asava* (alcohol and medicinal preparations having high concentration of alcohol),
- ✓ The delicate persons who are indulged in sweet and delicious food substances and are not in habit of physical activities, the *vata* and *shonita* vitiate. Due to injuries, not purifying the body (by *shodhana karma*) and indulged in consuming astringent, pungent, bitter, *ruksha* food items (grains of low nutritional content), starvation.

VIHARAJ NIDANA- long distance walking and sexual indulgence, who excessively indulge in physical activities, anger, sleeping in daytime and vigil during the night,

- ✓ who abstain from copulation and who are obese, traveling by horses, camels and carts, sporting in water, jumping, leaping, excessive walking in hot season, excessive sexual intercourse,
- ✓ in those of tender constitution and physique (*Sukumara*) and suppression of natural urges are responsible for vitiation of *vata*.

PREMONITORY SYMPTOMS/POORVAROOPA⁴

- ✓ There is excessive or absence of perspiration, (*svēdō'tyartham na vā*)
- ✓ blackishness of the body, (*kārṣṇyam*)
- ✓ poor or lack of tactile sensation, (*sparsājñatvam*)
- ✓ high intensity of pain on trauma, (*kṣatē'tiruk*)

- ✓ laxity of joints, lassitude, (*sandhiśaithilyam*)
- ✓ malaise, (*ālasyaṁ*)
- ✓ appearance of boils, (*piḍakōḍgamah*)
- ✓ feeling of heaviness, (*gurutvaṁ*)
- ✓ Pain in knee, thigh, waist, shoulder, hands, legs and other joints of the body, (*jānujaṅghōrukaṭyaṁsahastapādāṅgasandhiṣu nistōdah*)
- ✓ discoloration of body, (*vaivarnyam*) appearance of *mandala* (circular skin lesions) are the premonitory symptoms of *Vatashonita*.

CLINICAL FEATURES OF GAMBHIRA VATARAKTA (DEEP TYPE)⁵

Symptoms of *Gambhira Vatashonita* are –

- ✓ edema in the involved parts of the body, (*śvayathuḥ*)
- ✓ stiffness of joints, (*stabdhaḥ*)
- ✓ hardness of the part, (*kaṭhinō*)
- ✓ severe pain inside, (*ntarbhṛśārtimān*)
- ✓ the color of the part involved becomes either blackish or coppery, (*Shyavastamro~Athava*)
- ✓ burning sensation (*Daha*), pricking pain, (*toda*) fasciculation (*Sphurana*) and finally the part become inflamed and ulcerated (*pakavan*).
- ✓ When *vata* reaches *sandhi*, *asthi dhatu*, and *majja dhatu* (joints, bones and bone marrow) it causes severe pain and burning sensation. (*Rugvidahanvito~Abhikshnam Vayuh Sandhyasthimajjasu*).
- ✓ The forcefully moving *vayu* having reached the joints causes cutting nature of pain whereby making them crooked, produces limping or lameness while moving all over the body. (*Karoti Kha~Jjam Pa~Ggum Va Sharire Sarvātashcaran Sarvairli~Ggaishca Vij~Jeyam Vātasrugubhayashrayam*)

SHADKRIYAKALA OF VATARAKTA

<i>Shadkriyakala</i>	Pathogenesis in <i>Vatarakta</i>	Clinical manifestations
<i>Sanchaya</i>	Accumulation of <i>Vata Dosha</i> due To <i>Vata</i> -provoking <i>Nidana</i> and initiation of <i>Rakta Dushti</i> due to <i>Mithya Ahara vihaar</i> (improper dietary and lifestyle habits).	Mild discomfort, occasional stiffness and nonspecific symptoms.
<i>Prakopa</i>	Further aggravation of <i>Vata</i> and <i>Rakta</i> due to continuous exposure to causative factors.	Intermittent pain, mild burning sensation, tingling and discomfort in extremities.
<i>Prasara</i>	Aggravated <i>Vata</i> and vitiated <i>Rakta</i> spread through their respective <i>Srotas</i> . <i>Rakta</i> begins to obstruct the normal movement of <i>Vata</i>	Migratory pain, tingling sensation, occasional redness and burning sensation.
<i>Sthanasamshraya</i>	Vitiated <i>Vata</i> and <i>Rakta</i> localize in susceptible sites, particularly <i>Hasta</i> , <i>Pada</i> and <i>Sandhi</i> , resulting in <i>Dosha-Dushya Sammurchhana</i> .	Appearance of <i>Purvarupa</i> such as <i>Kandu</i> , <i>Daha</i> , <i>Toda</i> , <i>Sphurana</i> and mild pain.
<i>Vyakti</i>	Complete manifestation of <i>Vatarakta</i> due to established pathological interaction between <i>Vata</i> and <i>Rakta</i> .	<i>Ruja</i> , <i>Shotha</i> , <i>Raga</i> , <i>Daha</i> , <i>Toda</i> , <i>Sparshasahatva</i> and restricted joint movements.

<i>Bheda</i>	Further progression of the disease with deeper tissue involvement and development of complications.	Chronic joint involvement, deformity, stiffness, restricted mobility and <i>Gambhira Vatarakta</i> manifestations.
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SAMPRAPTI/ PATHOGENESIS OF GAMBHIRA VATARAKTA

✓ Due to etiological factors, The *Vata* thus aggravated quickly causes vitiation of *Rakta*. This *Rakta* in turn obstructs the path of *Vata*. The *Vata* undergoing great aggravation due to its path being obstructed by blood, causes great vitiation of the blood. In this disease, the vitiated *rakta* is combined with greatly aggravated *vata* wherein *vata* is very predominant. Therefore, this disease is called *Vatarakta*. Similarly, when aggravated *pitta* combines with vitiated blood it will be known as *Pittarakta*. Also, the aggravated *kapha* combined with vitiated blood will cause a condition called *Kapharakta*.

SAMPRAPTI GHATAKA OF VATARAKTA

SAMPRAPTI GHATAKA	DESCRIPTION
<i>Dosha</i>	<i>Vata Pradhana Tridosha</i>
<i>Dushya</i>	<i>Rakta Pradhana, Twak, Mamsa</i>
<i>Agni</i>	<i>Jatharagni and Dhatvagni Mandya</i>
<i>Ama</i>	<i>May be associated, depending on the condition</i>
<i>Srotas</i>	<i>Raktavaha, Rasavaha</i>
<i>Srotodushti Prakara</i>	<i>Sanga and Vimargagamana</i>
<i>Udbhava Sthana</i>	<i>Pakwashaya (Vata), Yakrit and Pleeha (Rakta)</i>
<i>Adhishthana</i>	<i>Rakta Dhatu and Sandhi</i>
<i>Vyaktasthana</i>	<i>Hasta, Pada, Anguli Sandhi and other joints</i>
<i>Rogamarga</i>	<i>Madhyama Rogamarga (particularly Gambhira Vatarakta)</i>
<i>Dosha-Dushya Sammurchhana</i>	<i>Vitiated Vata and Rakta</i>
<i>Vyadhi Swabhava</i>	<i>Chirakari (chronic tendency)</i>

CHIKITSA OF GAMBHIRA VATARAKTA

In *Gambhira Vatarakta* if blood is vitiated severely, it should be treated like *vāta* first and there after steps should be taken to pacify *Vatarakta*. C.CHI.29/160

SNEHANA	✓ <i>Shatavari Ghrita, Amritadya Ghrita, Sravani Ghrita, Baladi Ghrita, Parushaka Ghrita, Jivaniya Ghrita, Gudaghrita</i>
MRDU VIRECHANA	✓ <i>Eranda taila (castor oil) with milk</i> ✓ Decocotion of <i>Abhaya (Terminalia chebula)</i> fried with ghee of <i>trivrita churna</i> (powder of <i>Operculina turpethum</i>) taken either with milk or grape juice

	✓ Decoction of <i>Kashmarya</i>, <i>trivrita</i>, <i>draksha</i> and <i>parushaka</i> (<i>Grewia asiatica</i>) added with salt and honey should be given. ✓ Decoction of <i>Triphala</i> added with honey ✓ Decoction of <i>Amalaki</i>, <i>Haridra</i> and <i>Musta</i> added with honey to the patients of <i>kapha</i> predominant <i>Vatarakta</i>
KWATHA	<i>Amritadi Kwath</i> , <i>Vatsadni Kwath</i> , <i>Vasadi Kwath</i> , <i>Patoladi Kwath</i> , <i>Pathya Kwath</i> c.chi 29, <i>Shampakadi(Aragwadha)Kwath</i> ⁶ , <i>Ashwattha Kwath</i> <i>Kokilakshadi Kwath</i> , <i>Navakarshika kwath</i> , <i>Ashwathha Kwath</i>
GUGGULU	<i>Kaishore Guggulu</i> , <i>Amrita Guggulu</i> , <i>Punarnava Amrita Gugglu</i> , <i>Rasabhara Guggulu</i>
CHOORNA	<i>Godhumadi Churna</i> , <i>Munditikadi Churna</i> , <i>Guduchi Churna</i>
TAILA used for <i>basti</i> (enema) or <i>nasya</i> (nasal medication), <i>abhyanga</i> (massage) and <i>parisheka</i> to alleviate <i>daha</i> (burning sensation) and pain	✓ <i>Madhuparnyadi tailam</i>, <i>Sukumaraka tailam</i>, <i>Amritadya tailam</i>, <i>Mahapadma tailam</i>, <i>Khuddaka padmaka tailam</i> ✓ <i>Shatapaki madhuka tailam</i>⁷, <i>Sahastrapaki bala tailam</i>, <i>Dashpaka Bala Taila</i>, <i>Nagabala taila</i>, ✓ Oil cooked with the juice of the <i>guduchi</i> and milk or with grape juice or with the juice of <i>madhuka</i> and <i>kashmarya</i> alleviates <i>vatarakta</i>. ✓ <i>Pinda tailam</i>, <i>Maha pinda tailka</i>, ✓ <i>Dashamula</i> processed milk: The milk boiled with decoction of <i>dashamula</i> alleviates pain immediately. ✓ <i>Tila Kalka</i> along with milk ✓ <i>Guduchi Taila Laghu</i> ✓ <i>Maharudra Guduchi Taila</i> ✓ <i>Vishtinduka Taila</i> ✓ <i>Rudra Taila</i> ✓ <i>Maharudra Taila</i>
RAKTAMOKSHANA JALAUKA , SHRINGA (animal horn) or ALABU (hollow gourd) THERAPY	✓ If patient is suffering from discomfort, burning sensation, pain and pricking sensation then bloodletting should be done by <i>Jalauka</i>. ✓ If the patient is suffering from tactile dysfunction, itching and tingling then blood should let out with either <i>shringa</i> (animal horn) or <i>alabu</i> (hollow gourd)
SIRAVEDHA	<i>Sarva Sharira</i>
BAHYA UPACHARA	<i>Abhyanga</i> , <i>Parisheka</i> , <i>Pradeha</i>

RASA AUSHADHI	<i>Vataraktantaka Rasa, Vishveshwar Rasa, Dwadasha Aayasa, Guduchyadi Loha, Pittantaka Loha, Langaladya Loha, Shilajatu along with Guduchi Kwath, Tala Bhasma, Mahataleshwara Rasa, Sarweshwara Rasa, TamraTala prayoga with rasagandhak and incinerated many times is best medicine for Vatarakta.</i>
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- ✓ *Anuvasana basti* (unctuous enema) and *Niruha basti* (enema made from decoction of medicinal herbs).
- ✓ Besides fomentation, massage, ointments, food and *sneha* (unctuous substances) be given to the patient which do not cause burning sensation.
- ✓ *Bhedana*(incision), *Shodhana* (cleansing) and *Ropana* (healing) advised in case of *daha* associated with *rakta* and *pitta*.
- ✓ For external *Vatarakta*, apply poultices (*Lepa*), massages (*Abhyanga*), fomentation (*Seka*), and suitable internal medications (*Pana*).
- ✓ For deep-seated *Vatarakta*, perform purgation (*Virechana*), therapeutic enemas (*Aasthapana*), and administer medicated oils or *ghritas* internally (*Snehapana*).
- ✓ If the patient is suffering from *JanuVatarakta*, Consume one or two *haritaki* fruits along with jaggery followed by *Guduchi* Decoction.

PROGNOSIS (*SADHYASADHYATA*)

- ✓ When there is recent onset and predominance of single *dosha*, *Vatashonita* is *sadhya* (curable). The disease arising from predominance of two *dosha* is *yapya* (palliable). The disease arising from predominance of all three *dosha* and has developed *upadrava* (complications) as well, is *Asadhya* (incurable).
- ✓ *Vatarakta* is incurable if it has cracked up to the knees, is fissured, or discharging, or is associated with complications like loss of vital energy and muscle wasting. If it has lasted for a year, it is considered manageable (*Yapya*).

COMPLICATIONS (*UPDRAVA*) OF *VATARAKTA*

CLINICAL SYMPTOMS	PSYCHOLOGICAL SYMPTOMS
Anorexia, dyspnea, gangrene (<i>mansa kotha</i>)	Insomnia
stiffness in the head	If mental confusion alone- disease is incurable (<i>Asadhya</i>)
stiffness in <i>marma</i> (vital part of the body)	Mental confusion (<i>moha</i>)
Narcosis	Giddiness (<i>Bhrama</i>), Exhaustion (<i>Klamah</i>)
crook like deformity of fingers (<i>Anguli vakrata</i>), Appearance of burning blisters (<i>Sphota Daha</i>), stiffness in <i>marma</i> (<i>Marma graha</i>), Appearance of tumors (<i>Arbuda upadrava</i>)	Damage to the senses (<i>Indriyatpanam</i>)

SADHYA- ASADHYATA (PROGNOSIS)

- ✓ The patient should not be treated if there is profuse discharge from the ulcer, discoloration, stiffness, the lesion has become like tumor, constriction of the part and damage to the senses.

PATHYA APATHYA FOR VATARAKTA

PATHYA	APATHYA
✓ CEREALS :Old barley, wheat, <i>nevara</i>, <i>shali</i> and <i>shashtika dhanya</i> (special qualities of red rice) ✓ MANSARASA: soup of flesh of <i>vishkira</i> (birds which scratch the ground) and <i>pratuda</i> (birds which pick the food and eat like pigeon) ✓ PULSES: soup of pulses, pea, bengal gram, lentils and <i>makushtha</i> (<i>motha</i>) can be taken by adding plenty of ghee, by the patients of <i>Vatarakta</i>.	<i>Nidaana</i> described in <i>Vatarakta</i> Chapter
✓ VEGETABLES: Green vegetables like <i>sunishnaka</i> (<i>Marsilia minula</i>), <i>vetagra</i> (new buddings of <i>Salix caprea</i>), <i>kakmachi</i> (<i>Solanaum nigrum</i>) buddings of <i>shatavari</i> (new buddings of <i>Asparagus racesmosa</i>), <i>vastuka</i> (<i>Chemopodium album</i>), <i>upodika</i> and <i>sauvarchala</i> (<i>Gynandropis pentaphylla</i>), cooked with either ghee or ✓ DAIRY PRODUCTS: intake of milk of cow, buffaloes, or goats is beneficial.	✓ abstain from day sleep, exposure to heat, excessive physical exertion ✓ coitus, eating of pungent, salty, sour, <i>Ushna</i>, <i>Guru</i> (difficult to digest) and <i>Abhishyandi</i> food substances.

IMPORTANCE OF BASTI

- ✓ *Mala* (excrements) of the patients of *Vatarakta* should be eliminated by administrating *basti* (enema) of *ksheera* (milk) mixed with *ghrita*.
- ✓ There is no treatment of *Vatarakta* efficient as *basti*.

CHRONIC TOPHACEOUS GOUT⁸

- ✓ A severe form of inflammatory arthritis that typically develops after 10 years or more of untreated or poorly controlled hyperuricemia (blood uric acid levels above 6.8 mg/dL).

- ✓ Tophaceous gout is a severe form of arthritis that develops in people with chronic, untreated gout. Growths, known as tophi, develop when uric acid crystals form masses around affected joints and soft tissues. These growths are often visible under the skin and can cause pain, swelling, and deformity in the feet, particularly around the toes and ankles. Over time, tophi can damage joints, reduce mobility, and even lead to disability.
- ✓ Tophaceous Gout is caused by high levels of uric acid in the blood, which forms sharp crystals that trigger inflammation.
- ✓ Risk factors include a family history of gout, excessive alcohol consumption, obesity, and medical conditions like diabetes or high blood pressure. While medications to lower uric acid levels are effective in managing the condition, surgery may be required for large, painful tophi.
- ✓ Tophaceous gout—the severe chronic form of gout characterized by hard urate crystal deposits (tophi)—is a treat-to-target urate-lowering therapy (ULT) combined with long-term anti-inflammatory prophylaxis⁹.
- ✓ The spontaneous onset of excruciating pain, edema, and inflammation in the metatarsal-phalangeal joint of the great toe (podagra) Other than the great toe, the most common sites of gouty arthritis are the instep, ankle, wrist, finger joints, and knee.

PATHOGENESIS OF TOPHACEOUS GOUT¹⁰

Tophaceous gout develops due to prolonged hyperuricemia leading to monosodium urate crystal deposition, activation of the inflammasome-mediated inflammatory pathway, granulomatous tophus formation, and progressive osteoarticular destruction.

Hyperuricemia



Supersaturation of urate in body fluids



Monosodium urate crystal precipitation



Crystal deposition in joints and soft tissues



Activation of NLRP3 inflammasome



IL-1 β release & neutrophilic inflammation



Recurrent gout attacks



Persistent crystal accumulation



Granulomatous foreign-body reaction



Tophus formation



Cartilage destruction + Bone erosion



Chronic tophaceous gout

INVESTIGATION:

- ✓ **Synovial Fluid Analysis / Tophus Aspiration:** The gold standard is joint aspiration or sampling chalky material from a tophus, examined under Polarized Light Microscopy to find needle-shaped, Negatively Birefringent Urate Crystals. Arthrocentesis also helps rule out a co-existing bacterial/septic infection.
- ✓ **Serum Uric Acid Blood Test:** Measures blood uric acid levels (typically elevated above 6.8–7.0 mg/dL in hyperuricemia), though levels can occasionally be normal or drop during an acute flare.
- ✓ **Plain Radiography (X-ray):** Shows classic structural changes such as Juxtaarticular Erosions with overhanging or "punched-out" edges (rat-bite erosions) and soft-tissue swelling from tophi.
- ✓ **Musculoskeletal Ultrasound:** Detects the Double Contour Sign (urate crystals coating the surface of hyaline cartilage), joint effusions, synovial hypertrophy, and echogenic tophi.
- ✓ **Dual-Energy CT (DECT):** Provides non-invasive, color-coded visualization and differentiation of monosodium urate crystal deposits in joints and soft tissues.

DIFFERENTIAL DIAGNOSIS

- ✓ Rheumatoid Arthritis (RA)
- ✓ Pseudogout (Calcium Pyrophosphate Deposition Disease - CPPD)
- ✓ Septic Arthritis
- ✓ Sarcoidosis (Acute / Chronic)
- ✓ Psoriatic Arthropathy
- ✓ Amyloidosis
- ✓ Calcific Periarthritis / Tendinitis
- ✓ Multicentric Reticulohistiocytosis

COMPLICATIONS

- ✓ Bone and Joint Destruction
- ✓ Reduced Range of Motion and Disability
- ✓ Nerve Compression and Entrapment
- ✓ Ulceration and Draining Sores
- ✓ Secondary Infections and Sepsis
- ✓ Kidney Damage and Renal Failure
- ✓ Organ and Soft Tissue Involvement

MANAGEMENT OF TOPHACEOUS GOUT

Urate-Lowering Therapy (ULT) — The Core Treatment

The goal is to lower serum uric acid (SUA) well below saturation levels so that existing monosodium urate crystals and tophi can gradually dissolve over months to years.

- ✓ **Xanthine Oxidase Inhibitors:** Medications like Allopurinol (starting at a low dose and gradually titrating up) or febuxostat are first-line to reduce uric acid production. For tophaceous gout, guidelines often target a serum uric acid level of less than 5.0 to 6.0 mg/dL.
- ✓ **Uricosuric Agents:** Drugs like probenecid may be used to help the kidneys filter and excrete more uric acid.
- ✓ **Uricase Enzyme Therapy:** For severe, chronic, treatment-refractory tophaceous gout, pegloticase (often combined with methotrexate) is an intravenous infusion that actively breaks down uric acid deposits to shrink tophi rapidly.

Anti-Inflammatory Prophylaxis

- ✓ Lowering uric acid can mobilize crystals and trigger painful acute flares.
- ✓ Patients are prescribed daily preventive anti-inflammatory medications—such as low-dose colchicine, daily NSAIDs, or low-dose corticosteroids (prednisone)—typically continued for 3 to 6 months (or longer until tophi dissolve and flares stop).

Acute Flare Management

- ✓ If a painful acute attack occurs while on treatment, ULT (urate lowering treatment) should not be stopped.
- ✓ The flare itself is managed separately using NSAIDs, colchicine, oral/injectable glucocorticoids, or interleukin-1 (IL-1) inhibitors (like anakinra or canakinumab).

Surgical Intervention (Rare)

- ✓ Surgery (tophectomy) or joint debridement is generally reserved for rare cases where large tophi cause severe joint deformity, nerve entrapment, persistent skin ulceration, infection, or major functional impairment.

Lifestyle & Dietary Measures

- ✓ **Hydration:** Drinking plenty of water to help the kidneys flush out uric acid.
- ✓ **Dietary Adjustments:** Limiting alcohol (especially beer), sugary/fructose-sweetened drinks, and high-purine meats or seafood, while incorporating low-fat dairy or vitamin C-rich foods.
- ✓ **Weight Management:** Gradual weight loss can lower baseline uric acid and reduce mechanical load on affected joints.
- ✓ Foods that are rich in purines include anchovies, sardines, sweetbreads, kidney, liver, and meat extracts. Consumption of fructose-rich foods and beverages (eg, those sweetened with high-fructose corn syrup) is associated with an increased risk of gout in both men and women.

Occupational Therapy

- ✓ Training in joint protection techniques.
- ✓ Use of assistive devices such as:
 - Cane
 - Crutches

- Braces or splints (when appropriate)
- ✓ Advice on footwear and activity modification to reduce pressure on painful joints.

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