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# Āryavaidyan

लाभानां श्रेय आरोग्यम्

*Of all the gifts,  
the most precious is health*



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## FROM THE PAGES OF VĀGBHAṬA - LXVIII

P. Madhavikutty\*

**Abstract:** The last chapter of Sūtrasthānam viz. Kṣārāgnikarmavidhi is explained here. The method of application of kṣāra (alkali) and agni (fire), their contraindications, the signs and symptoms of inadequate, improper, proper and over burning, and their treatment are covered in this chapter.

अथातः क्षाराग्निकर्मविधिमध्यायं व्याख्यास्यामः ।  
इति ह स्माहुरात्रेयादयो महर्षयः ।

(Athāta: kṣārāgnikarmavidhi-  
madhyāyam vyākhyāsyāma: ।  
Iti ha smāhurātrēyādayō maharṣaya: । )

Now we shall comment the Chapter titled Kṣārāgnikarmavidhi (procedure of cauterization with alkalies and fire); thus spoke the great Ātrēya and other sages.

सर्वशस्त्रानुशस्त्राणां क्षारः श्रेष्ठो बहूनि यत् ।  
छेद्यभेद्यादिकर्माणि कुरुते विषमेष्वपि ॥ १ ॥  
दुःखावचार्यशस्त्रेषु तेन सिद्धमयात्सु च ।  
अतिकृच्छ्रेषु रोगेषु यच्च पानेऽपि युज्यते ॥ २ ॥

(Sarvaśastrānuśastrāṇām  
kṣāra: śreṣṭhō bahūni yat ।  
chēdyabhēdyādikarmāṇi  
kurutē viṣamēṣvapi ॥  
Du:khāvacāryaśastrēṣu  
tēna siddhamayātsu ca ।  
atikṛccchrēṣu rōgēṣu  
yacca pānēṢpi yujyatē ॥ 2 ॥ )

Of all the twenty-six metallic sharp instruments and accessory instruments, kṣāra (caustic alkali) is the most excellent one, because it can be used for many procedures such as excising, incising, etc., in inaccessible body parts where sharp instruments cannot be employed and in diseases which are not cured by surgical procedures. It can be used internally too in diseases which are difficult to be cured.

स पेयोऽर्शोग्निसादाश्मगुल्मोदरगरादिषु ।

(Sa pēyōṢrśōgnisādāśma-  
gulmōdaragarādiṣu । )

Kṣāra should be taken internally in the cases of haemorrhoids, dyspepsia, calculus, abdominal lumps, ascitis and artificial poisoning (gara).

योज्यः साक्षान्मषश्चित्रबाह्यार्शःकुष्ठसुमिषु ॥ ३ ॥

भगन्दरार्बुदग्रन्थिदुष्टनाडीव्रणादिषु ।

(yōjya: sāksānmaṣāśvitra-  
bāhyārśa:kuṣṭhasuptiṣu ॥ 3 ॥

Bhagandarārbudagrānṭhi-  
duṣṭanādīvraṇādiṣu । )

Its direct application is prescribed in warts, leucoderma, external piles, leprosy, numbness, fistula, cancerous growths, tumours, foul and sinus ulcers, etc.

न तूभयोऽपि योक्तव्यः पित्ते रक्ते चलेऽबले ॥ ४ ॥  
ज्वरेऽतिसारे हन्मूर्धरोगे पाण्डुमयेऽरुचौ ।  
तिमिरे कृतसंशुद्धौ श्वयथौ सर्वगात्रगे ॥ ५ ॥  
भीरुगर्भिण्यृतुमतीप्रोद्वृत्तफलयोनिषु ।  
अजीर्णेऽन्ने शिशौ वृद्धे धमनीसन्धिमर्मसु ॥ ६ ॥  
तरुणास्थिसिरास्नायुसीवनीगळनाभिषु ।  
देशेऽल्पमांसे वृषणमेढ्रस्रोतोनखान्तरे ॥ ७ ॥  
वर्त्मरोगादृतेऽक्ष्णोश्च शीतवर्षोष्णदुर्दिने ।

(na tūbhayōSpi yōktavya:  
pittē raktē calēSbalē ॥ 4 ॥  
JvarēStisārē hr̥nmūrdharōgē  
pāṇḍvāmayēSrucau ।  
timirē kṛtasamśuddhau  
śvayathau sarvagātragē ॥ 5 ॥  
Bhīrugarbhiṇyṛtumatī-  
prōdvṛttaphalayōniṣu ।  
ajīrṇēSnnē śisau vṛddhē  
dhamanīsandhimarmasu ॥ 6 ॥  
Tarunāsthisirāsnāyū-  
sīvanīgaḷanābhiṣu ।  
dēśēSlpamāmsē vṛṣaṇa-  
mēḍhrasrōtōnakhāntarē ॥ 7 ॥  
VartmarōgādṛtēSkṣṇōśca  
śītavarṣōṣṇadurdinē ।)

Both, internal and external applications are prohibited in the case of provocation of pitta, rakta and vāta, and in weak conditions. It should not be used in the case of fever, diarrhoea, diseases of heart and head, anaemia, anorexia, cataract, in those who have undergone purificatory treatments, who is timid, in women who are pregnant, menstruating or with

dislocated uterus; it should not be used when food is not digested well, in infants and old people; it should not be used on body parts such as arteries, joints, vital spots (marmas), cartilages, veins, tendons, sutures, throat, umbilicus, on scanty muscles, testes, orifice of penis, inside of the nails; it is prohibited in eye diseases except those of the eyelids; it should not be taken during cold, rainy and hot seasons, and especially on cloudy days.

काळमुष्ककशम्याककदळीपारिभद्रकान् ॥ ८ ॥  
अश्वकर्णमहावृक्षपलाशास्फोटवृक्षकान् ।  
इन्द्रवृक्षार्कपूतीकनक्तमालाश्वमारकान् ॥ ९ ॥  
काकजङ्घामपामार्गमग्रिमन्थाग्रितिल्वकान् ।  
सार्द्रान् समूलशाखादीन् खण्डशःपरिकल्पितान् ॥ १० ॥  
कोशातकीश्चतस्रश्च शूकं नाळं यवस्य च ।  
निवाते निचयीकृत्य पृथक् तानि शिलातले ॥ ११ ॥  
प्रक्षिप्य मुष्ककचये सुधाशमानि च दीपयेत् ।  
ततस्तिलानां कुतलैर्दध्वाऽग्नौ विगते पृथक् ॥ १२ ॥  
कृत्वा सुधाशमनां भस्म द्रोणान्त्वितरभस्मनः ।  
मुष्ककोत्तरमादाय प्रत्येकं जलमूत्रयोः ॥ १३ ॥  
गाळयेदर्धभारेण महता वाससा च तत् ।  
यावत्पिच्छिलरक्ताच्छस्तीक्ष्णो जातस्तदा च तम् ॥ १४ ॥  
गृहीत्वा क्षारनिष्यन्दं पचेल्लौह्यां विघट्टयन् ।  
पच्यमाने ततस्तस्मिंस्ताः सुधाभस्मशर्कराः ॥ १५ ॥  
शुक्तीः क्षारबकं शङ्खनाभीश्रायसभाजने ।  
कृत्वाऽग्निवर्णान्बहुशः क्षारोत्थे कुडबोन्मिते ॥ १६ ॥  
निर्वाप्य पिष्ट्वा तेनैव प्रतीवापं विनिक्षिपेत् ।  
श्लक्ष्णं शकृदक्षशिखिगृध्रकङ्कपोतजम् ॥ १७ ॥  
चतुष्पात्पक्षिपित्तालमनोह्वालवणानि च ।  
परितः सुतरां चातो दर्व्यां तमवघट्टयेत् ॥ १८ ॥  
सबाष्पैश्च यदोत्तिष्ठेद्बुद्बुदैर्लेहवद्धनः ।  
अवतार्य तदा शीतो यवराशावयोमये ॥ १९ ॥  
स्थाप्योऽयं मध्यमः क्षारो.....

(kālamuṣkakaśamyāka-  
 kadaḷīpāribhadrakān ॥ 8 ॥  
 Aśvakarṇamahāvṛkṣa-  
 palāśāsphōtavṛkṣakān ।  
 indravṛkṣārkapūṭīkana-  
 ktamālāśvamārakān ॥ 9 ॥  
 Kākagaṅghāmapāmārga-  
 magnimanthāgnitilvakān ।  
 sādrān samūlaśākhādīn  
 khaṇḍaśa:parikalpitān ॥ 10 ॥  
 Kōśātakīscatasraśca  
 śūkaṁ nālaṁ yavasya ca ।  
 nivātē nicayīkrtya  
 pṛthak tāni śilātālē ॥ 11 ॥  
 Prakṣīpya muṣkakacayē  
 sudhāśmāni ca dīpayēt ।  
 tatastilānām kutaḷairdag-  
 dhvāṣgnau vīgatē pṛthak ॥ 12 ॥  
 Kṛtvā sudhāśmanām bhasma  
 drōṇāntvitarabhasmana: ।  
 muṣkakōttaramādāya  
 pratyēkaṁ jalamūtrayō: ॥ 13 ॥  
 Gāḷayēdardhabhārēṇa  
 mahatā vāsasā ca tat ।  
 yāvātpicchilaraktāccha-  
 stīkṣṇō jātastadā ca tam ॥ 14 ॥  
 Gr̥hītvā kṣāraṇīyandaṁ  
 pacēllauhyām vīghaṭṭayan ।  
 pacyamānē tātastasmīstā:  
 sudhābhasmaśarkarā: ॥ 15 ॥  
 Śuktī: kṣārabakam śāṅkha-  
 nābhīścāyasabhājanē ।  
 kṛtvāṣgnivarṇānbahuśa:  
 kṣārōththē kuḍabōnmitē ॥ 16 ॥  
 Nirvāpya piṣṭvā tēnaiva  
 pratīvāpaṁ vinīkṣipēt ।  
 ślakṣṇam śakṛddakṣaśīkhi-  
 gr̥dhrakaṅkakapōtajam ॥ 17 ॥

Catuṣpātpakṣīpittāla-  
 manōhvālavanāni ca ।  
 parita: sutarām cātō  
 darvyā tamavaghattayēt ॥ 18 ॥  
 Sabāṣpaiśca yadōttiṣṭhēd-  
 budbudairlēhavadghana: ।  
 avatārya tadā śītō  
 yavarāśāvayōmayē ॥ 15 ॥  
 sthāpyōSyam madhyama: kṣārō.....)

Collect the newly extracted roots, branches and other parts of the following, cut into pieces, and heap on a vast rocky place separately where there is no wind.

Kālamuṣkaka	<i>Schrebera swietenioides</i>
Śamyāka	<i>Cassia fistula</i>
Kadaḷī	<i>Musa paradisiaca</i>
Pāribhadra	<i>Erythrina variegata</i>
Aśvakarṇa	<i>Terminalia paniculata</i>
Mahāvṛkṣa	<i>Euphorbia ligularia</i>
Palāśa	<i>Butea monosperma</i>
Āsphōṭa	<i>Clitoria ternatea</i>
Vṛkṣaka	<i>Holorrhena pubescens</i>
Indravṛkṣa	<i>Cedrus deodara</i>
Arka	<i>Calotropis gigantia</i>
Pūṭīka	<i>Holoptelea integrifolia</i>
Naktamālā	<i>Pongamia pinnata</i>
Aśvamāra	<i>Nerium oleander</i>
Kākajaṅghā	<i>Trichosanthes tricuspidata</i>
Āpāmārga	<i>Achyranthus aspera</i>
Agnimantha	<i>Premna corymbosa</i>
Agni	<i>Plumbago indica</i>
Tilvaka	<i>Exocaria agallocha</i>
Kōśātakīscatasra	<i>Luffa cylindrica</i>
	<i>Luffa acutangula</i>
	<i>Luffa acutangula</i>
	var. <i>amara</i>
	<i>Luffa echinata</i>

Put pieces of limestone on the heap of

kālamuṣkakā; and then cover all the heaps with dried chaffs of sesame plant, and set to fire. When all the heaps are well burnt and the fire extinguished, take out the ash of limestone and keep separately. Then mix all the other heaps together (with a prominent part of the ash of kālamuṣkakā). One drōṇa\* of this preparation is to be dissolved well in a mixture of cow's urine and water (each 1000 palas\*) and then to be filtered through a large cloth; repeat the filtering process till the mixture becomes slimy, reddish, clear and strong. Of this alkaline solution, keep eight palas aside, and the rest part cook well in an iron vessel stirring with a ladle.

Meanwhile, shells of pearl, oyster, conch (each eight palas) and the ash of limestone (kept separately) are to be made red-hot over an iron pan, and to be dipped repeatedly in the alkaline solution kept aside. To this, add powder of excreta of cock, peacock, falcon, heron and pigeon, bile of quadrupeds and birds, realgar, orpiment and salts, and make a paste used by the same alkaline solution.

Mix the above paste with the boiled alkaline solution, cook and stir well till it comes up with steamy bubbles and turns into a solid form. Then, remove it from the oven, when cooled, put in an iron vessel and keep inside the heap of yava (barly). This is the method of preparing madhyamakṣāra (alkali of medium potency).

.....न तु पिष्ट्वा क्षिपेन्मृदौ ।  
निर्वाप्यापनयेत्तीक्ष्णे पूर्ववत् प्रतिवापनम् ॥ २० ॥  
तथा लाङ्गलिकादन्तिचित्रकातिविषावचाः ।  
स्वर्जिकाकनकक्षीरिहिङ्गुपूतीकपल्लवाः ॥ २१ ॥  
तालपत्री विडं चेति, सप्तरात्रात्परं तु सः ।  
योज्यः .....

( .....na tu piṣṭvā kṣipēnmṛdau ।  
nirvāpyāpanayēttīkṣṇē  
pūrvavat prativāpanam ॥ 20 ॥  
Tathā lāṅgalikādanti-  
citrakātiviṣāvachāः ।  
svarjikākanakakṣīri-  
hiṅgupūtikapallavāः ॥ 21 ॥  
Tālapatrī viḍam cēti,  
saptarātrātparam tu saः ।  
yōjyaः .....।)

In the preparation of mṛduḥṣāra (alkali of mild potency), the above said limestone, etc. should be made red-hot and pour alkaline water into it; This process is repeated for several times until the alkaline solution becomes slimy, reddish, etc. The articles should be thrown away and the slimy alkaline solution should be filtered.

For tīkṣṇakṣāra (alkali of sharp potency), in addition to the articles used for the preparation of paste in madhyamakṣāra, the following drugs also are to be mixed:

Lāṅgālika	<i>Gloriosa superba</i>
Danti	<i>Baliospermum montanum</i>
Citraka	<i>Plumbago indica</i>
Ativiṣa	<i>Aconitum heterophyllum</i>
Vacā	<i>Acorus calamus</i>
Svarjikā	Carbonate of soda
Kanakakṣīri	<i>Argemone mexicana</i>
Hiṅgu	<i>Ferula asafoetida</i>
Pūtikapallava	<i>Holoptelea integrifolia</i> (tender leaves)
Tālapatrī	<i>Curculigo orchioides</i>
Viḍa	Black salt

The above preparation is to be used after seven days.

\*1 drōṇa = 12.288 kg; 1 pala = 48g

.....तीक्ष्णोऽनिलश्छेष्ममेदोजेष्वर्बुदादिषु ॥ २२ ॥  
 मध्येष्वेष्वेव मध्योऽन्यः पित्तास्रगुदजन्मसु ।  
 बलार्थे क्षीणपानीये क्षाराम्बु पुनरावपेत् ॥ २३ ॥

(.....tikṣṇōṣnilaś!ēṣma  
 mēdōjēṣvarbudādiṣu ॥ 22 ॥  
 Madhyēṣvēṣvēva madhyōṣnya:  
 pittāśragudajanmasu ।  
 balārthē kṣīṇapānīyē  
 kṣārāmbu punarāvapēt ॥ 23 ॥)

Alkali of sharp potency should be used in serious diseases such as arbuda, etc. which are caused by the vitiation of vāta, kapha and mēdas. When the disease is not so serious and is mild, then madhyamakṣāra can be used. Mṛduṣāra is to be used in diseases caused by the vitiation of pitta and rakta such as arśa (piles), etc. When alkali loses its water content and the potency is diminished, some more alkaline solution should be added to make it potent again.

नातितीक्ष्णमृदुः श्लक्ष्णः पिच्छिलः शीघ्रगः सितः ।  
 शिखरी सुखनिर्वाप्यो न विष्यन्दी न चातिरुक् ॥ २४ ॥  
 क्षारो दशगुणः शस्त्रतेजसोरपि कर्मकृत् ।  
 आचूषन्निव संरम्भाद्वात्रमापीडयन्निव ॥ २५ ॥  
 सर्वतोऽनुसरन् दोषानुन्मूलयति मूलतः ।  
 कर्म कृत्वा गतरुजः स्वयमेवोपशाम्यति ॥ २६ ॥

(Nātitikṣṇamṛdu: ślakṣṇa:  
 picchila: śīghraga: sita: ।  
 śikharī sukhanirvāpyō  
 na viṣyandī na cātiruk ॥ 24 ॥  
 Kṣārō daśaguṇa: śastra-  
 tējasōrapi karmakṛt ।  
 ācūṣanniva saṁrambhād-  
 gātramāpīḍayanniva ॥ 25 ॥

Sarvatōṣnusaran dōṣā-  
 nunmūlayati mūlata: ।  
 karma kṛtvā gataruja:  
 svayamēvōpaśāmyati ॥ 26 ॥)

The ten qualities attributed to alkali are: not too strong nor too mild, smooth, shining, quickly spreading, white in colour, having small projections on the surface, easily quenchable, not secreting and not producing severe pain. It can be used to perform all the actions of the sharp instruments as well as fire. It spreads quickly all over the body creating much agitation as if squeezing or pressing strongly, and extirpates the vitiating dōṣas. After its effect on the body, the pain disappears and the potency of kṣāra diminishes.

क्षारसाध्ये गदे छिन्ने लिखिते स्रावितेऽथवा ।  
 क्षारं शलाकया दत्त्वा प्लोतप्रावृत्तदेहया ॥ २७ ॥  
 मात्राशतमुपेक्षेत.....

(Kṣārasādhyē gadē chinnē  
 likhitē srāvitēsthavā ।  
 kṣāraṁ śalākayā datvā  
 plōtaprāvṛtadēhayā ॥ 27 ॥  
 mātrāśatamupēkṣēta....)

First of all, the diseased body part if found possible to treat with alkali, has to be cut, scraped or made to exude. Then, put the alkali on the affected part with a rod wrapped with a piece of cloth for a time of one hundred mātras\*.

.....तत्रार्शःस्वावृत्ताननम् ।  
 हस्तेन यन्त्रं कुर्वीत.....  
 ( .....tatrārśa:svāvṛtānanam ।  
 hastēna yantraṁ kurvīta.....)

\*mātra - The time required to pronounce a short syllable

While applying alkali in the case of piles, the mouth of arśōyantra is to be covered till the prescribed time is over.

.....वर्त्मरोगेषु वर्त्मनी ॥ २८ ॥  
 निर्भुज्य पिचुनाऽऽच्छाद्य कृष्णभागं विनिक्षिपेत् ।  
 पद्मपत्रतनुः क्षारलेपो, घ्राणबुदेषु च ॥ २९ ॥  
 प्रत्यादित्यं निषण्णस्य समुन्नम्याग्रनासिकाम् ।  
 मात्रा विधार्यः पञ्चाशत् तद्वदर्शसि कर्णजे ॥ ३० ॥  
 (.....vartmarōgēṣu vartmanī ॥ 28 ॥  
 Nirbhujya picunāṽṽchhādya  
 kṛṣṇabhāgaṁ vinikṣipēt ।  
 padmapatratanuḥ kṣāralēpō,  
 ghrāṇarbudēṣu ca ॥ 29 ॥  
 Pratyādityaṁ niṣaṇṇasya  
 samunnamyāgranāsikām ।  
 mātṛā vidhāryaḥ pañcāśat  
 tadvadarśasi karṇajāē ॥ 30 ॥)

In diseases of the eyelids, the eyelids are to be averted and the cornea kept covered with a piece of cloth; then apply the alkali as thin as a lotus petal. In the case of nāsārbuda, the patient is to be seated facing the sun, his nose tip raised up, and alkali applied on the arbuda. In both the cases of eyelids and nose, the alkali should not keep on the affected part for more than fifty mātras. The same method is to be followed in the cases of karṇarśās also.

क्षारं प्रमार्जनानु परिमृज्यावगम्य च ।  
 सुदग्धं घृतमध्वक्तं तत्पयोमस्तुकाञ्जिकैः ॥ ३१ ॥  
 निर्वापयेत्ततः साज्यैः स्वादुशीतैः प्रदेहयेत् ।  
 अभिष्यन्दीनि भोज्यानि भोज्यानि क्लेदनाय च ॥ ३२ ॥  
 (Kṣāram pramārjanānu  
 parimṛjyāvagamya ca ।  
 sudagdhā ghr̥tamadhvaktam  
 tatpayōmastukāñjikaiḥ ॥ 31 ॥

Nirvāpayēttataḥ sājyaiḥ  
 svāduśītaiḥ pradēhayēt ।  
 abhiṣyandīni bhōjyāni  
 bhōjyāni kḷēdanāya ca ॥ 32 ॥

After the prescribed time, remove the alkali with a piece of cloth and observe the site that whether the alkali application has worked well; apply a mixture of ghee and honey, irrigate well with milk, whey water and kañjika. Then, a paste made out of sweet and cold drugs mixed with ghee is to be applied on the affected part. The patient should take food items in liquid form to maintain the site moistened.

यदि च स्थिरमूलत्वात्क्षारदग्धं न शीर्यते ।  
 धान्याम्बबीजयष्ट्याह्वतिलैरालेपयेत्ततः ॥ ३३ ॥  
 तिलकल्कः समधुको घृताक्तो व्रणरोपणः ।

(Yadi ca sthīramūlatvāt-  
 kṣāradagdhaṁ na śīryatē ।  
 dhānyāṁlabijayaṣṭyāhva-  
 tilairālēpayēttataḥ ॥ 33 ॥  
 Tilakalkaḥ samadhukō  
 ghr̥tāktō vṛṇarōṇaḥ । )

In deep-rooted diseases, if the site does not wither or decay in the prescribed time after the application of alkali, a paste made out of sedimented part of dhānyāṁḷa, yaṣṭī and tila should be applied. To heal the ulcer, application of a paste prepared with tila and madhuka mixed with ghee is effectual.

पक्वजम्ब्वसितं सन्नं सम्यग्दग्धं विपर्यये ॥ ३४ ॥  
 ताम्रतातोदकण्ड्वाद्यैर्दुर्दग्धं तं पुनर्दहेत् ।  
 (pakvajambvasitaṁ sannāṁ  
 samyagdagdhaṁ viparyayē ॥ 34 ॥  
 Tāmratātōdakaṇḍvādyair-  
 durdagdhaṁ taṁ punardahēt । )



When the burning sensation leaves, the site will be black just like a ripened jamun fruit and slightly depressed. If the burning is improper or inadequate, it causes pricking pain, itching, etc. and the colour of site turns to coppery red. In such cases, the burning procedure has to be done again.

अतिदग्धे स्रवेद्रक्तं मूर्च्छादाहज्वरादयः ॥ ३५ ॥  
 गुदे विशेषाद्विण्मूत्रसंरोधोऽतिप्रवर्तनम् ।  
 पुंस्त्वोपघातो मृत्युर्वा गुदस्य शातनाधुवम् ॥ ३६ ॥  
 नासायां नासिकावंशदरणाकुञ्चनोद्भवः ।  
 भवेच्च विषयाज्ञानं तद्वच्छ्रोत्रादिकेष्वपि ॥ ३७ ॥  
 (atidagdhē sraṇvēdraktam  
 mūrccchādāhajvarādayaḥ ॥ 35 ॥  
 Gudē viśēṣādviṇṃmūtra-  
 saṁrōdhōṢtipravartanam ।  
 puṁstvōpaghātō mṛtyurvā  
 gudasya śātanādhruvam ॥ 36 ॥  
 Nāsāyām nāsikāvamśa-  
 daraṇākuñcanōdbhavaḥ ।  
 bhavēcca viṣayājñānam  
 tadvacchrōtrādikēṣvapi ॥ 37 ॥)

Over-burning causes bleeding, fainting, severe burning sensation, fever, etc; especially in the anus, it will make obstruction or unprecedented provocation to urine and faeces, and impotency or even death may occur due to destruction of the rectum; in the nose, over-burning causes splitting and bending of the nasal bridge and loses sense of smell. Similar troubles are occurred in the cases of other sense organs also.

विशेषादत्र सेकोऽम्बैर्लेपो मधु घृतं तिलाः ।  
 वातपित्तहरा चेष्टा सर्वैव शिशिरा क्रिया ॥ ३८ ॥  
 अम्लो हि शीतः स्पर्शेन क्षारस्तेनोपसंहितः ।  
 यात्याशु स्वादुतां तस्मादम्बैर्निर्वापयेत्तराम् ॥ ३९ ॥

(Viśēṣādatra sēkōSmḷair-  
 lēpō madhu ghr̥tam tilāḥ ।  
 vātapittaharā cēṣṭā  
 sarvaiva śīśirā kriyā ॥ 38 ॥  
 Amḷō hi śītaḥ sparsēna  
 kṣārastēnōpasamhitaḥ ।  
 yātyāśu svādutām tasmād-  
 amḷairnirvāpayēttarām ॥ 39 ॥)

In this condition, irrigation with sour fluids, application of a paste made out of tila mixed with ghee and honey, and activities which pacify vāta and pitta and all those having cooling effect are to be adopted. Though sour taste is hot in potency, it is cold to touch, and blended with alkali it quickly turns into sweet and gains all the properties of sweet. So, in the case of over-burning, the site should quenched very well with sour substances.

(विषाग्निशस्त्राशनिमृत्युतुल्यः  
 क्षारो भवेदल्पमतिप्रयुक्तः ।  
 स घीमता सम्यगनुप्रयुक्तो  
 रोगान्निहन्यादचिरेण घोरान् ॥ १ ॥)

(Viṣāgnīśastrāśanimṛtyutulyaḥ  
 kṣārō bhavēdalpamatiprayuktaḥ ।  
 sa ghīmatā samyaganuprayuktō  
 rōgānnihanyādacirēṇa ghōrān ॥ 1 ॥)

(Cauterisation with alkali, if performed by an inexpert physician, is just like death caused by poison, fire, sharp weapon or lightning; performed properly by an expert physician, it can cure even dreadful diseases quickly.)

अग्निः क्षारादपि श्रेष्ठस्तद्दधानामसम्भवात् ।  
 भेषजक्षारशस्त्रैश्च न सिद्धानां प्रसाधनात् ॥ ४० ॥

(Agniḥ kṣārādapi śreṣṭhasthad-  
 dagdhānāmasambhavāt ।  
 bhēṣajakṣārāśastraiśca  
 na siddhānām prasāadhanāt ॥ 40 ॥)

Cauterisation with fire is more effective than with alkali, because the disease treated with fire never recurs. This can be used successfully in such cases, which are unable to cure by drugs, alkalies and sharp instruments.

त्वचि मांसे सिरास्नायुसन्ध्यस्थिषु स युज्यते ।  
मषाङ्गळानिमूर्धार्तिमन्थकीलतिलादिषु ॥ ४१ ॥  
त्वग्दाहो वर्तिगोदन्तसूर्यकान्तशरादिभिः ।

(Tvaci māmsē sirāsnāyu-  
sandhyasthiṣu sa yujyatē ।  
maṣāṅgagḷānimūrdhārti-  
manthakīlatilādiṣu ॥ 41 ॥  
Tvagdāhō vartigōdanta-  
sūryakāntaśarādibhiः ।)

Agnikarma is used on the skin, muscle, vein, tendons, joints and bones. In the cases of moles, weakness of the body parts, headache, adhimantha (an eye disease), warts, black marks, etc., tvagdāha (burning of the skin) is done with a lighted wick or cow's tooth, sūryakānta, arrow, etc.

अर्शोभगन्दरग्रन्थिनाडीदुष्टव्रणादिषु ॥ ४२ ॥  
मांसदाहो मधुस्नेहजाम्बवौष्ठगुडादिभिः ।  
(arśōbhagandaragranti-  
nāḍīduṣṭavranādiṣu ॥ 42 ॥  
māmsadāhō madhusnēha-  
jāmbavauṣṭhaguḍādibhiः ।)

Burning of muscles is done with heated honey, fats or jāmbavōṣṭha (described in the chapter Yantravidhi) or with jaggery in the cases of piles, fistula, tumours, wounds with sinus, foul ulcers, etc.

श्लिष्टवर्त्मन्यसृक्सावनील्यसम्यग्व्यधादिषु ॥ ४३ ॥  
सिरादिदाहस्तैरेव .....  
(śliṣṭavartmanyasṛkṣāvānīlyasamyagvyadhādiṣu ॥ 43 ॥  
sirādidāhastairēva .....)

In the cases of śliṣṭavartma (a disease affecting eyelids), bleeding, nīlikā (described in kṣudrarōgaprakaraṇam) and in improper venisection, sirādidāha (burning of veins, etc.) (cauterisation) should be done with the same materials prescribed earlier.

.....न दहेत्क्षारवारितान् ।  
अन्तःशल्यसृजो भिन्नकोष्ठान् भूरिव्रणानुरान् ॥ ४४ ॥  
(.....na dahētkṣāravāritān ।  
antaःśalyasṛjō bhinnā-  
kōṣṭhān bhūrivraṇāturān ॥ 44 ॥)

Agnikarma should not be done in those who are not fit for administration of caustic alkali, those with wounds which contain any foreign body or blood inside, those with perforated abdomen and those affected with many wounds.

सुदग्धं घृतमध्वक्तं स्निग्धशीतैः प्रदेहयेत् ।  
(Sudagdhāṁ ghr̥tamadhvaktāṁ  
snigdhaśītaiः pradēhayēt ।)

When the burning is properly done, the site should be anointed with ghee and honey, and then a paste prepared out of unctuous and cold drugs is to be applied.

तस्य लिङ्गं स्थिते रक्ते शब्दवल्लसिकान्वितम् ॥ ४५ ॥  
पक्तालकपोताभं सुरोहं नातिवेदनम् ।

(tasya liṅgaṁ sthitē raktē  
śabdavallasikānvitam ॥ 45 ॥  
Pakvatālakapōtābhaṁ  
surōhaṁ nātivēdanam ।)

Emergence of lymph with a bubbling sound, turning of the colour of the site to black like a ripened palmyra fruit or a pigeon, etc. are the signs of proper burning. The burnt site will heal easily without much pain.

प्रमाददग्धवत्सर्वे दुर्दधात्यर्थदग्धयोः ॥ ४६ ॥

(pramādadagdhavatsarvē

durdagdhātyarthadagdhayō: ॥ 46 ॥)

The signs of insufficient and excessive burning are the same as of improper burning described earlier.

चतुर्धा तत्तु तुच्छेन सह तुच्छस्य लक्षणम् ।  
त्वग्बिर्णोष्यतेऽत्यर्थे न च स्फोटसमुद्भवः ॥ ४७ ॥  
सस्फोटदाहतीत्रोषं दुर्दधं अतिदाहतः ।  
मांसलम्बनसङ्कोचदाहधूपनवेदनाः ॥ ४८ ॥  
सिरादिनाशस्तृणमूर्च्छात्रणगाम्भीर्यमृत्यवः ।

(Caturdhā tattu tucchēna

saha tucchasya lakṣaṇam ।

tvagvivarnōṣyatēStyarthē

na ca sphōṭasamudbhava: ॥ 47 ॥

Sasphōṭadāhatīvrōṣam

durdagdhām atidāhata: ।

māmsalambanasāṅkōca

dāhadhūpanavēdanā: ॥ 48 ॥

Sirādināśastrṇmūrccā-

vraṇagāmbhīryamṛtyava: ।)

Burning is of four kinds viz. tucchadagdhā, durdagdhā, samyagadagdhā and atidagdhā. Of these, the signs of tucchadagdhā are: discolouration of the skin, sensation of excessive heat and non-formation of boils. There will be severe pain and burning sensation in durdagdhā. In atidagdhā, the signs are: dropping down of muscles, constriction, burning sensation, feeling hot fumes around the site, pain, destruction of veins, thirst, fainting and appearance of extremely deep and wide wound. In such cases, some time, even death may occur.

तुच्छस्याग्निप्रतपनं कार्यमुष्णं च भेषजम् ॥ ४९ ॥

स्त्यानेऽस्त्रे वेदनाऽत्यर्थे विलीने मन्दता रुजः ।

(tucchasyāgnipratapanam

kāryamuṣṇam ca bhēṣajam ॥ 49 ॥

StyānēSsrē vēdanāStyarthē

vilīnē mandatā ruja: ।)

In tucchadagdhā, burning should be performed once again, and then hot drugs are to be used. There will be severe pain when the blood is coagulated, and the pain is relieved when the blood is dissolved with hot applications.

दुर्दधे शीतमुष्णं च युञ्ज्यादादौ ततो हिमम् ॥ ५० ॥

(durdagdhē śītamuṣṇam ca

yuñjyādādaū tatō himam ॥ 50 ॥)

In the case of insufficient burning, cold and hot applications are to be used alternatively at first, and then cold applications only to be used.

सम्यग्दधे तवक्षीरिष्ठक्षचन्दनगैरिकैः ।

लिम्पेत्साज्यामृतैरूर्ध्वे पित्तविद्रधिवत्क्रिया ॥ ५१ ॥

(Samyagdagdhē tavakṣīri-

ṣṭakṣacandanagairikai: ।

limpētsājyāmṛtairūrdhvē

pittavidradhivatkrīyā ॥ 51 ॥)

In samyagadagdhā, a paste made out of tavakṣīri (*Maranta arundinacea*), ṣṭakṣa (*Ficus microcarpa*), candana (*Santalum album*), gairika (kaolinum) and amṛta (*Tinospora cordifolia*) mixed with ghee should be applied. Then, the treatment prescribed for vidradhi has to be done.

अतिदधे द्रुतं कुर्यात्सर्वे पित्तविसर्पवत् ।

(Atidagdhē drutaṁ kuryāt-sarvē

pittavisarpavat ।)

All the remedies indicated for pitta visarpa are to be done quickly in atidagdhā.

स्नेहदधे भृशतरं रूक्षं तत्र तु योजयेत् ॥ ५२ ॥

(snēhadagdhē bhṛśataram

rūkṣam tatra tu yōjayēt ॥ 52 ॥)

In snēhadagdha (by hot oil, ghee, etc.), all measures that create rūkṣata (dryness) are to be taken.

(शस्त्रक्षाराग्रयो यस्मान्मृत्योः परममायुधम् ।  
अप्रमत्तो भिषक् तस्मात्तान् सम्यगवचारयेत् ॥ २ ॥)

(Śastrakṣārāgnayō yasmān-  
mrtyōḥ paramamāyudham ।  
apramattō bhiṣak tasmāttān  
samyagavacārayēt ॥ 2 ॥)

(Sharp instruments, alkali and fire are said to be the strong weapons of the lord of death. So, the physician has to be extremely careful while administering them.)

समाप्यते स्थानमिदं हृदयस्य रहस्यवत् ।  
अत्रार्थः सूत्रिता सूक्ष्माः प्रतन्यन्ते हि सर्वतः ॥ ५३ ॥

(Samāpyatē sthānamidaṁ  
hṛdayasya rahasyavat ।

atrārthaḥ sūtritā sūkṣmāḥ  
pratanyantē hi sarvataḥ ॥ 53 ॥)

Thus, this section sūtrasthāna, which contains all the secrets of Aṣṭāṅghṛdaya, is now being brought to an end. All the objects well knit together with a strict order here, will be described in detail in all the other sections.

इति श्रीवैद्यपतिसिंहगुप्तसूनुश्रीमद्वाग्भटविरचिताया-  
मष्टाङ्गहृदयसंहितायां सूत्रस्थाने क्षाराग्निकर्मविधिर्नाम  
त्रिंशत्तमोऽध्यायः ॥ ३० ॥

(iti śrīvaidyapatisimhaguptasūnuśrīmad  
vāgbhaṭaviracitāyāmaṣṭāṅghṛdayasaṁ-  
hitāyāṁ sūtrasthānē kṣārāgnikarmavidhir-  
nāma trimśattamoऽdhyāyaḥ ॥ 30 ॥)

Thus ends the 30<sup>th</sup> chapter named kṣārāgnikarmavidhi in sūtrasthāna of Aṣṭāṅghṛdaya written by Vāgbhaṭa, the son of Vaidyapati Simhagupta.

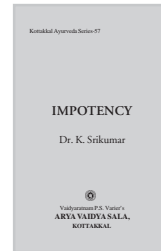
*Kottakkal Ayurveda Series: 52*

## IMPOTENCY

K. Sreekumar

Impotency is a complaint commonly encountered in ten to thirty five percent of adults. As this is an area not explored properly by our scientists and researchers, important information on many aspects of this is lacking. This text contains the essay adjudged first in the All India Essay competition for Vaidyaratnam P.S. Varier Prize, 2001.

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## THE CONCEPT OF JARĀ IN AYURVEDA

Sujit Kumar Dalai and Laxmikant Dwivedi\*

**Abstract:** Ageing, an involuntary phase in the development of the organism, is characterized by the loss of adaptability of an individual as time passes. It is a natural process; in other words, it is the anatomical, physiological, bio-chemical and functional changes that occur in man with the passage of time. This paper discusses the ageing with reference to ayurvedic concept of jarā.

### Introduction

The Sanskrit term 'jarā' and the Greek term 'geras' are cognates, both of which mean ageing. According to ayurvedic literature, by passing of each yuga, the religious duties and qualities of living beings reduce by quarter and gradually the entire universe faces a dissolution. Carakasamhita states that in the course of 1/100<sup>th</sup> of a yuga, the life span of living being get reduced by one year pertaining to their life span.

Man has got many inborn natures, and, at times, under the eternal influence and vicissitude of time, he is inclined to lead wrongful life that makes him susceptible to disease or decay. In spite of his strenuous effort to keep free from diseases, by the influence jarā, all the diseases and degeneration overcome him. Though the effects of ageing are considered to be inevitable, man has always shown a genuine desire to prevent the attacks of diseases as well as the influence of jarā.

### Definition

Although widely taught, there is no an adequate definition for the term 'ageing'. True ageing is the consequence of an interaction between extrinsic i.e. environmental lifestyle, and intrinsic i.e. genetic factors. Ageing or deterioration is a process of physiological functions occurring in all eukaryotic organisms after they attain reproductive ability. According to Āyurvēdaśabdakōśa, the process of deterioration is called jarā or vārdhakya.

**Vṛddhāvastha:-** Caraka states that jarāvastha is considered as an old mud house which is ready to crumble in the ensuing rain water. This stage begins from 60 years (Caraka) or 70 years (Suśruta) marked by diminished strength of dhātus, indriyas, mental faculties like perception, retention, enthusiasm along with wrinkled skin, grayed hair and baldness. There will be breakdown of dhātūs due to increased vāta. Suśruta classifies jarā as kālajā

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(timely i.e. at 70 years onwards) and akālaṅ (untimely).

### Concept of jarā

Ayurveda contemplates jarā or vārdhakya as a natural and inexorable process as well as natural disease (svabhāvajavyādhi). The term jarā is derived from the Sanskrit root ṛsvayōhana which can be defined as vāya: kṛta: ślathā māmsādayā (vācaspathyam) i.e. the muscles and the other tissues get loosened under the influence of ageing. So the term jarā indicates the loss/decline of dhātus, senses, energy, virility, etc. in the period of lifespan of an individual.

The term visraśā, a synonym of jarā, is derived from the word sraṁśu adha:patanē, and according to Vāgbhaṭa, which means degradation or retardation in the physical,

physiological and psychological well-being. Śārṅgadharaśāhita and Bhāvaprakāśa point out the loss of different biological factors like physical and mental functions due to ageing in different decades (Table 1).

### Theories on jarā

According to Suśruta the theories that explain the process of ageing can be grouped as follows:

#### 1. Svabhāvavāda

The svabhāvōparamavāda explains that there is no factor that can prevent ageing. However by appropriate measures it can be delayed. Suśruta considers jarā (senescence) as svābhāvikavyādhi. According to Ḍalhaṇa, those who specialised in the inhibition of the process of ageing were called svabhāvavyādhi cintakas

TABLE 1  
Ageing in different span of life according to ayurvedic classics

Year	Vāgbhaṭa	Śārṅgadhara	Bhāvaprakāśa
1 - 10	bālya (childhood)	bālya	bālya
11 - 20	vṛddhi (growth)	vṛddhi	vṛddhi
21 - 30	prabhā (complexion)	chavi (complexion)	chavi
31 - 40	mēdhā (intellect)	mēdhā	mēdhā
41 - 50	tvak (skin changes)	tvak	tvak
51 - 60	śukra	dr̥ṣṭi (vision)	dr̥ṣṭi
61 - 70	akṣi (vision)	śukra	śukra
71 - 80	śṛuti (hearing)	vikramā (courage)	vikramā
81 - 90	manas (mental functions)	buddhi (intellect)	buddhi
91 - 100	sarvēndriya (all the sensory and motor functions)	karmēndriya (motor functions)	karmēndriya
101 - 110	-	cēta (mental faculties)	cēta
111 - 120	-	jīva (life)	jīva

## 2. **Īśvaravāda**

Caraka explains that Brahma, Prajāpati, Indra are represented in the body by respective elements. Vāyu in Vātakalākaliyādhyāyam is said to be responsible for formation, existence and destruction of life and it represents Viṣṇu, Prajāpati, Yama, etc. According to Vāgbhaṭa, agni, the prime factor for existence of life, is termed as Īśvara.

## 3. **Kālavāda**

Vāgbhaṭa says that kāla is the controller of birth, existence and death; jarā is divided as kālakṛta (timely) and akālakṛta (untimely).

## 4. **Yadṛścavāda**

According to Vāgbhaṭa, manifestations of ariṣṭalākṣṇas like sudden change of complexion of the body, death due to unknown aetiology are few examples of yadṛścavāda.

## 5. **Niyatavāda**

According to Caraka, daiva (the acts of previous life) is said to determine āyu along with puruṣakāra. Adharma is the cause for janapadōdhvaṁsa, and adharma decreases in the course of time, which in turn, reduces the average lifespan of an individual.

## 6. **Pariṇāmavāda**

Caraka states that a proper co-ordination of six factors essential for the pariṇāma (transformation) of food results in dhātusāmya, which is the basis for health and longevity; and jarā and death are said to be the result from pariṇāma of kāla.

## **Jarā vis-a-vis ageing**

According to Suśruta, āyu is the combination of satva, ātma, śarīra and indriyas. All these components, except ātma, which is immune to the cycle of birth, death and disease, have to be considered for understanding the ageing

process. “Dōṣadhātumalāmūla hi śarīram”, the definition of śarīra, underscores the role of these three constituents in the process of ageing.

## **Tridōṣa and ageing**

The body here is compared to a house having a central pole with its roof supported by three rafters. Without these three rafters the roof collapses and the house is lost. Similarly, vāta, pitta and kapha, as long as they are in their normal state, support the body and their abnormal state is senescence. According to Suśruta, up to the vṛddhāvastha, many syndromes are observed due to imbalance in the body constituents i.e. vāta, pitta and kapha to a greater extent. This imbalance varies in velocity and intensity depending upon many factors such as life style, habits and age, etc. Thus these variations are observed in the psychosomatic constitution of a person.

## **Saptadhātu and ageing**

Ayurveda recognizes seven substances, which are the building blocks of our body. They are named as rasa, rakta, māṁsa, mēda, asthi, majja and śukra. Dhātūs are responsible to maintain a state of equilibrium with the help of dōṣa and mala. Vāgbhaṭa states that kṣēyamāṇadhātu is a feature of old age. The function of dhātu is dhāraṇa and pōṣaṇa. In old age, due to vikṛtavāta, the first dhātura is not properly formed and its function of prīṇana to the rest of the dhātu is not performed, resulting in sequential weakening of all dhātūs i.e dhātuḥṣaya. There are various kṣīṇalakṣaṇas observed in old age (Table 2).

## **Mala and ageing**

Mala, the third component of śarīra, forms the mūla dravya of the body. The śakṛt (faeces) gives support and maintains vāta and pitta. Mūtra maintains the moisture of the food;



TABLE 2  
Various kṣīṇalakṣaṇas observed in old age

Rasakṣaya	: tvakrūkṣata
Raktakṣaya	: śiraśaithilya, rūkṣata
Māmsakṣaya	: glāni, gandasphik śuṣkata, sandhivēdana
Mēdakṣaya	: kaṭīśūnyata, plīhavṛddhi, aṅgakṛṣata, sandhiśūnyata, nētraglāni, āyāsa
Asthikṣaya	: kēśa-lōma-nakha-śmaśru-danta-patana, śrama, sandhiśīthilata, asthitōda
Majjakṣaya	: vāta diseases, asthiśauṣirya, brama, timiradarśana
Śukrakṣaya	: daurbalya, mukhaśōṣa, pāṇḍutva, avasāda, śrama, kḷaibhya, vṛṣaṇatōda

svēda maintains the moisture and greasiness of the skin and supports the hair over it. Mala arise out of kīṭṭapāka at the pācakāgni and dhātvaṅni levels. These play a vital role in the body dynamics as elimination of mala is an index of life activities. Hampered agni leads to malakṣaya. The various kṣīṇalakṣaṇas observed in old age are: purīṣakṣaya (dryness of the body, pain in intestine, etc.) and mūtrakṣaya (dysuria, excessive thirst, dryness of mouth, etc.)

### Indriya and ageing

Suśruta defines 'indra: prāṇastasya liṅga-mindriyam, which denotes the sign of life. According to the functions and performance influenced by mahābhūtas and tridōṣas, ayurveda considers three kinds of indriyas i.e. jñānēndriya, karmēndriya and ubhayēndriya; Caraka describes that vāta (prāṇa) does the

function of sarvēndriyāṇāmudyōjaka, and indriyatarpaṇa is done by tarpaka-kapha, etc. Hence, the abnormality of tridōṣas in old age leads to various disorders of the respective indriyas.

### Agni and ageing

According to ayurveda, agni is that entity which forms the main constituent of pitta and it does good when it is calm (akōpita) and when it is perturbed causes damage. Bala, ārōgya, (health), āyus (longevity) and life (prāṇa) are established by agni. According to Caraka, agni is responsible for existence of longevity, complexion, vitality, glow, oja (vital essence), etc.

The agni in our body differs from individual to individual. Based on its potentiality to perform duties, Caraka classifies four types of agnis: 1) highly potent (tīkṣṇa), 2) potent (sama), 3) perverted (viṣama) and 4) dull (manda). In old age, due to vāta predominance, the influence of viṣamāgni leads to viṣamāgnijanya rōgas such as ajrṇa, ādhmāna, śūla, udāvarta, atisāra, āntrakūjana and pravāhana. In young age, due to increased activity of pitta, the digestive capacity will be at its peak. The optimum activity of agni is responsible for growth and development of the body and maintains vitality and vigor. Suśruta states that defective metabolism (dhātuviṣamāgni) occurs in old age due to viṣamāgni which leads to involuntary changes such as kṣaya and śōṣa.

### Ōja and ageing

Suśruta acclaims that the quintessence of all the seven dhātūs is oja. Its depletion and final absence is the cause of ageing. According to Caraka, oja is bala and is responsible for resistance capacity i.e. vyādhikṣamatvam (immunity power). Suśruta states that the seat



of ōja is hṛdaya; hence it is responsible to nourish and strengthen the dhātus, provides energy, happiness, lusture and balances the function of the indriyas.

In old age, kṣaya of saptadhātus leads to kṣaya of ōja, which are of three types according to Suśruta:

- Ōjōvisraṃsa:- Sandhiviślēṣa, gātrasāda, dōṣacyavana (dōṣasthānacyuta) śrama-kriya (all functions of the body) sannirōdha, etc.
- Ōjōvyāpat:- Gurugātrata, aṅgastabdhata, varṇaglāni, tandra, nidra, vātaśōpha, etc.
- Ōjōkṣaya:- Mūrcha, māṃsakṣaya, mōha, pralāpa and maraṇa (death).

### Conclusion

Ageing is a complex process or set of processes involving many 'casual' inputs and manifold consequences. In other words, ageing is an inevitable process involving structural and functional changes in the body with dōṣa, dhātu, mala (the constituent of śarīra), agni, indriya and ōja that destroy the span of life (āyu = satvā + ātma + śarīra + indriyas). There is no unequivocal age that can be termed as specific period of jarā. Our sages were well aware of the concept of jarā and its process and probably this concept would have been the driving force for them to pursuit towards

attaining the longevity through rasāyana therapy, the foremost branch of ayurveda.

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## A CRITICAL APPRAISAL OF THE CONCEPT OF ŌJAS IN AYURVEDA

Ashutosh Kr. Yadav, J.S. Tripathi, H.H. Awasthi and J.K. Mishra\*

**Abstract:** Ōjas is considered to be energy, vigour and vitality in human body. It can also be considered as prāṇaśakti, which means life energy. Its partial presence helps to maintain health and strength, and its partial absence causes to many diseases. This paper briefly discusses the concept of Ōjas in ayurveda.

The concept of Ōjas is a unique approach in ancient Indian Medicine for the understanding of the biological processes in the body. There are different views among the scholars of ayurveda regarding the understanding of the real nature and the physiological role of this biological substance in the maintenance of the life processes. Many of the modern Ayurvedists consider Ōjas to be a group of immune factors responsible for immunity and defense mechanism of the body, against a variety of exogenous substances and microorganisms. Although this view is predominant at present and holds true in the light of the descriptions available in classical texts, the concept is not described as a whole in total; different aspects of the functioning of the Ōjas are to be analyzed and studied for this purpose.

Ōjas, as a Sanskrit term, denotes various meanings and forms as material as well as quality or effect. Ōjas is considered to be

energy in human body; and vitality and vigour in a person. Ōjas is known as prāṇaśakti, which means 'life energy' and the cause of strength. Besides these conceptual senses, Ōjas is the fluid substance or material having its physiological entity in human body. Ōjas is specifically highlighted as an indispensable part of life as it is highly valued and essential for survival, function and existence of the body; its presence during life gives energy to a person and its partial absence, deficiency or reduction leads to various diseases and total absence leads to fatal state of life - death. Thus, Ōjas is a vital entity and concept in ayurveda.

The Indian System of Medicine considers Ōjas, a responsible magnitude of energy for functioning of the entire body with vigour and vitality. It is a material in the body, which has got certain characteristics and functions (guṇa and karma). This vital substance is the quintessence of the seven tissues (saptadhātus).

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Ayurvedic classics describe ōjas for its apparent understanding of nature, form and action. For instance, as honey is gathered from various flowers by the bees, ōjas is gathered from the seven body tissues. Similarly, as ghee is pervaded all through the milk, ōjas is pervaded all through the tissues. It is yellowish-red in colour and cold (saumya) in potency. Ōjas is also known as the strength and vitality (bala) of the body.

Ōjas and bala have synergy in regard to quality, efficiency and activity. Bala is said to be the resultant effect of ōjas since the deficiency and morbidity of ōjas directly affects the degeneration of bala. Bala is classified into three viz. sahaja, kālaja and yuktikṛta. Of these, sahajabala is natural and innate strength (immunity) of a person. This is a genetic factor and depends upon the race and climatic conditions of a person. Kālajabala is the strength and immunity of a person that varies according to the age and seasonal changes. In other words, a person is strong both internally and externally during cold seasons, whereas his strength is poor in summer and moderate in other seasons. Yuktikṛtabala means the acquired or gained strength developed and maintained through exercises, proper diet, medicines and other means. This category also includes mental attitudes i.e. relaxation, free from stress, etc.

It is contextual to refer three inter-relative terms while discussing ōjas i.e. ōjas, bala and sāhasa<sup>1</sup>. These three terms indicate sāmārthya or strength, capability and potentiality of sensory organs, body and mind respectively. Actually, ōjas is tējas, which is the nucleus of all the powers, capabilities, energies and effects.

Therefore, tējas appears to be very meaningful and relevant; it denotes sāra or power and energy, which is the base, cause and root of all kinds of strength (bala); ōjas, being the key to all kinds of immunity, is responsible for the power and strength of the body; it is also the base of prāṇa (life), which is also called paraṃtēja that manifests first in the beginning of the life process - prathamam jāyatē ōja:.

The discussion on ōjas in relevance with bala also provides indication to analyse bala or strength in two forms: internal and external. External strength (bāhyaśakti) is that which performs actions of organs and body parts; it is karmanivartanakṣamatā. According to Suśruta, it is the capacity of performing movement and activities by different organs. Caraka describes bala as the factor to be known from the power of exercise (vyāyāmaśakti). Internal power or strength includes body immunity, internal defense mechanism, nourishment of tissues, etc. that imparts tējas in the sense of brightness or refulgence.

Ōjas, in this way, is sarvadhātu sārārūpa - the essence of all the tissues, śaktyupajaya lakṣaṇa - the sign of well-nourished body and prāṇa-śrayabhūta prāṇa - the base of life. Sometimes ōjas is misinterpreted as the resultant tissue of śukradhātu (reproductive tissue) only. This is improper; because according to ayurvedic classics, that which maintains distinctive high and valuable status of a vital entity in the form of ōjas is tējōrūpa, the pōṣaka (that which nourishes) of the body. Thus, ōjas is superior entity of vitality and life with wide spectrum of its activities of survival in excellence.

Caraka says that ōjas maintains the living beings by its activity of saturation (prēraṇa); without

ōjas no life of creatures exists. It is the initial essence of embryo and also the essence of its nourishing material, which enters first of all into the hṛdaya; its destruction leads to destruction of the body itself. It is the sustainer located in the heart (hṛdaya) and is the cream/oily/fatty portion of the nutrient fluid in the body (śarīra rasa snēha), and there the vital factors are established or produced various types of yields or effects, hence it is called mahāphala<sup>2</sup>. According to Caraka, the heart acts a root, from where ten great vessels carry ōjas and pulsate all over the body<sup>3</sup>.

Ayurvedic classics describe certain salient features of ōjas in relation with its characteristics, types, quantity, form, origin/generation and causes diminution and clarify several points for the understanding of the concept of ōjas. Ōjas is of two types viz. primary (para) and secondary (apara). Hṛdaya is said to be the seat of para ōjas which is of eight drops (aṣṭabindu) in quantity<sup>4</sup>. The apara ōjas is located all over the body and is arddhāñjali (a cupped palm full) in quantity. Regarding quantity of ōjas Gangadhar annotates with a different view that aṣṭabindu and arddhāñjali are one and same, because bindu means karṣa, and eight karṣas are equal to arddhāñjali. As ōjas is vital for the development and survival of the body, its diminution to the first and the second degree causes appearance of the related symptoms, and death ensues on its diminution to a third degree. Ōjas is the essence of all the tissues by nature; thus it is included in seven dhātus, not eight<sup>5</sup>. The ōjas is said to have the colour of ghee, taste of honey and smell of fried paddy<sup>6</sup>.

The loss of ōjas (ōjakṣaya) has classically been explained in three stages depending on the

quantity and quality of loss, which are textually known as ōjōvyāpat in general. The first stage is visraṁsā, which means displacement from its circulation. In this condition, the symptoms are: loosening of joints, easy fatigability and impairment of the functions of the body. The second stage is vyāpat, which indicates the changes that taken place in the quality of ōjas. The signs and symptoms of this condition are: heaviness of the body and limbs, oedema, discolouration of skin and sleeplessness. The third stage is ōjakṣaya, which is characterized by the symptoms of syncope, unconsciousness, atrophy of musculature, confusion, delirium, etc. This stage include total loss manifesting symptoms like fear, feeling of insecurity, constant thoughts, loss of strength, poor functioning of sensory organs, loss of lustre/colour emaciation and dryness of the skin. Some of the prominent psychical causes of the loss or deficiency of ōjas are anger, fear, anxiety, sorrow, worry, etc.; reduced nourishment, excessive physical activity, etc. are some of the physical causes.

Ōjas is one of the morbid factors (dūṣya), which is said to be responsible for a variety of pramēha diseases. Due to vitiation of ōjas, vātik disorders of pramēha group are produced<sup>7</sup>. Madhumēha, identified as diabetes mellitus, has also been diagnosed as ōjōmēha in classical medicine. Caraka refers to diseases like rājayakṣama and madātyaya caused by the vitiation of ōjas<sup>8</sup>. Caraka says that ōjas is of sweet nature but when it gets associated with astringent taste due to roughness of vāta and is carried to the urinary bladder, it gives rise to madhumēha (diabetes). Alcohol is said to have ten attributes just opposite to that of ōjas. By virtue of its attributes, alcohol afflicts the ōjas

in the body giving rise to mental distortions. The properties of ojas are: 1) white and slightly yellowish-red resembling the colour of ghee, 2) sweet in taste like honey, 3) snigdha (viscous), 4) guru (heavy), pichila (slimy), 6) mṛdu (soft), sāndra (dense), 8) sūkṣma (capable of penetrating into srōtases of smallest calibre and also less in quality), 9) śīta (cold in potency) and 10) sthira (stable).

Based on the characteristics and descriptions Dr. A.B. Athvale concludes that ślāiṣmika ojas, which measures half añjali (half the quantity of both hands joined together) in the body, symbolises the molecules of glucose, amino acids, fatty acids and glycerol, which supply energy to the tissues<sup>9</sup>. Para ojas represents high energy phosphate bonds, which forms currency of body energy. Kaviraj Gana Nath Sen considers the hormonal secretions of pituitary gland as ojas<sup>10</sup>. According to Priyavrat Sharma, the basic life entity, the Protoplasm, represents ojas<sup>11</sup>.

### Conclusion

Ayurvedic classics describe certain basic facts while interpreting this specific substance ojas:

- Ācāryas, some times, consider 'ślēṣma' as synonym to ojas because of the similarity in properties<sup>12</sup>.
- Caraka considers rasa as ojas at certain places<sup>13</sup>.
- Some ācāryas consider rakta as ojas<sup>14</sup>.
- Ōjas is said to be yellowish red purified fluid (blood) present in the heart; first of all it is produced during the foetal life and is the vital substance<sup>15</sup>.
- Ōjas is said to be present all over the body similar to the ghee present all through the milk or like the honey as essence of fruits and flowers<sup>16</sup>.

- Ōjas is the essence of all the body tissues starting right from the rasa to śukra<sup>17</sup>.
- Ōjas is circulated all over the body by the ten circulating arteries<sup>18</sup>.
- Ōjas is said to represent snēha (essence) of the śarīra rasa<sup>19</sup>.
- Ōjas is primarily sweet in nature. It is heavy, cold, soft, oily, transparent, etc. in physical properties<sup>20</sup>.

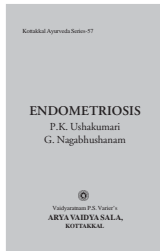
Thus, ojas has to be a substance that represents the essence of the body tissue that should have properties similar to kapha, and that it must be present in rasa-rakta (plasma and blood), and that should circulate all over the body and provide strength to the body tissues and safe guard against exogenous substances tending to create inequilibrium of dōṣas. It is the vital substance present in different forms representing the essence of the seven dhātus differently i.e. rasaja, raktaja, māmsaja, etc. Keeping all the above considerations, the serum proteins, dividing into albumin and globulin fractions, including all the components of immune system like immuno-globulins, opsonins, complement factors, leukotrienes, interleukins, cytokines, etc., would automatically come under the purview of ojas. The different kinds of proteineous substances present in the body-fluid system that protects the body tissues against decay and degeneration and that are present intra-cellularly and extra-cellularly should be taken under different categories of ojas.

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12. प्रकृतस्तु बलं श्लेष्मा विकृतो मल उच्यते ।  
स चैवौजः स्मृतः काये स च पाप्मोपदिश्यते ॥  
(च. सू. १७/११७)
13. रसश्रौजः संख्यातः (सु. सू. १५/१९)
14. मलीभवति तत्प्रायः कल्पते किंचिदोजसे ॥  
(च. चि. ८/४१)
15. जीव शोणित मप्योजः शब्देनामनन्ति केचित्  
(सु. सू. डलहण १५/१९)
16. हृदि तिष्ठति यच्छुद्धं रक्तमीषत्सपीतकम् ।  
ओजः शरीरे संख्यातं तन्नाशान्ना विनश्यति ॥
- प्रथम जायते ह्योजः शरीरेऽस्मिच्छरीरिणाम् ।  
सर्पिवर्णं मधुरसं लाजगन्धि प्रजायते ॥  
(च. सू. १७/७४-७५)
17. भ्रमरैः फलपुष्पेभ्यो यथा संभ्रियते मधु ।  
तद्वदोजः स्वकर्मभ्यो गुणैः संभ्रियते तृणाम् ॥  
(च. सू. १७/७६)
18. रसादीनां शुक्रान्तानां धातूनां यत्परं तेजस्तत ।  
खलु ओजस्तदेव बलमित्युच्यते,  
स्वशास्त्रसिद्धान्तात् । (सु. सू. १८/२३)
19. ओजोवहाः शरीरेऽस्मिन् विधम्यन्ते समन्ततः ॥  
येनौजसा वर्तयन्ति प्रीणिताः सर्वदेहिनः ।  
(च. सू. ३०/८-९)
- देहः सावयवस्तेन व्याप्तो भवति देहिनाम् ।  
तद् भावाच्च शीर्यन्ते शरीराणि शरीरिणाम् ॥  
(सु. सू. १७/२२)
20. यच्छरीररसस्नेहः प्राणा यत्र प्रतिष्ठिताः ॥  
(च. सू. ३०/११)

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Endometriosis is a gynecological problem occurring in some females during the fertility period. It is characterized by the formation of endometrium like cells on the ectopic parts of the body other than in the uterus, like ovaries, parts of viscera, appendix, or even remote places like lungs and brain. As per the influence of the female hormonal stimulation, it acts as bleeding spots, just like the endometrium and manifest a variety of symptoms, and is a real agony for the patient.

## ESTIMATION OF *RUBIA CORDIFOLIA* AND ITS ADULTERANT IN THE RAW DRUG MIXTURES

A. Thankamma\*

**Abstract:** *Rubia cordifolia* Linn. is an important medicinal plant used in large quantities for more than 60 ayurvedic formulations. Its root is the officinal part. But it is usually obtained as admixed with its stem called *kōlmañjaṭṭi*. This paper discusses a few simple and novel techniques evolved for the estimation of *Rubia cordifolia* in raw drug mixtures, even in powdered lots.

### Introduction

Quality of a medicine mainly depends on the genuineness of the ingredients. Adulteration has now become very common even in drug industry. Hence standardization has become quite inevitable for quality medicines<sup>1</sup>. The plant *Rubia cordifolia* Linn., known as *mañjiṣṭha* in Sanskrit, *mañjaṭṭi* in Malayalam and Indian madder in English, is an important component used for more than 60 ayurvedic formulations<sup>2,3,4</sup>. The root is the officinal part<sup>5</sup>. Previous paper describes some techniques for the identification/differentiation of *mañjaṭṭi* in raw drug mixtures<sup>6,7</sup>. But it is usually obtained as admixed with its stem called *kōlmañjaṭṭi* (*civaḷḷikōṭṭi* in local market). No technique has so far been seen developed for the estimation of *mañjaṭṭi* in raw drug mixtures.

Of various physico-chemical standards of the genuine and adulterant, fibre content, sugar content, water soluble extractive, alcohol

soluble extractive and TLC pattern showed marked difference between the two samples and these were taken as the criteria for the identification/ differentiation of the genuine and the adulterant. The parameters water-soluble extractive, alcohol soluble extractive, fibre content and sugar content were selected for the estimation purpose.

### Materials and methods

Air-dried *mañjaṭṭi* and *kōlmañjaṭṭi* were weighed separately and mixed in different proportions (Table 1); and water and alcohol soluble extractives, fibre and sugar contents of all the samples were determined. A brief outline of the determination of those processes is given below.

### Fibre content

3g sample, defatted with Petroleum Ether (60-80) in a soxhlet apparatus, digested with diluted sulphuric acid, was filtered, washed and then

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digested with diluted Sodium hydroxide solution, and again filtered, washed, dried and weighed; it was then incinerated and the weight of ash obtained found out under the specific conditions mentioned<sup>8</sup>. The difference between the weight of dried material and that of ash obtained gives the fibre content of the sample.

#### Sugar content

3g sample was refluxed with 100 ml of water for one hour and filtered. The filtrate was then treated with solid neutral lead acetate; the precipitate filtered off and the filtrate was treated with solid oxalate to remove the excess of lead and filtered. A known volume of the clear filtrate was treated with Fehling solutions A & B and the cuprous oxide formed estimated by permanganometry (Munson & Walker method)<sup>9</sup>. The value so obtained is the reducing sugar content of the sample.

Another volume of the clear filtrate was hydrolyzed with 6N Hydrochloric acid by boiling; and cooled and neutralized the excess acid with solid sodium carbonate. The sugar content of the resulting solution was determined

TABLE 1

Sample No	Weight of 'M'	Weight of 'KM'	% of 'M'	% of 'KM'
I	0	50	0	100
II	10	40	20	80
III	20	30	40	60
IV	30	20	60	40
V	40	10	80	20
VI	50	0	100	0
VII	5	15	25	75
VIII	10	10	50	50
IX	15	5	75	25

M = Mañjaṭṭi, KM = Kōlmañjaṭṭi

as above. The value so obtained is the total sugar content of the sample.

#### Water-soluble extractive

A known weight (5g) of the sample was refluxed with water in a soxhlet apparatus. The extraction continued until the extract becomes colourless; the extract then evaporated, dried and weighed. The percentage weight of water-soluble extractive was calculated from the weight of the residue.

TABLE 2

Sample No	Mañjaṭṭi	Water soluble extractive	Alcohol soluble extractive	Fiber content	Reducing sugar content	Total sugar content
I	0	17.2	16.74	35.75	5.00	8.10
II	20	26.6	20.40	29.80	7.60	12.20
III	40	35.6	27.30	25.47	9.10	16.50
IV	60	43.6	31.92	21.45	10.35	19.90
V	80	50.4	47.88	18.83	12.40	25.30
VI	100	60.3	56.10	11.37	15.20	34.50
VII	25	27.5	22.75	32.66	6.40	10.00
VIII	50	39.0	29.68	22.20	9.80	15.70
IX	75	48.8	35.98	18.02	10.20	15.25



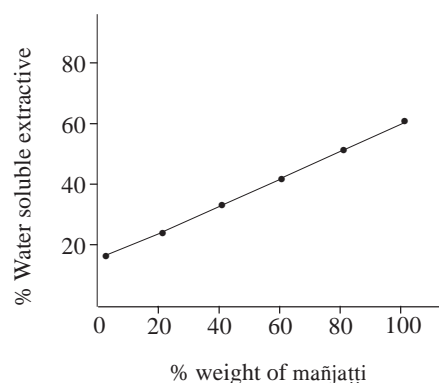
### Alcohol-soluble extractive

The above procedure was repeated with alcohol instead of water. The percentage weight of alcohol-soluble extractive was calculated from the weight of the residue.

### Results and discussion

On the analysis of water-soluble extractive, alcohol-soluble extractive, fibre content and sugar content of all the nine samples, it was observed that the values obtained for the mixtures were in between that of mañjaṭṭi and kōlmañjaṭṭi (Table 2). Another important point noted was that the variation depends on the proportion of the individual species in the mixture. In other words a parameter increases or decreases with the proportion of mañjaṭṭi. For eg., fibre content decreases with the proportion of mañjaṭṭi. But in the case of sugar content, it increases with the increase of the mañjaṭṭi. In short, the increase/decrease of the content is directly proportional to the concentration of mañjaṭṭi. Utilizing this content, a method was developed for the estimation of mañjaṭṭi in the raw drugs mixtures.

A standard graph was drawn with % of concentration of mañjaṭṭi (0,20,40,60,80,100) Vs % of water-soluble extractive values obtained for those samples. (Graph I) A linear graph was obtained. Using this graph the % composition of mañjaṭṭi in any sample can be found out by determining its water-soluble extractive. As a confirmatory test, the values obtained for the water-soluble extractive of 25%, 50%, 75% of mañjaṭṭi were compared with the graph. In the case of water-soluble extractive, the values obtained from the graph

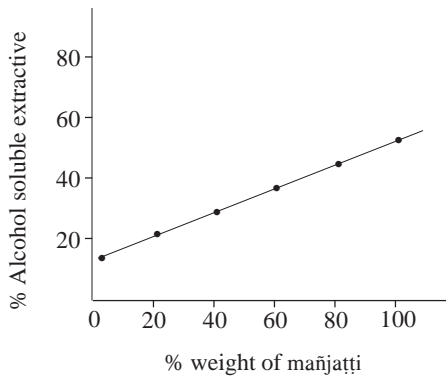


Graph I

TABLE 3

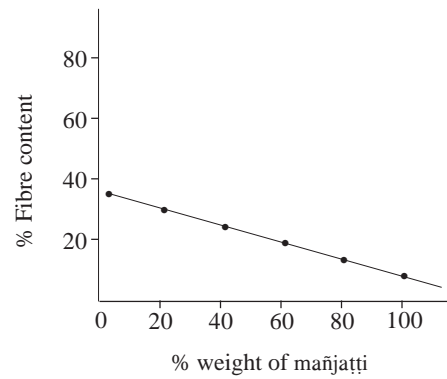
Test	Sample No. VII		Sample No. VIII		Sample No. VIII	
	Actual % wt. of mañjaṭṭi	% wt. of mañjaṭṭi from graph	Actual % wt. of mañjaṭṭi	% wt. of mañjaṭṭi from graph	Actual % wt. of mañjaṭṭi	% wt. of mañjaṭṭi from graph
Water soluble extractive	25	24.5	50	50	75	74.5
Alcohol soluble extractive	25	25	50	50.5	75	75
Fibre content	25	15	50	52	75	75
Reducing sugar	25	18	50	50	75	58

coincide with that of theoretical value. Similarly standard graphs were drawn for the other parameters and compared with the theoretical value. (Graph II, III, IV) The values obtained from the graph (Table III) reveals that most of them come near to the theoretical value. The water-soluble extractive and alcohol soluble extractive gave almost the same theoretical value. The fibre content shows variation with the 25% sample. In the case of reducing sugar,



Graph II

there was variation with 25% & 75% samples. But the 50% sample gives the values same/near to the theoretical value for all parameters. In this sample both mañjaṭṭi and kōlmañjaṭṭi were in 1:1 ratio. Hence the difference showed by 25% and 75% samples might be due to the non-equal distribution of mañjaṭṭi and kōlmañjaṭṭi in the portion taken for analysis. As the content is proportional to the concentration of mañjaṭṭi and kōlmañjaṭṭi even distribution of them is a condition for the study. Hence, sampling was very important. Sampling was done after proper mixing. Proper

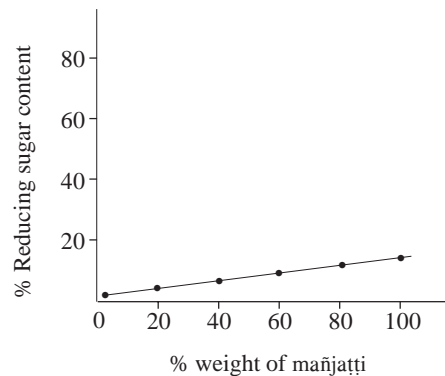


Graph III

selection of sample and analysis of more than 3 samples helped to get better results. However, the estimation of mañjaṭṭi in any sample, including powdered lots can be done with the determination of the four parameters of the sample and the standard graph.

### Conclusion

No authentic test has so far been seen developed for the estimation of mañjaṭṭi in raw drug mixtures. Very often instead of roots, it is obtained as admixed with other parts of the plants and utilized as raw drug by several medicine manufactures, which will certainly affect the quality of medicine. This simple and



Graph IV

rapid method involving the determination of four parameters make it possible to estimate mañjatti in raw drug mixtures even in the powdered lots. This can easily be done in any quality control laboratory. An important inference of the study is that adulteration in raw drugs is not uncommon and the development of techniques to identify/differentiate and estimate the genuine drugs is possible, which in turn make the ancient Indian System of Medicine, an International System of Medicine for imparting good health and happiness to all.

#### Acknowledgement

The author is thankful to Sri N. Ramiah, Research Officer (Rtd.), Regional Research Institute, Thiruvannathapuram for the suggestion to initiate the work and valuable guidance; and is also grateful to Dr. C.P.R. Nair, Asst. Director (Rtd.), RRI, Thiruvannathapuram, and Dr. L. Saradamma, Director (Rtd.), P.G Centre, Thiruvannathapuram for the facilities provided for this work.

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## PHARMACOGNOSTICAL STUDIES ON *CURCUMA LONGA* LINN. AND *EMBLICA OFFICINALIS* GAERTN.

Z. Mary, K.G.Vasanthakumar and T.Bikshapathy\*

**Abstract:** This paper deals with the macro and microscopical studies along with physico-chemical, UV, fluorescence, TLC and preliminary phytochemical studies on the rhizome of *Curcuma longa* and the fruit lobe of *Embllica officinalis*.

### Introduction

Vāgbhaṭa advocates niśāmalakī, a combination of rhizome of niśā (*Curcuma longa* Linn.) and fruit lobe of āmalakī (*Embllica officinalis* Gaertn.) for the treatment of pramēha (Yadav *et al.* 2001). Both, niśā, a well known blood purifier, and āmalakī, a tonic, has potent rasāyana effect which has tridōṣa śāmaka properties also. Pharmacognostical studies of these drugs were taken up considering their therapeutic efficacy.

### Materials and methods

The rhizomes of niśā and dry fruits of āmalakī were procured from the local market in Bangalore. Macro and microscopical studies were carried out following Wallis (1967), and physical constants and extractive values determined as per Indian Pharmacopoeia (1966). The fluorescence characters of the powdered drugs were observed under U-V light according to Chase and Pratt(1949), and the TLC studies carried out according to Igon Stahl

(1969). The preliminary photochemical studies were carried out according to Kokate C.K. (1993).

### 1. Niśā (*Curcuma longa* Linn.)

#### Morphological description

A perennial herb, about 60-90cm in height, with short stem and tufts of erect leaves; rhizomes are short broad and yellow in colour; leaves simple, very large, petiole as long as the blade, oblong-lanceolate, tapering to the base up to 45 cm long; flowers pale yellow in spikes concealed by the sheathing petioles, flowering bracts pale green.

#### Macro and microscopical characters

Rhizomes are ovate, pear shaped, oblong-cylindrical and short branched, 4 to 7 cm long, 1 to 1.5 cm wide; colour deep yellow to orange with root scar and encircling ridge-like rings; fracture is horny and cut surface is resinous. Outer surface is deep yellow to brown and longitudinally wrinkled (Fig. I). Taste is pungent and bitter; odour distinct and aromatic.

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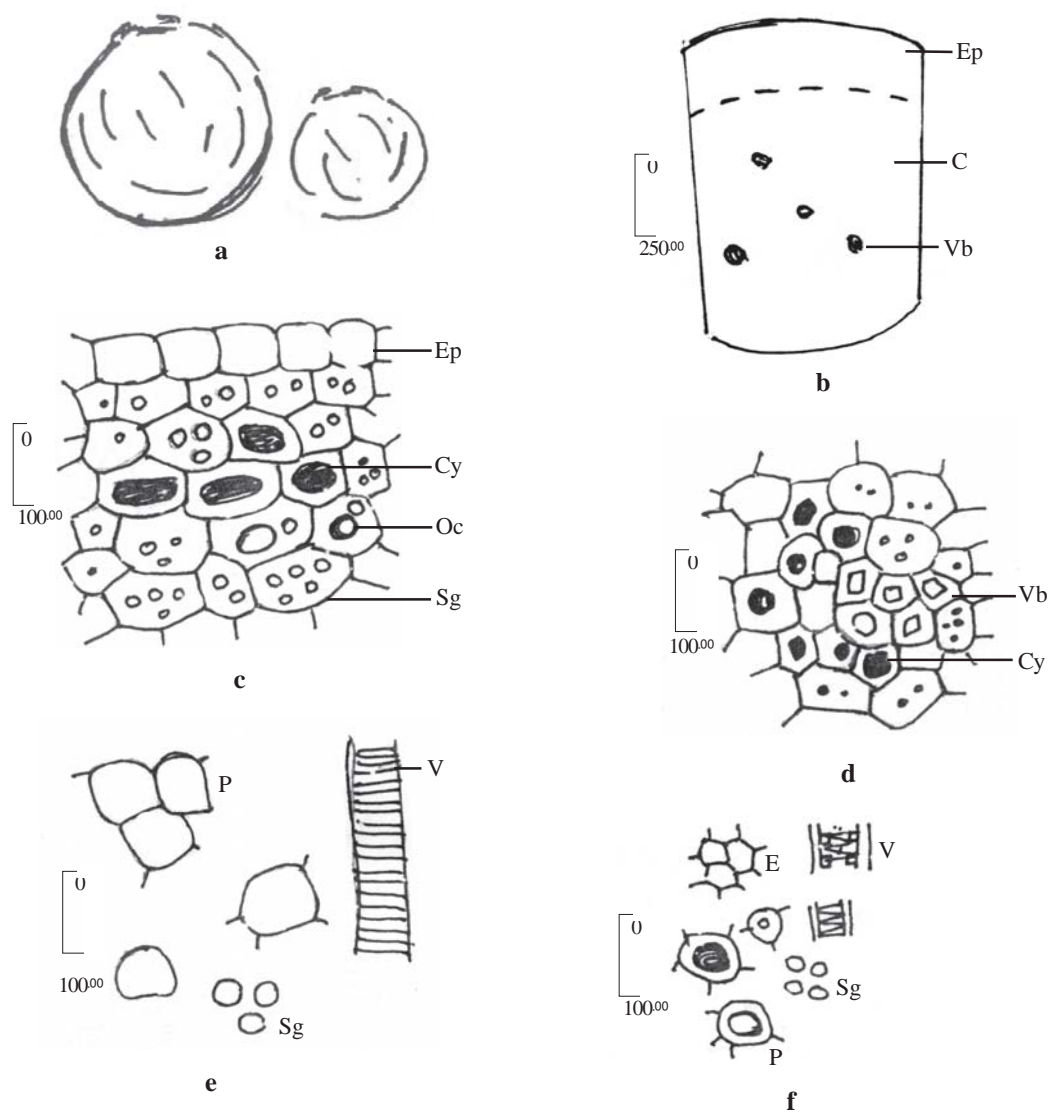


Fig. I a - f *Curcuma longa* Linn. - Rhizome : Macro and microscopical characters

a) Rhizome b) TS of rhizome diagrammatic c) TS of rhizome enlarged

d) Inner portion enlarged e) Macerate f) Powder study

Ep. Epidermis C. Cortex Vb. Vascular bundle Cy. Cell with yellow content  
Oc. Oil cell Sg. Starch grain P. Parenchyma V. Vessel E. Epicarp

TABLE 1  
Measurements of different tissues in <sup>.00</sup>  
(*Curcuma longa* Linn.)

Sl. No	Tissue	Measurement
1	Epidermis	4-5-6 x 4-5
2	Cortex (T)	15-20-25 x 10-12
3	Starch grains (T)	1-2 x 1-2-3
4	Vessel (M)	30-35-40 x 5-8

T - Transverse; M - Macerate

TABLE 2  
Physico-chemical studies (*Curcuma longa*)

Parameters (%)	Results
Foreign matter	less than 2
Loss on drying at 110°C	1.23
Ash content	3.15
Water soluble ash	1.20
Acid insoluble ash	0.72
Extractive values:	
a. Petroleum ether	0.72
b. Benzene	5.87
c. Chloroform	0.97
d. Ethanol	3.80
Solubility at room temp.	
a. Ethanol	6.98
b. Water	10.88
Extractable matter (hot)	12.53
Volatile oil	4.5
Swelling index (ml)	6
Foaming index	less than 100
Inorganic constituents (qualitative)	Carbonate, Sulphate, Calcium, Magnesium, Sodium and Potassium

TABLE 4  
Organic constituents in *Curcuma longa*

Sl. No	Phytochemicals screened	Results
1	Steroids	+
2	Triterpenoids	-
3	Flavonoids	+
4	Phenols	+
5	Tannins	+
6	Sugar	+
7	Saponins	-
8	Alkaloids	-

+ positive; - negative

A transverse section of rhizome shows single layered epidermis and scattered vascular bundles; epidermis is single layered with thin walled cells; cortex consists of thin walled parenchyma cells; starch grains, oil droplets and yellow contents are scattered in the parenchyma cells; vascular bundles are collateral, closed and are few in number (Fig. I b,c,d). Macerate of the rhizome shows vessels with spiral thickenings and parenchyma cells (Fig. I e)

## 2. *Āmalakī (Emblīca officīnalis Gaertn.)*

### Morphological description

A small to medium sized deciduous tree with thin light grey bark exfoliating in small thin irregular flakes; leaves simple, feathery with narrow, oblong, pinnately arranged leaflets; flowers greenish yellow; fruits drupe, globose, fleshy, shiny with light coloured specks. Fruits contain 6 to 8 lobes and trigonous seeds.

### Macro and microscopical characters

Fruits are fleshy, globose, 1.5 to 5 cm diameter, smooth, shining, pale yellow with six obscure vertical furrows enclosing 6 trigonous seeds in 2-seeded 3 crustaceous cocci; distinctly marked with lobes; the taste of lobes is sour and astringent. (Fig. II)

TABLE 3  
TLC Studies (*Curcuma longa*)

Extractives	Adsorbent	Solvent System	Spraying reagent	Rf Values
Petroleum Ether 60-80°C	Silica Gel G	Benzene: Ethanol (19:1)	50% H <sub>2</sub> SO <sub>4</sub> in Methanol	0.10, 0.17, 0.22, 0.30, 0.46, 0.61, 0.70, 0.80, 0.92.
Benzene	Silica Gel G	Benzene: Ethanol (9:1)	50% H <sub>2</sub> SO <sub>4</sub> in Methanol	0.13, 0.37, 0.52, 0.65, 0.75, 0.84, 0.90, 0.95.
Chloroform	Silica Gel G	Chloroform: Methanol (4:1)	50% H <sub>2</sub> SO <sub>4</sub> in Methanol	0.10, 0.45, 0.56, 0.73, 0.84, 0.88.
Ethanol	Silica Gel G	Chloroform: Methanol (3:1)	50% H <sub>2</sub> SO <sub>4</sub> in Methanol	0.18, 0.34, 0.73, 0.93, 0.97

TABLE 5  
Fluorescence analysis (*Curcuma longa*)

Sample + Reagent	OBSERVATIONS		
	Ordinary light	UV longwave 365cm	UV shortwave 254cm
Powder as such	Yellow	Pale yellow	Canary yellow
Powder + 1N.HCl	Yellow	Canary yellow	Canary yellow
Powder + 1N.NaOH	Red	Brown	Beetroot red
Powder + 1N.NaOH in MeOH	Red	Orange yellow	Red
Powder + 50% KOH	Red	Brown	Brown
Powder + 50% H <sub>2</sub> SO <sub>4</sub>	Purple	Black	Dark brown
Powder + Con. H <sub>2</sub> SO <sub>4</sub>	Purple	Black	Coffee brown
Powder + 50% HNO <sub>3</sub>	Dark reddish brown	Black	Dark green
Powder + Con. HNO <sub>3</sub>	Yellow	Reddish brown	Yellowish green
Powder + Acetic acid	Yellow	Canary yellow	Yellow
Powder + Iodine water	Dark green	Dull yellow	Deep green

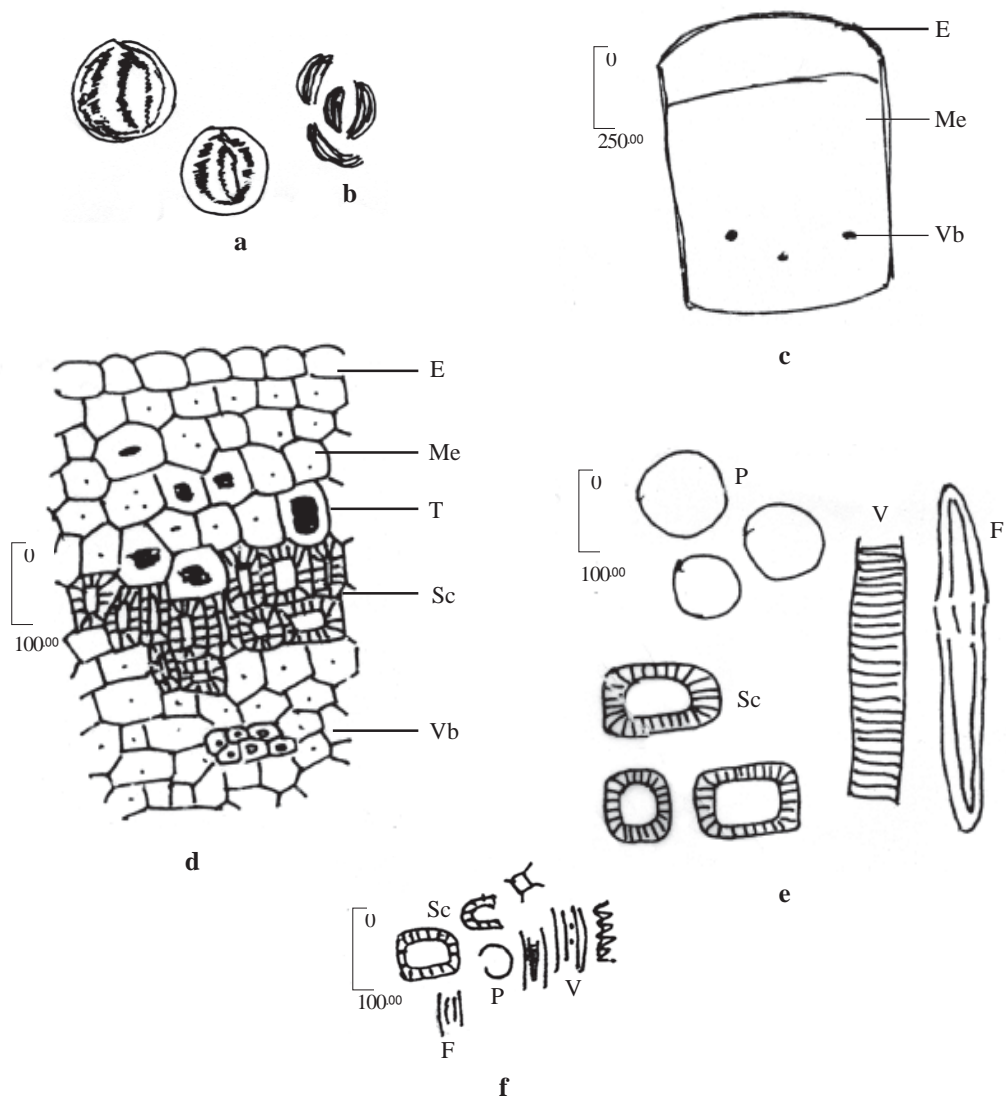


Fig. II a - f *Emblica officinalis* Gaertn. - Fruit : Macro and microscopical characters  
 a) Fruit b) Dry fruit lobe c) TS of fruit lobe diagrammatic  
 d) TS of fruit lobe enlarged e) Macerate f) Powder study

Ep. Epidermis Me. Mesocarp Vb. Vascular bundle T. Tannin Sc. Stone cell  
 P. Parenchyma V. Vessel F. Fiber.



TABLE 6  
Measurements of different tissues in <sup>.00</sup>  
(*Emblica officinalis*)

Tissue	Measurement
EPICARP:	
Epidermis (T)	20 - 21 - 24 x 5 - 8
MESOCARP:	
Parenchyma (T)	35 - 40 - 45 x 25 - 35
Stone cell (M)	37 - 38 - 46 x 25 - 35

T - Transverse; M - Macerate

TABLE 7  
Physico-chemical studies (*Emblica officinalis*)

Parameters (%)	Results
Foreign matter	less than 2
Loss on drying at 110°C	7.24
Ash content	3.77
Water soluble ash	1.07
Acid insoluble ash	1.70
Extractive values:	
a. Petroleum ether	0.35
b. Benzene	0.89
c. Chloroform	0.31
d. Ethanol	17.51
Solubility at room temp.	
a. Ethanol	15.72
b. Water	18.31
Extractable matter (hot)	22.68
Volatile oil	Nil
Swelling index	2 ml
Foaming index	less than 100
Inorganic constituents (qualitative)	Carbonate, Sulphate, Chloride, Calcium, Magnesium, Sodium, Phosphate, Potassium and Iron

TABLE 9  
Organic constituents in *Emblica officinalis*

Sl. No	Phytochemicals screened	Results
1	Steroids	+
2	Triterpenoids	-
3	Flavonoids	+
4	Phenols	+
5	Tannins	+
6	Sugar	+
7	Saponins	-
8	Alkaloids	+

+ positive; - negative

Transverse section of the fruit lobes shows outer epicarp and inner mesocarp. Epicarp consists of epidermis with thin walled cells. Mesocarp consists of 4 to 5 layered parenchyma cells. Stone cells vary in size and shape with lumen narrow. Vascular bundles few in numbers and are found in the mesocarp. Oil cells and tannin are found in the parenchyma cells (Fig.II, b,c,d). Macerate of the fruit lobe shows parenchyma cells, fibers and vessels (Fig. II, e).

#### Acknowledgement

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TABLE 8  
TLC Studies (*Emblca officinalis*)

Extractives	Adsorbent	Solvent System	Spraying reagent	Rf Values
Petroleum Ether 60-80°C	Silica Gel G	Benzene: Ethanol (19:1)	50% H <sub>2</sub> SO <sub>4</sub> in Methanol	0.20, 0.40, 0.55, 0.66, 0.80, 0.94.
Benzene	Silica Gel G	Benzene: Ethanol (9:1)	50% H <sub>2</sub> SO <sub>4</sub> in Methanol	0.11, 0.30, 0.73, 0.88, 0.93.
Chloroform	Silica Gel G	Chloroform: Methanol (4:1)	50% H <sub>2</sub> SO <sub>4</sub> in Methanol	0.83, 0.92.
Ethanol	Silica Gel G	Chloroform: Methanol (3:1)	50% H <sub>2</sub> SO <sub>4</sub> in Methanol	0.17, 0.28, 0.52, 0.59, 0.80, 0.90, 0.95

TABLE 10  
Fluorescence analysis (*Emblca officinalis*)

Sample + Reagent	OBSERVATIONS		
	Ordinary light	UV longwave 365cm	UV shortwave 254cm
Powder as such	Brown	Brownish green	Ash grey
Powder + 1N.HCl	Deep brown	Muddy brown	Greyish green
Powder + 1N.NaOH	Coffee brown	Dark brown	Brown
Powder + 1N.NaOH in MeOH	Deep brown	Grey	Dark green
Powder + 50% KOH	Coffee brown	Black	Dark green
Powder + 50% H <sub>2</sub> SO <sub>4</sub>	Dark brown	Black	Deep green
Powder + Con. H <sub>2</sub> SO <sub>4</sub>	Brown	Black	Coffee brown
Powder + 50% HNO <sub>3</sub>	Reddish brown	Brown	Yellowish green
Powder + Con. HNO <sub>3</sub>	Yellow	Brown	Yellowish green
Powder + Acetic acid	Deep brown	Steel grey	Dark green
Powder + Iodine water	Dark brown	Grey	Muddy green

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## DERMATITIS IN AYURVEDA WITH SPECIAL REFERENCE TO PSORIASIS (KIṬIBHA)

Shailesh Jain and O.P. Gupta\*

**Abstract:** All most all ayurvedic classics discuss basic anatomical and physiological aspects of the skin and skin diseases i.e. in which layer which disease occurs, etc. Generally, most of the skin diseases are described under the heading kuṣṭha, which is further divided into two, mahākuṣṭha and kṣudrakuṣṭha. This paper discusses dermatitis in ayurveda with special reference to psoriasis (kiṭibha), a subtype of kṣudrakuṣṭha. Its classification, management, etc. are also dealt with.

### **Skin and dermatitis**

#### **Anatomy of skin (tvak)**

Tvak is external or outermost protective covering, which envelops the whole surface of the body and is the seat of sparśajñānēndriya (tactile sensation); it is very extensive among all five jñānēndriyas. Sensation of touch is situated in tvak; it is the largest organ of the body in surface area.

Caraka holds that the formation of skin during embryogenesis is 12 weeks of gestational age. This formation through transformation during fetal stage by three dōṣas is like an activity like formation of a layer over boiling milk. According to ayurveda, tvak is derived from mātrjabhāva and is the seat of vāyu, which is responsible for tactile sensation. Tvaca is the upadhātu of māmsadhātu.

Regarding the number of layers of tvaca,

Suśruta mentions seven layers while Caraka quotes six naming the two only.

The first layer avabhāsini reflects colour (varṇa) and complexion (chāya). It regulates the evaporation of water and is known as udakadhara. The second layer is called asṛgdhara, because it protects the raktadhātu (Table 1).

According to modern scientists, skin consists of two principal layers i.e. epidermis and dermis and they are further subdivided into seven layers, which is almost similar to the classification of Suśruta (Chart 1).

#### **Physiological concept of tvak**

Skin is the seat of tactile sensation; since there is the predominance of vāyubhūta, it is called sparśanēndriya, which envelops the entire body. It also provides various colours to the body. It is the seat of bhrājakapitta, and thus

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performs the function of absorption and assimilation of drugs like oils, lotions, ointments and other topical medications applied through massage, fomentation and tub baths. Bhrājakapitta promotes lustre to the body and regulates body temperature; sweat is the excretory product of mēdōdhātu.

The origin of the sweat duct is situated in the inner part of skin where the adipose tissue is more in quantity, and the hair follicle is situated in the epidermis of the skin. Sweat keeps the skin soft and tender and regulates evaporation of water; it is the seat of chāyā and prabhā (lustre). The chāyā overshadows the body colour whereas prabhā makes it shine; different slides of chāyā and prabhā help in forecasting the good and evil of the individuals.

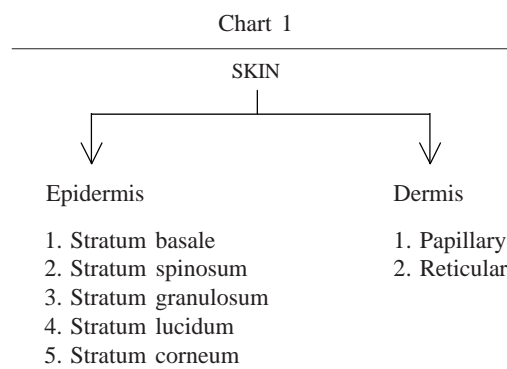


TABLE 1

Susruta	Caraka	Vagbhata	Thickness of layers
Avabhāsini	Udakdhara	Udakdhara	1/18 vr̥hi
Lōhitā	Asrgdhara	Asrgdhara	1/16 vr̥hi
Śvētā	-	-	1/12 vr̥hi
Tāmrā	-	-	1/8 of vr̥hi
Vēdhiṇī	-	-	1/5 of vr̥hi
Rōhiṇī	-	Prāṇadhara	1 vr̥hi
Mānsadharā	-	-	2 vr̥hi

## Dermatitis

Dermatitis is evidenced by inflammation of skin with itching, redness and various skin lesions. It is a symptom found in most of the skin diseases; in other words, it is a symptom, rather than a disease.

Caraka includes all dhātus except raktadhātu under the heading of daśavidhaparīkṣa and explains tvaksāralakṣaṇa rather than a rasasārapuruṣa<sup>1</sup>.

In persons having constitutional essence of skin (tvaksāra), the skin would be unctuous, lustrous, smooth, soft and clear with deep-rooted and sparse hairs. This essence indicates happiness, good fortune, power, enjoyments, intelligence, learning, health, cheerfulness and longevity. All these are the signs and features of tvaksāra or a healthy skin explained by Caraka (Vimānasthānam). Probably lack of these features could be considered as dermatitis in ayurveda.

## Kuṣṭha and kṣudrarōga

Kuṣṭha is a disease counted as mahārōga in ayurveda. There are two types of kuṣṭha described in ayurvedic classics i.e. mahākuṣṭha and kṣudrakuṣṭha. Mahākuṣṭha is subdivided into seven viz. kapāla, udumbara, maṇḍala, ṛṣyajihva, puṇḍarīka, sidhma and kākanakha; and kṣudrakuṣṭha into eleven viz. ēka, carmākhyā, kiṭibha, vipādika, alāsaka, dadru, carmada, pāma, visphōṭa, sataru and vicarcika<sup>2</sup>.

According to Carakasamhita, that which is like a black and reddish piece of earthen jar, rough, coarse, thin and exceedingly painful is known as kapālakuṣṭha, and which is hardly curable; that which is associated with burning sensation, itching, pain, redness, brown skin hairs and

that resembles ripe fruits of udumbara is known as udumbara kuṣṭha. White, red, stable, extensive, unctuous, with raised patches and joined with each other are the characteristics of maṇḍalakuṣṭha, which is hardly curable. That which is rough, with red margins, internally blackish, painful and similar to the tongue of a ṛṣya (antelope) is known as ṛṣyajihvakuṣṭha. That which is whitish with red margins, raised, with burning sensation and simulating petals of a lotus is known as puṇḍarīkakuṣṭha. Sidhmakuṣṭha appears mostly on chest; white and coppery in colour, thin, produces dust-like powder on rubbing, resembles flowers of bottle-gourd, etc. are the general features of sidhmakuṣṭha. The characteristics of kākanakhakuṣṭha are: that simulates guñjā seeds in colour, does not suppurate and would be exceedingly painful; here, the symptoms of all the three dōṣas may appear and it is incurable.

#### **Kṣudra tvakrōga**

Suśruta describes forty-four types of kṣudra tvakrōgas. The following are the kṣudra tvakrōgas that are highly related to skin disorder.

1. Ajagallikā: This is a typical disease generally finds in small children; it is characterized by waxy, painless, papule of size of green gram on the skin. This is a vāta-kapha disorder.
2. Andhālājī: This is also due to vāta-kapha disorder. It is hard papule without opening with little pus inside.
3. Kachapikā: These arc papules that appear five or six in a group, very hard and that resembles the shell of a tortoise.
4. Indravṛddhā: These are multiple small

papules resembling the central part of a lotus flower. This is caused by vāta and pitta.

5. Gardhābhikā: These are round elevated small patches on the skin, which causes pain. This is caused by vāta-pitta disorder.
6. Pañcikā: These are hard papule grows inside the ear, very painful and is due to vāta-pitta disorder. This is similar to furuncle.
7. Kakṣā: This swelling is black colour and appears at the side of arms, shoulders, axillae due to vitiation of pitta. This may be correlated with herpes zoster.
8. Agnirōhiṇi: These are papules in axillae, which burrows into muscles and destroy them; they are associated with burning sensation and fever. It may be fatal if not treated properly.
9. Viḍārikā:- These are round papules appear in axillae or groins resembling viḍārikanda tuber, it is caused by all dōṣas and there may be symptoms of all dōṣas.
10. Pādādāri: It is fissures manifesting on the feet due to aggravation of vāta. In this case there may be severe pain and sometimes bleeding from these fissures.
11. Kadarā: These are a hard corn-like development on the feet due to friction or constant contact with any hard object like shoe nail, etc.
12. Dāruṇakā: Due to vitiation of vāta and kapha, the skin on the scalp gets cracked, becomes rough and dry with itching; this resembles dandruff.
13. Yuvānpiṭakā: This is also called as mukhadūṣika. These papules appear on

the face resembles the sprouts on the bark of śālmālī tree. This is generally seen in youth due to vitiation of kapha, vāta and rakta.

14. Padminīkantakā: These are circular-like white patches, studded with papules and pestered with itching on the skin; it is caused by vitiation of kapha and vāta.
15. Nīlikā: These are broad or small, blue or black patches that appear on the skin.
16. Vyanga: Due to anger or physical exertion, aggravated vāta and pitta, gets localized in the face. This produces painless, thin, black patches on the skin.

### **Psoriasis**

Psoriasis is a noninfectious inflammatory disease of the skin, characterized by well defined erythematous plaques with large adherent silvery scales covering loops of dilated superficial capillaries underneath which are presented as tiny bleeding points on removal of scale. This is known as Auspitz sign, which is the specific diagnostic feature of the erythroscamous lesion of psoriasis. This sign is not present in pustular psoriasis.

The auspitz sign may help to differentiate psoriasis from other skin conditions with morphology similar to psoriasis.

### **Extracutaneous manifestations**

Psoriasis is not exclusively a skin disease; its common extracutaneous manifestations are:-

1. Nail:- Frequent changes occur on the nail. They range from minor defects in the nail plate to severe alterations of the nail, with loss of nail plate in pustular forms of psoriasis. The three main morphological alteration found in structure of the nail are:

- i. Pits in the nail plate due to defective keratinisation of the proximal nail fold on dorsal side,
- ii. Brownish macules beneath the nail plate,
- iii. Severe onychodystrophy resulting in a yellowish, keratinous material due to involvement of the nail matrix.

2. Mouth:- Oral lesions of psoriasis are unusual; when present, they are commonly associated with the pustular and exfoliative forms of diseases.

3. Joints:- Psoriatic arthropathy is frequent complication in severe psoriasis and may occur in the absence of cutaneous lesions.

About 1-3% of the population is afflicted by psoriasis. It may occur at any age, but is rare under 10 years and often seen between 15- 40 years. Generally there are four types of psoriasis viz. i) plaque psoriasis, ii) guttate psoriasis, iii) pustular psoriasis and iv) napkin psoriasis.

### **Plaque Psoriasis**

Plaque psoriasis has a very well demarcated margin and is raised above the skin surface (plaque). The affected skin may have variable shade of red colour and the surface is often large with silvery scales. Plaques vary enormously in size and shape; they often stage out discoid but end up polycyclic as several lesions coalesce.

### **Guttate psoriasis**

Guttate psoriasis is mainly seen in children aged 7-14 years; often it develops within 2-4 weeks after an episode of tonsillitis or pharyngitis mostly due to beta haemolytic streptococci. It behaves like an exanthem as the characteristically drop sized lesions. All lesions appear together and usually don't last longer than eight to ten weeks.

### **Pustular psoriasis**

In this type of psoriasis, first skin becomes erythrodermic and then develops sheets of sterile pustules. Sometimes the pustules become confluent so that lakes of pus develop just beneath the skin surface.

### **Napkin psoriasis**

Infantile napkin dermatitis sometimes takes on a psoriatic like appearance as typical psoriatic lesions develop on the scalp and trunk.

### **Etiological factors of psoriasis**

Psoriasis that often occurs in families, have multifactor causes as inheritance, etc.; HLA studies have shown an increased frequency of HLA-B13 HLA-B17 and HLA BW-16 in the affected patients. It is suggested that HLA-B and BW17 reduce the threshold to psoriasis.

### **Trigger factors**

1. Physical trauma (Koebner's phenomenon): Physical trauma is a major factor in eliciting lesions; rubbing and scratching stimulate the psoriatic proliferation.
2. Infections: Acute streptococcal infection precipitating guttate.
3. Stress: Stress is a major factor that can flare psoriasis as high as 40% in adults and children.

### **Pathogenesis**

The principal abnormality in psoriasis is an alteration of the cell kinetics of keratinocytes. The major change is the shortening of the cell cycle from around 311 hours to 36 hours, which results in 28 times the normal production of epidermal cell. The epidermis and dermis appear to respond as one integrated system. The changes in the germinative zone of the epidermis and the inflammatory changes in the dermis may trigger the epidermal changes.

Immunological phenomena is a major factor in the pathogenesis of psoriasis. There are many T-cells present in psoriatic lesions surrounding the upper dermal blood vessels; maintenance of psoriatic lesions is considered as ongoing auto-reactive immune response.

### **Kiṭibha**

Definitions to this disease entity can be seen in ayurvedic classics. According to Caraka-saṁhita, dry wound like lesion, which is blackish in colour, rough and hard to touch, is known as kiṭibha<sup>2</sup>. In Suśrutasaṁhita, it is an eruption that exudates a kind of slimy secretion, circular in shape, thick, excessively itching, glossy and black in colour<sup>3</sup>. According to Vāgbhaṭa, kiṭibha is dry, rough in touch (like dry wound), itchy, hard to touch and blackish<sup>4</sup>. Mādhavanidāna defines that it is the lesion black in colour, rough and hard to touch like dry wound<sup>5</sup>.

### **Kiṭibha and psoriasis**

Psoriasis and its symptoms as a whole are not described as a single entity in ayurveda. There are about two thousand skin diseases mentioned in the modern literature of medical sciences.

Caraka states that skin diseases are innumerable hence the description of each and every disease is not possible. Caraka categorizes the skin diseases on the basis of involvement of dōṣas and dhātus that produce the symptoms accordingly.

Keeping this view in the mind the diagnosis and treatment of every skin disease is possible. Caraka, Vāgbhaṭa and Mādhava describe the sign and symptoms of psoriasis, which resembles the kiṭibha.

### **Etiological factors and pathogenesis**

According to Caraka, those who habitually take



incompatible food items and liquids, unctuous and heavy substances, who suppress the natural urges particularly of vomiting, exposed to physical exercise and intense heat after eating, excessively use cold and hot, lightening measures, take diet against the prescribed order, apply cold water immediately after intensive exposure to sun, exertion and fever, take food during indigestion and/or before previous meal is not properly digested, use contraindicated items while undergoing pañcakarma therapy, curd, fish, salt and sour substances, indulge in eating black gram, radish (rice), flour preparations, sesame, milk and jaggery, perform sexual intercourse during indigestion, sleep regularly in day, insult brahmins, teachers (and other respectable persons) and indulge in sinful activities fall prey to leprosy<sup>6</sup>.

In this regard, Suśruta and Vāgbhaṭa give prime importance to dietary factors<sup>7</sup>. In the modern life style, fast food like burger, jams, pizza, tin food, etc. are to be considered as dietary factors responsible for this disease.

### Dōṣa predominance

Carakasamhita refers to skin diseases such as carmākhyā, ēkakuṣṭha, kiṭibha, vipādikā alasāka, etc., and states that they have the predominance of vāta and kapha<sup>8</sup>. Though there are many symptoms described according to prevalence of dōṣas in kuṣṭha, it is very few in the case of kiṭibha. Amongst the symptoms described in kuṣṭha due to vitiated vāta i.e. dryness (rauṣyaṃ), hardness (pāruṣyaṃ), roughness (kharatvaṃ), etc. are observed in kiṭibha also. The symptoms usually found due to vitiated pitta are burning sensation (dāha) and redness (rāga); and due to vitiated kapha, symptoms like whiteness (ṣvētyaṃ), itching

(kaṇḍu), elevation (utsēda) are frequently seen.

Considering the involvement of layer of tvak, Suśruta (śarīrasthāna) explains that, which disease occurs in which layer, etc. from which it can be observed that the layers tāmra and vēdhiṇī are more involved in the case of kiṭibha (Table 2).

### Samprāpti

All the causes and etiological factors, i.e. those are responsible for vitiation of the three dōṣas and that in turn vitiate tvak (skin or rasadhātu), rakta (blood) māmsa (muscle tissue) and āmbu (body fluid like tissue fluid, lymph and serum), taken together, constitute the sevenfold pathogenic substance of kuṣṭha.

All types of kuṣṭha are tridōṣaja and none of them is caused by the vitiation of only one dōṣa. The provoked dōṣas, setting themselves in the vitiated body elements and after getting localized, generate skin lesions, and if no treatment is done at this stage, they further vitiate saptadhātus and produce morbidity.

Eighteen types of kuṣṭha are caused by the involvement of three dōṣas; probably they may be innumerable. The vitiated dōṣas become

TABLE 2

Diseases and the respective layers according to Suśrutasaṃhita

Layer	Rōga
Avabhāsini	Sidmā, padmakāṇṭaka
Lōhitā	Tilakālaka, nyacha, vyaṅga
Śvētā	Carmadaḷa, ajagallikā, māśaka
Tāmra	Kilāsa and kuṣṭha
Vēdhiṇī	Kuṣṭha and viisarpa
Rōhiṇī	Granthi, apaci, arbuda, gaḷagaṇḍa
Māmsadharā	Fistula, abscess, arśa



morbid and the effect of dravatvaguṇa of pitta and klēdaguṇa of kapha on agni leads to agnimāndya, which impairs the digestive power and thus results in the formation of āma-āhāra-rasa and consequently excessive formation of āma is taken place.

Vyānavāyu is the real mediator for spreading dōṣas in the body. The vitiated vāta forces the āmarasa through tiryak siras into different parts of the body and much of it accumulates in the surface of the skin. This accumulation leads to srōtōrōdha which finally results the accumulation of vitiated dōṣa in a particular part of the skin; due to their predominance, they produce different signs and symptoms respectively.

When the four dūṣyas are provoked by the vitiation of tridōṣas, varieties of kuṣṭha take place. The combination of these seven dravyas

is called sapta dravya of kuṣṭha; and no kuṣṭha is manifested by the cause of any one element alone (Chart 2).

### Management of kiṭibha

The management of kiṭibha is broadly divided into two parts viz. i. Purificatory (śōdhana) and ii. Pacificatory (śamana) therapies. Purificatory therapies are further divided into three viz. pūrvakarma, pradhānakarma, paścātkarma (Chart 3).

According to many acāryas, snēhana and svēdana karmas are the only two procedures in pūrvakarma. But Ḍalhaṇa states that one must go for the procedure of dōṣapācana before doing saṁśōdhana<sup>9</sup>. Suśruta suggests that, one whose agni is manda and hard kōṣṭha, should use ghr̥ta along with kṣāra and lavaṇa to promote agni; and then snēhana, svēdana and virēcana procedures are to be done<sup>10</sup>.

Chart 2

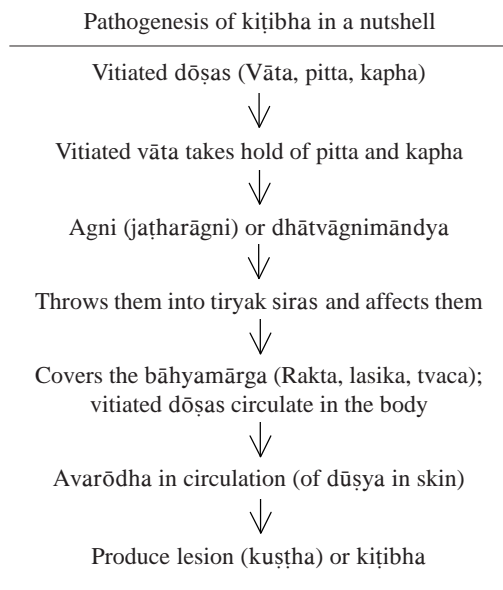
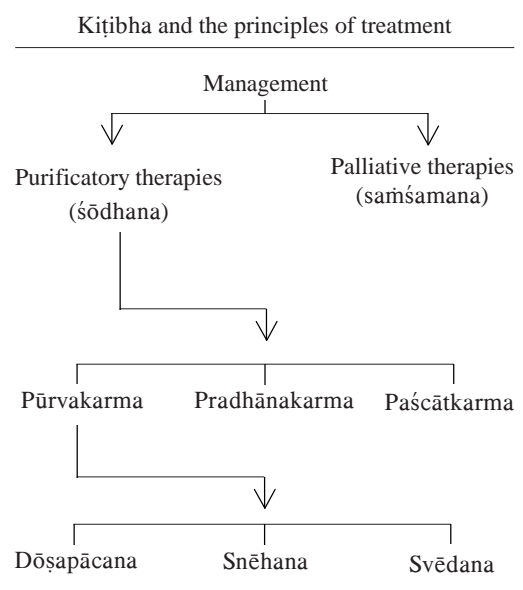


Chart 3



Caraka discusses the importance of snēhana in kiṭibha; it states that dōṣas leave the extremities and proceed to the belly due to increase, oozing maturity, cleaning of the channels and control of vayu<sup>11</sup>.

#### Guṇa of snēhadravya

According to Carakasamhita, snēhana (unction) is that which produces unction, oozing, softness and moistening<sup>12</sup>. It suggests that first of all, snēhana is to be done and then

svēdana; one should undergo both of these before doing either of evacuative, purgative or emetic procedures<sup>13</sup>.

For snēhana, formulations based on ghee such as Tiktaṣaṭpala ghṛta, Mahātikta ghṛta, Mahākhadira ghṛta, Āragvadhādi ghṛta, Pañcatikta ghṛta, etc. are very beneficial.

Caraka discusses the importance of pañca-karma (samśōdhana) therapy. It states that dōṣas sometimes aggravate even after

TABLE 3  
Some of the formulations described in ayurvedic classics for the management of kiṭibha

Sl. No	Name of formulations	Text	Ref. No.
1	Pañcatiktaghṛta guggulu	Bhaiṣajyaratnāvali	54/233-236
2	Kaiśōraguggulu	Śārṅgadharasamhita Bhāvaprakāśam	Ma. Kh. 7/70-81 54/73
3	Guḍūcyādilauha	Bhaiṣajyaratnāvali	27/59
4	Rasamāṇikya	Bhaiṣajyaratnāvali	54/117-122
5	Guḍūcīsatvā	Bhaiṣajyaratnāvali	37/9
6	Pañcanimbādi cūrṇa	Yōgaratnākara Bhaiṣajyaratnāvali	Ku. Ch. Pr. 1-2 54/76-79
7	Ārōgyavardhini vaṭī	Rasaratnasamuccaya	
8	Mahāmañjiṣṭha kvātha	Bhāvaprakāśam Śārṅgadharasamhita	Ch. Pr. 54/105-106 Ma. Kh. 1/140-145
9	Gandhakarāsāyana	Āyuvēdaprakāśa	
10*	Tuvaraka tailam	Bhaiṣajyaratnāvali	54/61
11*	Guḍūcyādi tailam	Bhaiṣajyaratnāvali	27/140-147
12*	A paste of jīvanti, mañjiṣṭha, dāruharidrā, kāmpillakā and tūtha along with ghṛta or taila with sarjarasa and bee wax	Carakasamhita	Chi. 7/120

\*Local application

treatment with lightening and digestion, but they never recur if they are subdued with evacuative therapy<sup>14</sup>; the patient of kuṣṭha having plenty of dōṣas should be evacuated frequently taking care of his strength<sup>15</sup>. Suśruta also describes pañcakarma therapy especially for kuṣṭharōga. It suggests that the patient should be evacuated through vamaṇa on every fifteen days, virēcana on every month, raktamōkṣa after every six months and nasya after every three days<sup>16</sup>.

Vamaṇa (emesis):- Vamaṇa may be induced after snēhapāna with decoction of kuṭaja, madanaphala, yaṣṭimadhu, paṭōla, niṃba, etc.

Virēcana (purgation):- Virēcana may be induced with drugs like ṭṛṣṭ, dantimūla, triphala, etc.

Vasti (enema):- Caraka advocates a number of medicated vasti regimen; among them pañcatikta, pañcaraṣṭika vastis are specially indicated for kuṣṭha. A decoction of paṭōla, niṃba, bhūnimba, rasa and saptaparṇa - each 4 prastha (3.073 kg) - is to be mixed with ghee (1 prastha) and, to which, a paste made out of mustard ghee should be added. This pañcatikta non-unctuous enema alleviates pramēha, abhiṣyanda and kuṣṭha<sup>17</sup>.

### Conclusion

Psoriasis is a noninfectious inflammatory disease of the skin. Ayurveda categorises skin diseases based on the involvement of dōṣas, dhātus and manifestation of symptoms accordingly. The sign and symptoms of psoriasis are identical to kiṭibha explained in ayurveda. Ayurvedic classics describe various systemic formulations such as Gandhaka-rasāyana, Rasamānikya, etc. in the management of kiṭibha (Table 3).

### References:

1. तत्र स्निग्धश्लक्ष्णमृदुप्रदुप्रसन्नसूक्ष्माल्पगम्भीर-सुकुमारलोमा सप्रभेव च त्वक् त्वक्साराणाम् । सा सारता सुखसौभाग्यैश्चर्योपभोगबुद्धिविद्यारोग्य-प्रहर्षणान्यायुष्यत्वं चाचष्टे ॥ (च. वि. ८/१०३)
2. श्यावं किणखरस्पर्शं परुषं किटिभं स्मृतम् ।  
(च. चि. ७/२२)
3. तत् स्निग्धकृष्णं किटिभं वदन्ति ॥ (सु. नि. ५/१४)
4. रूक्षं किणखरस्पर्शं कण्डूमत्परुषासितम् ।  
(अ. ह. नि. १४/२२)
5. किटिभमाहश्यावमित्याद किणखरस्पर्शमिति किणो व्रणस्थानम् (म. नि.)
6. विरोधीन्यन्नपानानि द्रवस्निग्धगुरुणि च ।  
भजतामागतां छर्दिं वेगांश्चन्यान्प्रतिघ्नताम् ॥  
व्यायाममतिसंतापमतिभुक्त्वोपसेविनाम् ।  
शीतोष्णलङ्घनाहारान् क्रमं मुक्त्वा निषेविणाम् ॥  
धर्मश्रमभयार्तानां द्रुतं शीताम्बुसेविनाम् ।  
अजीर्णाध्यशिनानां चैव पञ्चकर्मापचारिणाम् ॥  
नवान्नदधिमत्स्यातिलवणाम्बुनिषेविणाम् ।  
माषमूलकपिष्टान्नतिलक्षीरगुडाशिनान् ॥  
व्यवायं चाप्यजीर्णेऽन्ने निद्रां च भजतां दिवा ।  
विप्रान् गुरून् घर्षयतां पापं कर्म च कुर्वताम् ॥  
(च. चि. ७/४-८)
7. मिथ्याहाराचारस्य विशेषाद्  
गुरुविरुद्धासात्म्याजीर्णाहिताशिन.....  
प्रतिपद्य धातूनभिदूषयति ॥ (सु. नि. ५/३)  
मिथ्याहारविहारेण विशेषेण विरोधिना ।  
.....  
त्वचः कुर्वन्ति वैवर्ण्यं दुष्टाः कुष्ठमुशन्ति तत् ॥  
(अ.ह. १४/१-३)

8. चर्माख्यमेककुष्ठं च किटिभं सविपादिकम् ।  
कुष्ठं चालसकं ज्ञेयं प्रायो वातकफाधिकम् ॥  
(च. चि. ७/२९)
9. अन्येतु संशोध्यस्या पाचनस्नेहन-  
स्वेदनानि पूर्वकर्म ॥
10. मन्दाग्निं क्रूरकोष्ठं च सक्षारलवणैर्घृतैः ।  
सन्धुक्षिताग्निं स्निग्धं च स्विन्नं चैव विरेचयेत् ॥  
(सु. चि. ३३/३९)
11. वृद्ध्या विष्यन्दनात् पाकात्  
स्रोतोमुखविशोधनात् ।  
शाखा मुक्त्वा मलाः कोष्ठं  
यान्ति वायोश्च निग्रहात् ॥ (च. सू. २८/३३)
12. स्नेहनं स्नेहविष्यन्दमार्दसकळेदकारकम् ।  
(च. सू. २२/११)
13. स्नेहमग्रे प्रयुञ्जीत ततः स्वेदमनन्तरम् ।  
स्नेहस्वेदोपपन्नस्य संशोधनमथेतरत् ॥  
(च. सू. १३/९९)
14. दोषाः कदाचित् कुप्यन्ति जिता लङ्घनपाचनैः ।  
जिताःसंशोधनैर्ये तु न तेषां पुनरुद्भवः ॥  
(च. सू. १६/२०)
15. बहुदोषः संशोध्यः कुष्ठी बहुशोऽनुरक्षता प्राणान् ।  
(च. चि. ७/४९)
16. पक्षात् पक्षाच्छर्दनान्य.....त्रिरात्रात्  
त्रिरात्रात् ॥ (सु. चि. ९/४३)
17. पटोलनिम्बभूनिम्बरास्नासप्तच्छदाम्भसः ।  
चत्वारः प्रसृता एको घृतात् सर्षपकल्कितः ॥  
निरूहः पञ्चतित्तोऽयं मेहाभिष्यन्दकुष्ठनुत् ।  
(च. सि. ८/८)



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**ROLE OF SNĒHANA AND SVĒDANA IN THE MANAGEMENT  
OF VĀTAVYĀDHI WITH SPECIAL REFERENCE TO  
BACK-ACHE (OSTEO-ARTHRITIS)**

Rajiv Kumar Relhan\*

**Abstract:** Snēhana and svēdana are two procedures that have been proved very beneficial in ayurveda in the prevention and management of joints pain including upper and lower spine. Both these procedures are the prerequisites of pañcakarma. This paper discusses the role of svēdana and snēhana in the management of vātavyādhi.

**Introduction**

The problem of painful back has been put under the category of vātavyādhi in ayurveda. The back (upper and lower spine) is a complex structure that takes up the responsibility of weight bearing and locomotor functions. It is a major anatomical support for the body structures and transmits the loading forces through the sacroiliac joints to the lower limbs. The fundamental functioning unit is an articular traid composed of two zygoapophysial joints posteriorly, and the intervertebral disc anteriorly. The disc is composed of a nucleus pulposus encompassed by the annulus fibrosus. These structures are arranged in series and stabilized throughout the spine by ligaments.

**Etiology of vātavyādhi**

The etiological factors of vātavyādhi referred to in Mādhavanidāna are:

1. The diet that is rūkṣa (dry), śīta (cold) and alpa (inadequate quantity)

2. Ativyavāya (excessive indulgence in sexual intercourse)
3. Prajāgaraṇam (waking till late hours during night)
4. Viṣamad upacārata (doing improper activities)
5. Dōṣāsṛksravaṇād (expulsion of dōṣa by pañcakarma therapy conducted in an erratic manner and at improper time)
6. Laṅghana (observing life style and diet that creates too much lightness in the body)
7. Pļavana (too much swimming)
8. Ati āghava (walking long distances at a stretch)
9. Ati vyāyāma (Excessive physical exercise)
10. Dhātukṣaya (Malnutrition)
11. Cinta (anxiety – acute and chronic),
12. Śōka (grief),
13. Rōgātikaṛṣanāt (post convalescent asthenia),

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14. Vēgasandhāraṇāt (forcibly resisting the natural urges),
15. Āmād [presence of half cooked rasa (intermediate metabolites) in the blood],
16. Abhighātāt (infliction of trauma),
17. Abhōjanāt (total deprivation of food for long time),
18. Marmabādha (injury to vital organs by trauma or infection)
19. Fall from gaja (elephant), uṣṭra (camel), aśva (horse) or some fast moving vehicle.

The above said etiological factors can be analyzed in the light of principles of modern medicine with special emphasis upon the back pain:

Ativyavāya and pḷavana: These are the kind of physical exercises that require continuous strokes of lower back and upper parts of lower limbs. This may put extra lumbosacral strain resulting in transient disc prolapse, subluxation of facet joints and injury to muscles and ligaments.

Ati āghava and ati vyāyāma: Both of these conditions can cause pain due to over use and stress of the whole spine. This may accelerate the normal degenerative process going on inside the bone cartilages.

Abhighāta: Fall from elephant, camel, horse, from heights and fast moving vehicles cause injury to the spine where there may be ligament fractures and of the bones resulting in acute and chronic backache.

Marmabādha: Rheumatic heart may cause rheumatic arthritis in which there is shifting pain in various joints of the body including spine. Pulmonary Tuberculosis may spread to joints causing Pott's spine. Even some neural tumors may also cause pain of the back.

Prajāgaraṇa: This condition aggravates mental and muscular tension. Muscle of the back may pass into a condition of spasm thereby resulting muscular backache.

Cinta and Śōka: These are some of the psychogenic causes of backache. Somatic pain syndrome is a condition in which the anxiety is diverted towards different painful symptoms and backache is one of the presentations.

Āmam: Whenever we ingest food, it gets exposed to various digestive juices and enzymes in the digestive tract. If these juices and enzymes are available up to the mark in terms of quality and quantity, the food ingested is completely digested and yields full nutritive value. In case these digestive juices do not work well because of some reason or other, the food remains half cooked or indigested. This half cooked food when absorbed in the blood is called āmarasa in ayurveda. This āmarasa plays antigenic role and is the main reason for autoimmune disorders of the joints like Rheumatoid Arthritis, Systemic Lupus Erythematosus, etc. Here the involvement of spine is very common.

Abhōjanam: This condition occurs in starvation and anorexia nervosa. Due to negligible intake of diet, body becomes deficient of many nutrients that play key role in maintaining the integrity of the joints.

Laṅghana, rūkṣa and alpa: All these factors reflect the qualitative and quantitative aspect of diet. Such a diet may not be wholesome for articular system of the body resulting in low threshold level for pain and inflammatory changes in the joints of the body.

Śīta: The cold food is unable to induce the secretion of digestive juices in sufficient

quantity. The food ingested may be absorbed as an intermediate product of digestion. Such food in place of giving nutrition acts as an antigen thereby making a base for autoimmune joint disorder.

From the above, it can be seen that the ayurvedic concepts of etiological factors of vātavyādhi are consistent with that of modern medical sciences.

#### **Pathogenesis**

Vāta gets aggravated due to the above etiological factors and when it finds its seat in the joints of the body, destroys the joints and produces pain and swelling. In ayurvedic terminology this condition is called sandhigata vāta. In other words, vāta plays a major role in the pathogenesis of ligament damage, muscular weakening, cartilage degeneration, intervertebral disc prolapse, protrusion or extrusion; because vāta is dry in quality; the aggravated vāta tries to dry up the joints by inhibiting the synovial membrane to secrete adequate synovial fluid. Reduction in the amount of adequate synovial fluid allows the force of friction to increase between the joints thereby causing easy wear and tear of the protective cartilaginous cushion. Consequently, formation of osteophytes takes place and pain becomes a regular feature.

#### **Management**

Suśrutasaṁhita says 'Saṅkṣēptē kriyāyōgō nidāna parivarjanam' which means the right treatment is to avoid the causative factor. This signifies the importance of measures to be taken against etiological factors. Keeping this principle in mind if the above mentioned causative factors of rheumatic diseases are some how avoided, half part of the management is

already done. Rest of the management aims at arresting the pathological process going on in the joints by bringing the vitiated dōṣa in a state of harmony by:-

1. Diet and modification in the life style: The factors involved here are same as mentioned in causative factors, hence rectifying and avoiding the etiological factors automatically bring about the positive changes in diet and life style beneficial for the treatment of diseases of the joints.

2. Therapeutic procedures: In ayurveda, snēhana and svēdana are two procedures that have been proved very beneficial in the prevention and management of disorders of joints including upper and lower spine. Carakasāṁhita (Su. 22/21) describes the basic action of snēhana as: 1) viṣyandaṁ - that causes the act of dissolution to take place, 2) mārḍavaṁ - that induces flexibility and 3) kḷēdanaṁ - that makes the materials of the body in a semi solid state.

However, the above are the prerequisites for svēdana and other procedures of pañcakarma, they have independent role to play for the management of osteo-arthritis of upper and lower spine. In osteo-arthritis there is usually the degeneration of cartilage and the bone of the joint is exposed thereby inducing irregular growth of bone in the form of osteophytes. At this situation there is lack of synovial fluid in the joint and the joint capsule along with supporting structures loses flexibility to become stiff and painful. The procedure of snēhana makes the joint flexible and provides nutrition to cells of the synovial membrane so that they can secrete adequate amount of synovial fluid and decrease the pain threshold level.



### **Snēhanadravyās**

Ayurveda divides all the materials for doing snēhana into two broad categories: 1. Sthāvarasnēha (snēha of plant origin) which includes oils, both essential and non essential from different medicinal plants and 2. Jaṅgamasnēha (snēha of animal origin) which includes ghṛta (clarified butter), vaśā (subcutaneous fat, fat of the omentum, etc.) and majjā (fatty part of the bone marrow).

Here we will be more concerned about abhyaṅga as the procedure and oil as the material for snēhana and its role in the management of the painful condition of the upper and lower spine.

### **Abhyaṅga**

The literary meaning of abhyaṅga is application of oil on the body. In this procedure, some oil is selected according to the disease and body is massaged in specific manner for a specified period of time. Aṣṭāṅgahṛdaya attributes the effectiveness of this procedure as follows:

Jarāhara:- It arrests the premature aging process. Generally, most of the spinal problems occur in or after the middle age. If regular massage is taken, the degenerative changes can be slowed down and thereby prevent osteo-arthritis of the spine and other joints.

Śramahara:- It works as anti fatigue. One does not get fatigued irrespective of the work he takes if regular massage is taken.

Vātahara:- It is the best anti vāta procedure. Vāta is the main dōṣa implicated in the pathology of osteo-arthritis of the spine and hence regular massage helps in preventing the cartilage to degenerate; and the regeneration of the cartilage may also take place.

Dr̥ṣṭipāsādakara:- Apart from the problem of joints, it improves the eyesight.

Puṣṭikara:- It provides nutrition to all the cells of the body including that of joints thus making them more stronger.

Āyus̥kara:- This procedure increases the life span of individual cells of the body. Early wear and tear phenomenon of the joints occurs because of the reduced life span of the individual cells.

Svapnakara:- It ensures good sleep. Sound sleep is one of the major factors behind the overall good health. It relaxes the muscles and mind. Proper relaxation of neuro-musculoskeletal system is must for the proper functioning of the joints of the body.

Kl̥ēśasahatva:- This increases stamina to bear physical stress and exercise tolerance. If the joints can tolerate good amount of exercise they become strong enough to work for longer time without any disease.

The above are the attributes of abhyaṅga in general and oils in particular. Abhyaṅga with oils prepared in the decoction of some herbs specific for vāta dōṣa, is very beneficial for prevention and treatment of painful condition of spine (Table 1)

### **Sv̥dana**

This is a procedure intended to sweat the body by application of external heat either wet or dry by different methods. Caraka defines sv̥dana thus: “stāmbhagauravaṃ śītaghnaṃ sv̥danaṃ sv̥dakaraṃ”, which means the procedure that relieves the body from stāmbha (stiffness), gaurava (heaviness), śīta (coldness) and it is sv̥dakara (cause perspiration).



TABLE 1

Sanskrit name	Scientific name
Rāsnā	<i>Pluchea lanceolata</i>
Kadaṃbā	<i>Anthocephalus indicus</i>
Padmakā	<i>Prunus cerasoides</i>
Vētaśa	<i>Salix tetrasperma</i>
Sūci	<i>Atropa belladonna</i>
Yavāni	<i>Hyocianus niger</i>
Guggulu	<i>Commiphora mukul</i>
Ēraṇḍa	<i>Ricinus communis</i>
Gandhaprasāraṇi	<i>Paederia foetida</i>
Tagara	<i>Valeriana wallichii</i>
Nirguṇḍī	<i>Vitex negundo</i>
Palāṇḍu	<i>Allium cepa</i>
Rasōna	<i>Allium sativum</i>
Dēvadāru	<i>Cedrus deodara</i>
Mēdaśāka	<i>Litsea glutinosa</i>
Mucukunda	<i>Pterospermum acerifolium</i>
Gōrakṣa	<i>Dalbergia lanceolata</i>

### Therapeutic action of svēdana

By the procedure of svēdana, dōśas or toxins that have already been made loose by snēhana, get momentum and are either expelled through skin or diverted to their respective locations from where they need to be expelled from the body by vamaṇa (therapeutic emesis) or virēcana (therapeutic purgation). When the body is free from toxins, all the organs and

joints work well and reversible pathological changes do not pass into irreversible state. Heat during the procedure of svēdana causes vasodilatation thereby increasing the blood flow to the joints. In this way individual cells of the joint capsule get sufficient amount of oxygen resulting increased life span. Heat also causes relaxation of muscles and ligament so that the joints become more flexible and mobile.

Svēdana can be done with steam of decoction of the herbs mentioned for abhyaṅga. Tub bath or steam bath with lukewarm decoction of the herbs is advised for the problem of spine. Thus snēhana in the form of abhyaṅga and svēdana play major role in the management of the painful condition of the upper and lower spine.

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## KṢĀRASŪTRA THERAPY IN THE MANAGEMENT OF HAEMORRHOIDAL DISEASE

N.H. Kulkarni\*

**Abstract:** Piles, one of the commonest ailments, is defined as the varicose condition of the internal haemorrhoidal plexus above pectinate line. Ayurveda considers arśas as one of the mahāvvyādhis. This paper discusses the etiological factors and complications of piles and their management with special reference to kṣārasūtra therapy in ayurveda. The sign and symptoms, classification, etc. are also dealt with.

### Introduction

Piles are defined as the varicose condition of the internal haemorrhoidal plexus, which is above the pectinate line. It is one of the commonest ailments that afflict the mankind without regarding the race or sex. Many persons may have piles without manifesting any symptoms and are diagnosed as perchance on routine rectal examination. There is another observation that 40% of the cases of piles is detected over the age of 50 years.

### Etiology

According to Suśruta, intake of contradictory food, taking meal before the complete digestion of previous one, indulge in excessive sexual intercourse, squatting for long period, riding for long duration and suppressing of the natural urges are some causes of this ailment<sup>1</sup>. The causative factors in relation to piles can mainly be divided into two categories viz. 1. idiopathic causes and 2. secondary causes.

### Idiopathic causes

It is very difficult to pinpoint the evident causes that result into venous obstruction (varicosity) for the cause of piles. However, a good number of factors can be considered/ enumerated, which are of importance as contributing factors in the causation of hemorrhoids:

- Hereditary:- This includes congenital weakness in the walls of vein, abnormal large arterial supply to rectal plexus, etc.
- Constipation:- Straining in constipated persons leads to engorgement of internal haemorrhoidal plexus, giving rise to piles.
- Diarrhoea and dysentery:- When associated with much tenesmus, may have similar effects.
- Faulty habits of defaecation
- Dietary habits
- Anatomical factors

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### Secondary causes

- Portal obstruction
- Pregnancy and abdominal tumors

### Varieties

Suśruta states that there are six types of arśas (piles)<sup>2</sup>. They are vātaja, pittaja, kaphaja, raktaja, sannipātaja and sahaja. Another classification of hemorrhoids under different headings is as under:

- a. In relation to site of origin, hemorrhoids can be divided into three i.e. 1. internal (proximal to dentate line), 2. external (varicosity of external haemorrhoidal plexus) and 3. interno external (external and internal haemorrhoidal segment of corresponding plexus participate).
- b. By pathological anatomy wise it can be classified as 1. primary hemorrhoids (3,7&11 O'clock position) and 2. secondary hemorrhoids (presence of additional hemorrhoids in between primary piles).
- c. In degree wise, it is classified as: 1. First-degree, where it cannot clearly visualise but veins becomes congested during defecation, 2. second-degree, where mass protrudes during defecation and disappears spontaneously, 3. third degree: here, mass protrudes and needs digital insertion back into the anal canal and 4. fourth degree, where the pile mass, if prolapsed, always digital insertion is not possible due the involvement of skin component.

### Sign and symptoms

Bleeding P/R:- Bleeding is the first and earlier symptom and may be noticed in the shape of blood spot on the motion always in patients of

constipation. In later stages, the bleeding may be complained without defecation.

Prolapse:- Protrusion of mass may be complained on straining during defecation. The degree of prolapse depends upon the chronicity of mass.

Discharge: - In 4th degree pile mass, there will be complete prolapse as a result of which the complaint of mucoid discharge will be common.

Anal irritation:- Mucoid discharge in 4th degree hemorrhoids irritates peri-anal skin.

Anaemia:- It is always secondary to bleeding from internal hemorrhoids, which ultimately gives rise to dyspnoea on exertion, dizziness, lethargy, pallor, etc.

### Complications:

Bleeding:- It usually occurs in early stages of second-degree piles which is observed during defecation. Bleeding ultimately leads to anaemia.

Strangulation:- Prolapsed second-degree internal hemorrhoids become strangulated, followed by congestion due to impeded venous return giving rise to pain.

Thrombosis:- If the thrombosed pile is not reduced within an hour or two, then there occurs thrombosis. The thrombosed pile mass has got the dark purple or black colour, solid touch and shall be with oedema of anal margins. Pain may be relieved but tenderness will remain.

Ulceration:- Exposed mucous membrane of the thrombosed pile mass often accompanies superficial ulceration.

Gangrene:- In cases where the strangulation is sufficiently tight, it may lead to gangrene formation.

**Fibrosis:-** Many a times thrombosed pile mass becomes fibrosed, which will be sessile initially, but become pedunculated in long standing cases.

**Suppuration:-** When thrombosed pile mass becomes infected, it leads to suppuration.

**Pylephlebitis:-** Due to anatomical communication between systemic and portal circulation leads to portal pyaemia.

### **Treatment**

#### **General**

Treat the patient for anaemia by haematinics. Blood transfusion may be necessary in severe cases. Constipation should be treated by laxatives and suitable diet.

#### **Local**

There are two varieties of local treatment viz. palliative treatment and operative treatment.

Palliative treatment includes a) Injection therapy, b) Baron's band application, c) Cryosurgery and c) manual dilatation, etc.

**Operative treatment:-** Modern surgeons are carrying out Haemorrhoidectomy where the indications are - (1) Third degree hemorrhoid (2) Fibrosed hemorrhoid (3) Failure of conservative treatment in second-degree piles. (4) When external hemorrhoid is well defined.

#### **Complications of operative treatment**

- Retention of urine
- Reactionary and secondary hemorrhage
- Portal pyemia

#### **Ayurvedic management**

**Principles:-** i. Lañghana, ii. dīpana, iii. pācana, iv. vātānulōmana and v. para surgical measures.

#### **Kṣārasūtra therapy**

The equipments and other requirements for this

procedure are: proctoscopes, piles holding forceps, artery forceps (both straight and curved), sponge holding forceps, surgical gloves, scissors, needle holder, round body curved needles, towel clips, syringes, swabs, linen's, kṣārasūtra, plain surgical threads, etc.

#### **Pre-procedure management**

The patient is advised to take light diet on the previous day of kṣārasūtra therapy and nil by mouth for 6 hours. The hairs from umbilical area to knee joint are to be cleansed 24 hours before the therapy. Soap water enema is to be given 4 to 6 hours before. TT injection half cc I.M. is to be done.

#### **Ligation procedure**

The patient is fixed in lithotomy position. The peri-anal area is to be cleaned with savlon and spirit and the outer area to be covered with sterile towels, leaving the anal area open. Thereafter, proctoscopy is done and position of the various pile masses is assessed. The pile mass is delivered outside by asking the patient to strain out and immediately the mass is held with the pile-holding forceps; and 0.5% Xylocaine is infiltrated around the root of the pile mass.

Slight pull is to be exerted over the pile mass so that its base is clearly demarcated along with blood vessel. Afterwards, the pile mass is transfixated by passing the curved round body needle with kṣārasūtra at the base. Thereafter, ligated pile mass is replaced inside the rectum and the thread is allowed to suspend out. Then, 10 ml of Jātyāditailam is to be injected into the rectum and sterile gauge piece dipped in oil is to be applied on the anus. A T-bandage is tied to keep the dressing in proper position. Then the patient is shifted to the ward.

### Post ligation treatment

In case, patient feels inconvenience due to pain 1M injection of any analgesic may be given. Sips of fluids are allowed afterwards followed by a cup of tea after 3 hours. In the evening, liquid diet is advised; from next day semi solid diet is given.

Patients are advised for Pañcavalkala kvātha sitz bath 4 to 6 hourly after the ligation followed by 6 to 8 hourly. Anti-inflammatory drugs like Śigru guggulu ½ to 2 g per day for 10 days or Triphala guggulu 2 tabs TDS for 10 days are advised. Abhayāriṣṭam 20 ml BD with equal water after meals and rasāyana drugs like Cyavanaprāśa avalēha 10 g OD is preferred.

### Conclusion

Kṣārasūtra by its action (chemical cauterization and mechanical strangulation of the blood

vessel) causes local gangrene of the pile mass tissue and ultimately resulting in falling out of the mass within 5 to 7 days. No effort should be made to pullout kṣārasūtra or pile mass, as it may cause bleeding and pain, which is not desirable. Healing of the resulting wound takes a week time. Sitz bath with Pañcavalkala kvātha luke warmly and instillation of Jātyāditaillam makes the patient fit within 10 days.

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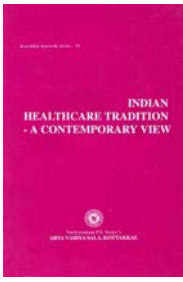
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## PHARMACOLOGY OF MĀKṢIKA WITH SPECIAL REFERENCE TO ITS ACTION ON ŚVITRA

P.H.C. Murthy\*

**Abstract:** Mākṣika, apart from its alterative and aphrodisiac properties, is very efficacious remedy for many diseases. Here is a pharmacological study of mākṣika based on the chemical analysis carried out on the raw, purified and incinerated samples with a special reference to its action on śvitra.

### Introduction

Mākṣika, aptly named as tāmragandhāyasa by Sri Vaman Ganesh Desai, is a typical chemical composition of copper, sulphur and iron (Cu<sub>5</sub> Fe SO<sub>4</sub>). The processing of this natural compound for therapeutic use i.e. both śōdhana (purification) and mārāṇa (incineration) is considered to be effecting this composition in order to make it easily absorbable in the body and also to alleviate all the overages or impurities, physical or chemical, for facilitating effective internal usage. The peculiarity of the chemical composition of the raw drug gives a different line of thinking regarding the pharmacology of this drug.

### Materials and methods

Mākṣika, obtained from the market, was subjected to śōdhana process according to the references made to in Rasajalanidhi. After completion of the process, the sample sent for chemical analysis. The śōdhita mākṣika was then subjected to mārāṇa for 10 times as referred to in Rasatarāṅgiṇi. At the end of tenth

puṭa, the sample was again sent for chemical analysis.

### Observation and discussion

The stage-wise changes observed in the chemical analysis of mākṣika were quite interesting. After śōdhana, the amount of sulphur found considerably reduced. The quantity of copper was also slightly reduced. The process of mārāṇa found to be affected this composition totally. It more or less appears that one gets lōhabhasma when mākṣika is subjected to puṭa. A careful study of the therapeutic uses of svarṇamākṣika makes one feel that mākṣikabhasma and lōhabhasma are having different therapeutic applications and that they cannot be substituted to each other.

Coming to the topic of pharmacology of mākṣikabhasma, it gives a totally different dimension of its clinical application. According to Suśrutasaṁhita, the anatomical structure of the body contains seven layers i.e. avabhāsinī, svētā, lōhitā, tāmṛā, vēdhinī, rōhiṇī and

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TABLE 1  
Chemical composition of raw drug (% W/W)

Free sulphur	6.36
Sulphur	3.33
Calcium (as Ca)	1.625
Sodium (as Na)	0.922
Potassium (as K)	0.370
Sulphate	3.0
Copper	17.2
Feric Oxide	25.0
Ferous oxide	5.7
Iron	36.0
Phosphate (as PO <sub>4</sub> )	1.101
Silica	3.8
Acid insoluble	11.93

TABLE 2  
Chemical composition of *sodhita makshika*  
(% W/W)

Iron (as Fe <sub>2</sub> O <sub>3</sub> )	48.15
Copper (as CuO)	20.52
Potassium (K)	5.37
Sodium (Na)	5.23
Sulphate	8.21
Ash value	88.32
Acid insolubility	19.42

TABLE 3  
Chemical composition of *marita makshika*  
(% W/W)

Iron (as Fe <sub>2</sub> O <sub>3</sub> )	69.28
Copper (as CuO)	6.45
Potassium (K)	Nil
Sodium (Na)	2.82
Sulphate	8.72
Ash value	91.45
Acid insolubility	20.34

māmsadharā. Of these, the fourth layer tāmra is said to be the originating place of kilāsa the white patches disease. One may wonder why Suśruta named this layer as tāmra! The modern science believes human skin produces enzymes and metabolites viz. tyrosinane, arginase, histaminase, catalase and esterase, etc. Of these, tyrosinase, a copper-protein complex, catalyses the oxidation of tyrosine to dopa and oxidations of dopa to melanin; it is an established fact that deficiency of melanin causes leucoderma. On bringing together the modern concept and Suśruta's derivation, one may wonder that how far-sighted Suśruta was. This helps one to conclude that why māḁḁika is not recommended in kilāsa or śvitra. However, the use of tāmra in śvitra, though not significantly, has been in vogue since time immemorial. So, this setback may be due to improper incineration of tāmra or any other inexplicable reason. Tāmragandhāyasa, being the chemical name of māḁḁika, the presence of three components i.e. tāmra, gandhka and ayas make the formulation efficacious in śvitra. The impurities of tāmra are invalidated due to the presence of gandhka, though it is considerably reduced, in the bhasma of māḁḁika. Even if one gets more amount of lōha in chemical analysis of māḁḁikabhasma, this quality is seldom found in the direct use of lōhabhasma. Hence it can be concluded that māḁḁikabhasma is more useful in śvitra.

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## EXCERPTS FROM CIKITSĀMAÑJARI – XLIX

P. Unnikrishnan\*

**Abstract:** Vātavādhicikitsa continues. In this issue, the sign and symptoms of ardira, pakṣāghāta and apabāhuka with their treatments are elaborately explained.

**Daṇḍāpatānakam:-** This is a condition where the body becomes rigid and stiff like a stick. It has to be treated with the same lines as that of ākṣēpakam.

**Jihvastāmbham:** - This is a case where the tongue becomes stiff and the power of speech is lost either partially or fully. Here the general treatments prescribed for vāta is to be done.

**Arditam:-** This is termed facial palsy or Bell's palsy, where one side of the face is drooped towards the other side due to the loss of voluntary movement of the muscles of one side of the face. In this case, administration of medicated nasal drops (nasya), application of medicated oil on the head (mūrdhatailam), filling of oil in the external auditory canal (śrōtratarpaṇam), filling of eye with medicated ghee or oil, etc. are recommended. The procedure termed akṣitarpaṇam, explained below, is to be done for the relief from major eye disorders.

Prepare a hedge with black gram paste above the orbit of the eye and fill the medicated ghee in such a way that the eyelashes are immersed

in it. When the ghee gets cold, take it out by using a piece of cloth; warm and re-instill. This procedure is to be done for one hour per day, for a consecutive period of seven days.

In the presence of oedema, emesis is to be induced by giving emetics. If burning and redness are present, bloodletting is to be done.

**Pakṣāghātam (hemiplegia):-** For this, unction and sudation in a combined form followed by purgation is prescribed. Sudation, immersion bath and vasti are to be done with Balātailam (cross ref. Aṣṭāṅgahṛdayam). Later, depending upon the condition of the patient, doing nutritive therapy is effective. When the patient is unable to speak due to vitiated vāta, he has to be subjected to sudation all over the body, and after placing some weight on his head, rotate him on a seat, like a pivot of a rotating wheel.

**Apabāhukam (brachial palsy):-** Nasya, followed by intake of medicated ghee after food, is to be done for the relief of apabāhuka.

**Ūrustāmbham (stiffness of thighs):** - This

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disease is characterized by the stiffness of thighs and, at times, total leg with inability to bend the knee. Here, the basic pathology is the vitiation of vāta by the blockage caused by kapha. In this case, unction and purifying therapy are contraindicated. The potent factors are kapha and āma (toxins), so, the treatment should be aimed to reduce the blockage of kapha and elimination of toxins by measures indicated for the reduction of kapha such as fasting, etc.

Prepare a paste with the following drugs in buttermilk and roll to a bolus; cover it with mud-paste and cook in glowing coal; then, mix the content with expressed juice of kaḷḷiyila (leaves of *Euphorbia ligularia*), ground again, and apply over the edema.

Kaṭuku	<i>Brassica juncea</i>
Tūmañjal	<i>Curcuma longa</i> (fresh)
Kaḷḷikkazhuttu	<i>Euphorbia ligularia</i>

Mix fine powders of the following with kañjikam (sour gruel) and apply the paste for the relief of rheumatic edema.

Cerukaṭuku	<i>Brassica juncea</i>
Cukku	<i>Zingiber officinale</i>
Tēvatāram	<i>Cedrus deodara</i>
Vilvam	<i>Aegle marmelos</i>
Nirmātaḷam	<i>Cretaeva nurvala</i>

Prepare a paste of the following in kañjikam, add to cows urine, boil and apply lukewarmly over the thighs for the relief of severe edema, tremor and stiffness.

Puññintōl	<i>Pongamia pinnata</i>
Katirōn	<i>Calotropis gigantea</i>
Amukkuram	<i>Withania somnifera</i>
Kārttoṭṭi	<i>Hugomia mystax</i>
Siddhārtham	<i>Brassica juncea</i>
Cukku	<i>Zingiber officinale</i>

Murīṇṇa	<i>Moringa oleifera</i>
Daivatamaram	<i>Cedrus deodara</i>

Medicated oil prepared from the following on external application relieves pain of the calves, back, sacral region and sides of chest.

Kūmuḷḷu	?
Pārvallī	<i>Ichnocarpus frutescens</i>
Bala	<i>Sida rhombifolia</i> ssp. <i>retusa</i>
Parutti	<i>Gossypium herbaceum</i>
Karkandhu	<i>Ziziphus oenoplea</i>
Citra	<i>Ricinus communis</i>
Paṭu	Rock salt

Koṭṭamcukkādi tailam:

Medicate sesame oil with fine paste of the following as solid component and expressed juice from the leaves of ciñcā (*Tamarindus indica*) and curd as liquid components. This preparation, on external application, relieves muscular pains, rheumatism. It is as potent as hymn.

Koṭṭam	<i>Saussurea lappa</i>
Cukku	<i>Zingiber officinale</i>
Vayāmpu	<i>Acorus calamus</i>
Śigru	<i>Moringa oleifera</i>
Laśuna	<i>Allium sativum</i>
Kārttoṭṭi	<i>Hugomia mystax</i>
Dēvadrumam	<i>Cedrus deodara</i>
Siddhārtha	<i>Brassica juncea</i>
Suvāha	<i>Alpinia galanga</i>

Treatment shall be done considering the site and magnitude of the vitiated dōṣas. The conditions such as śōṣa, ākṣēpaṇa, saṅkōca, stambha, svapna, kaṃpana, hanuśramśa, ardita, khanja, paṅgu, khuḍavāta, sandhicyuti, pakṣavāta, mēdōgata vāta, majjagata vāta and asthigata vāta can be treated and cured with effort, provided they are of recent origin and there are no complications.

Emesis is to be done in the case of vitiated prāṇa, vasti in apāna, purgation in vyāna and udāna, and consumption of drugs that are stāmbhana in samāna.

Finely chopped leaves of āvaṇakku (*Ricinus communis*) and coconut scrapings should be fried and tied into two or three cloth bundles of suitable size, dipped in a warm combination of two fats (yamaka), and applied over the entire body for the relief from hemiparesis or hemiplegia. Sudation in a similar manner with the leaves of ciñcā (*Tamarindus indica*) can also be done.

Apply a paste of finely powdered ṇāvāra rice cooked in water on the body. Drugs that relieve vāta can also be used likewise. A combination of moderately warmed ghee and sesame oil is good for irrigation. Consume castor oil for purgation. Fumes arising from kāṭi (āranāḷa) are to be used for sudation. Intake of milk medicated with ūram (*Abutilon indicum*) and kuṇṭōṭṭi (*Sida rhombifolia* ssp. *retusa*) added to porridge is very effective. Consumption of Mahākaṣāya is advised. Intake of Sahacarādi kaṣāya, mixed with milk is very effective. A kaṣāya prepared with kuṇṭōṭṭi or with Vidāryādigaṇa is also good. Any of the medicated oils such as Dhānvantaram, Kṣīrabala, Śuddhabala, Ciñcādi or Prabhañjanavimardanam may be applied on the body.

Prabhañjanavimardanam tailam:

Prepare a medicated oil from the kaṣāya of the following and ghee, Nimbataila (neem oil) and Sarṣapataila (mustard oil) as medium, curd (dadhi), kāṭi (āranāḷa) and milk as liquid components.

Bala *Sida rhombifolia* ssp. *retusa*  
Śātāvarī *Asparagus racemosus*

Śigru *Moringa oleifera*  
Varaṇa *Crataeva magna*  
Arka *Calotropis gigantia*  
Karañjakau *Holoptelea integrifolia*  
*Pongamia pinnata*  
Ēraṇḍa *Ricinus communis*  
Kōraṇḍa *Nilgiranthus ciliatus*  
Vājigandha *Withania somnifera*  
Prasāriṇī *Merremia tridentata*  
ssp. *tridentata*  
Vilva *Aegle marmelos*  
Kāśmarya *Gmelina arborea*  
Takkārī *Premna corymbosa*  
Pāṭala *Stereospermum colais*  
Duṇḍuka *Oroxylum indicum*

The solid components are given below:

Tagara *Valeriana jatamansi*  
Amarakāṣṭha *Cedrus deodara*  
Ēlā *Elettaria cardamomum*  
Śundhī *Zingiber officinale*  
Sarṣapa *Brassica juncea*  
Cōraka *Kaempferia galanga*  
Śātāhvā *Anethum graveolens*  
Kuṣṭha *Saussurea lappa*  
Sindhūtha *Rock salt*  
Rāsnā *Alpinia galanga*  
Kālānusārika *Trigonella foenum-graecum*  
Vacā *Acorus calamus*  
Citrakā *Plumbago indica*  
Māmsī *Nardostachys grandiflora*  
Saraḷa *Pinus roxburghii*  
Kaṭurōhiṇī *Picrorhiza scrophulariiflora*

Take Dhānvantaram or Balātailam medicated oil orally and for vasti. Consumption of Sahacarādi taila or Prabhañjanavimardanam and Indukāntam medicated ghee is effectual. Immersion bath in moderately warmed kāṭi, and doing vasti with medicated oils are also effective. Prabhañjanavimardanam, (three

times medicated) on application below neck or using the same for irrigation depending upon the condition of the disease and patient is effectual.

Consumption of Saptasāram kaṣāyam added with castor oil relieves sprain of the hip and spine.

Saptasāram kaṣāyam:

Consume a kaṣāya prepared from the following added with jaggery, powdered kaṇa (*Piper longum*), saindhava (rock salt), hiṅgu (*Ferula asafoetida*) and ghee in small quantities.

Varṣābhū	<i>Boerhaavia verticillata</i>
Vilvā	<i>Aegle marmelos</i>
Khalvā	<i>Macrotyloma uniflorum</i>
Ūrubhū	<i>Ricinus communis</i>
Sahacara	<i>Nilgiranthus ciliatus</i>
Śunthī	<i>Zingiber officinale</i>
Agnimandha	<i>Premna corymbosa</i>

Low backache and pain on the hip are relieved by the consumption of equal quantities of castor oil and expressed juice of nirguṇḍī (*Vitex negundo*). Sudation with a cloth bundle that contains fried coconut pulp and chopped leaves of āvaṇakku (*Ricinus communis*) relieves sprain of the spine and hip joint. The patient should lie in a cot with holes in the plank and sudation shall be done with fumes arising from boiling kāṭi. Fumes arising from the kaṣāya of aiṃpuḷi (*Tamarindus indica*, *Solena amplexicaulis*, *Spondias pinnata*, *Hibiscus furcatus* and *Garcinia gummi-gutta*) also have similar properties.

Local application of the medicated oil with the kaṣāya of the following as liquid component and fine paste of bala as solid component relieves rheumatism affecting the hip and dorsal region of the body.

Bala	<i>Sida rhombifolia</i> ssp. <i>retusa</i>
Parutti	<i>Gossypium herbaceum</i>
Kūmuḷḷu	
Pārvallī	<i>Ichnocarpus frutescens</i>
Tuṭarī	<i>Ziziphus oenoplea</i>

A variation of the above oil added with the water extract of aiṃpuḷi and kāṭi is also effective.

Another medicated oil, added with the water extract of aiṃpuḷi and curd as liquid components, and the solid components of Piṇḍatailam, is also effective to relieve the pain. If the patient smells blood, Prabhañjana-vimardanam oil can be applied on the body. Applying cooked nāvāra rice in the form of paste on the body is effectual. Intake of Sahacarādi kaṣāyam in the cases of khañja and paṅgu (lameness) is very effective.

A kaṣāya prepared from the following when consumed with the addition of a small quantity of oil relieves rheumatic diseases and enables the patient to walk according to his desire. This preparation is very effective in diseases affecting the lower limbs.

Sahacaram	<i>Nilgiranthus ciliatus</i>
Suradāru	<i>Cedrus deodara</i>
Nāgaram	<i>Zingiber officinale</i>

Intake of a kaṣāya prepared from the roots of karimkuṛiñṇi (*Nilgiranthus ciliatus*) alone is very effective. Consumption of another kaṣāya prepared from the roots of bala mixed with milk is suggested. Medicated oils such as Kṣīrabala, Śuddhabala or Dhānvantaram may be applied on the body or consumed.

Treatment of facial palsy (ardita)

Application of butter mixed with castor oil on the head is recommended. Sudation of the

patient with solid materials (piṇḍasvēda) after applying oil is good. Application of fine paste prepared from the roots of bala mixed with butter is effective; even the application of plain butter on the head relieves pain and other discomforts caused by facial palsy.

A paste prepared with cennināyakam (Elio) and castor oil for application on the head is prescribed.

Medicated oil prepared with the kaṣāya of kuṟuntōṭṭivēr and milk as liquid component, and fine paste of kuṟuntōṭṭi or other suitable medicines capable of relieving rheumatism may be applied on the head. Irrigation with the same oil is very effective; even plain sesame oil may be used for irrigation of the head.

Medicated oil prepared with the expressed juice of cittamṛtu (*Tinospora cordifolia*), kaṟuka (*Cynodon dactylon*), ponnaṅgāṇi (*Alternanthera sessilis*) and uzhiñña (*Cardiospermum halicacabum*) as liquid component and fine paste of iratṭimadhuram (*Glycyrrhiza glabra*), candanam (*Santalum album*) and kadaḷippazham (*Musa paradisiaca*) as solid component may be applied on the head.

A combination of ghee and sesame oil medicated with drugs of āṟukālādi [except kaññuṇṇi (*Eclipta prostrata*)], āññil (*Artocarpus hirsutus*), tender leaves of kāññiram (*Strychnos nux-vomica*) and taṇḍulōdakam (first washing of rice) as liquid component, and the fine paste of puñṇinvēr (*Pongamia pinnata*), kuṣṭha (*Saussurea lappa*), yaṣṭi (*Glycyrrhiza glabra*), taru (*Cedrus deodara*) misi (*Anethum graveolens*) and bala as solid components is good for application on the body and irrigation.

Nasal purgation (nasya) may be done with

Kṣīrabala. Consume Śuddhabala medicated with ghee. Inhalation of fumes arising from medicated milk with the roots of bala is good. Application of butter on the head is prescribed.

Intake of the kaṣāya prepared from the following drugs relieves ardita.

Abhīru	<i>Asparagus racemosus</i>
Vīrā	<i>Coccinia grandis</i>
Jīvantī	<i>Holostemma ada-koedien</i>
Jīvaka	<i>Malaxis acuminata</i>
Rṣabhaka	<i>Malaxis muscifera</i>
Bala	<i>Sida rhombifolia ssp. retusa</i>

Ghee medicated with the drugs of Vidāryādigaṇa, on consumption, relieves ardita. Head bath, excessive laughter, etc. are contraindicated.

Nasal purgation is effectual. Ghee may be used for akṣitarpaṇa. Ghee medicated with a kaṣāya prepared from kuṟuntōṭṭi added with milk, as liquid component; and iratṭimadhuram and sugar, as solid component, on nasal application relieves ardita. Remove oil on the head by application of coconut husk powder. Water boiled with bala and haṭhā (*Phyllanthus emblica*) on irrigation removes oils. Consumption of Vidāryādi kaṣāya after food at night is prescribed. Vidāryādi ghr̥ta also may be taken. Irrigation of the body with the mixture of ghee and oil is also good.

Bloodletting, application of medicinal poultices, gargling, sudation, application of oil on the head, nasal purgation with medicated oils, etc. alleviates facial palsy.

Application of medicated oils on the head shall be done considering the stage of the disease and patient. Difficulty in speech, slurring, stammering or in coherent speech is cured by the administration of nasya with Kṣīrabala.

Kṣīrabala can be used for external application and for irrigation. Retention of medicated oil on the head in the form of śīrōvasti with the same oil is also effective. All treatments indicated for rheumatism are also effective.

Treatment of apabāhu (brachial palsy):

Apabāhu or apabāhuka is a condition where the patient is unable to raise the affected arm above the shoulder level. In mild cases, it may be possible to raise the arm, but with severe pain and stiffness of the shoulder joint and scapular region.

Prepare Kṣīrabala added with one-third ghee and use for nasya. Bloodletting with leeches is preferred if oedema is present. A kaṣāya prepared with daśamūla on consumption relieves apabāhu. A kaṣāya prepared with eight kazhañju\* of kuṇṭōṭṭi and four kazhañju of cittamṛtu (*Tinospora cordifolia*), added with milk on consumption relieves apabāhu. Intake of a kaṣāya prepared with kuṇṭōṭṭi added with milk, after supper is also effective.

Medicated oil prepared from the kaṣāya of cittamṛtu, kuṇṭōṭṭi and milk as liquid component, and the fine paste of koṭṭam, candanam, iratṭimadhuram and māñci (*Nardostachys grandiflora*) as solid component, on application relieves apabāhu. Another medicated oil prepared from the kaṣāya of cittamṛtu, kuṇṭōṭṭi and milk as liquid component, and the fine paste of the solid component of Triphalādi taila, on application on the head, relieves apabāhuka. Oil medicated with the juice of jāmbhīra (*Citrus lemon*) is recommended for local application. External application of the oil medicated with the dry coconut pulp juice and juice of jāmbhīra as liquid component, and fine paste of kṣaṇadā

\* 1 kazhañju = 4g

(*Curcuma longa*) and āsuradhūpa (*Shorea robusta*) as solid component, relieves apabāhuka.

Mix together the expressed juices of coconut pulp (six ripened coconuts), sixty jāmbhīra (both juices in equal quantity), fine powder of mañjaḷ (*Curcuma longa*) mūzhakku (144g) and a small quantity of sliced bee's wax; boil this mixture till there is no water content; add uri (96 ml) fine powder of ceñcalīya (*Shorea robusta*) and mix well. This preparation, with slight warm, on local application, relieves churning and throbbing pains. A cloth bundle, containing fried ripe coconut pulp shavings and finely chopped leaves of āvaṇakku, on rubbing on the body, relieves pain.

Prasāraṇyādi kaṣāya, shall be consumed for the relief of rheumatic pain and apabāhukam.

Prasāraṇyādi kaṣāya:

Prasāriṇī	<i>Merremia tridentata</i> ssp. <i>tridentata</i>
Māṣa	<i>Vigna mungo</i>
Bala	<i>Sida rhombifolia</i> ssp. <i>retusa</i>
Rasōna	<i>Allium sativum</i>
Rāsna	<i>Allium sativum</i>
Auṣadha	<i>Zingiber officinale</i>

Kārpāsāsthyādi tailam may be applied and can be taken internally also. Medicated oil with the kaṣāya of the following and coconut milk as liquid component, and the fine paste of paruttibījam, bala and ceñcalīyam, on external application, relieves apabāhukā.

Paruttibījam	<i>Gossypium herbaceum</i> (seed)
Bala	<i>Sida rhombifolia</i> ssp. <i>retusa</i>
Kōḷu	<i>Macrotyloma uniflorum</i>
Māṣam	<i>Vigna mungo</i>

Śuddhabala tailam prepared with one-third of ghee shall be consumed.

Kārpāsāsthyādi tailam:

Oil medicated with the kaṣāya of the following and goat's milk as liquid component, and fine paste the following as solid component, on consumption, application and using for nasal purgation relieves pakṣāghāta (partial paralysis), apabāhuka and arditā (facial palsy).

Kaṣāya:

Kārpāsāsthi	<i>Gossypium herbaceum</i> (seed)
Balā	<i>Sida rhombifolia</i> ssp. <i>retusa</i>
Māṣa	<i>Vigna mungo</i>
Kulastha	<i>Macrotyloma uniflorum</i>

Kalka:

Dēvadāru	<i>Cedrus deodara</i>
Balā	<i>Sida rhombifolia</i> ssp. <i>retusa</i>
Rāsnā	<i>Alpinia galanga</i>
Kuṣṭha	<i>Saussurea lappa</i>
Sarṣapa	<i>Brassica juncea</i>
Nāgarā	<i>Zingiber officinale</i>
Śatāhvā	<i>Anethum graveolens</i>
Pippalimūla	<i>Piper longum</i> (root)
Cavya	<i>Piper brachystachyum</i>
Śigru	<i>Moringa oleifera</i>
Punarnava	<i>Boerhaavia diffusa</i>

Prepare a mixture with the expressed juice of the leaves of ummattu (*Datura metal*) added with butter, rock salt and ceñciliyam, and heat to evaporate the water content. This paste, on application, relieves pain and stiffness.

A fine paste of the following prepared in coconut pulp juice and milk, on local application relieves the pain caused by apabāhuka.

Eḷḷu	<i>Sesamum indicum</i>
Uzhunnu	<i>Vigna mungo</i>
Śatakuppa	<i>Anethum graveolens</i>
Uluva	<i>Trigonella foenum-graecum</i>

A fine paste prepared from the following, mixed with dhānyāṃḷa, on application with moderate warm relieves pain in apabāhuka.

Kārpasabīja	<i>Gossypium herbaceum</i>
Akṣata	<i>Oryza sativa</i>
Māṣa	<i>Vigna mungo</i>
Sindhu	Rock salt
Kulastha	<i>Macrotyloma uniflorum</i>
Kulmāṣa	<i>Hordeum vulgare</i>
Niśā	<i>Curcuma longa</i>
Śatāhva	<i>Anethum graveolens</i>

Kṣīrabala added with one-third quantity of ghee on consumption after lunch is prescribed; the dose is to be adjusted according to the digestive capacity of the patient.

Intake a variation of Kṣīrabala prepared with two nāzhi\* of sesame oil and ghee twice daily after food in suitable doses; in the solid components of this preparation, dēvatāram, aratta and candanam are to be doubled in quantity; the preparation can be used for doing nasya in the evening. Application of Balāguḷūcyādi tailam on the head and jāmbīra tailam on the affected arm and surrounding regions is advised. During the course of intake of kṣīrabala, if the patient desires porridge (kañji), it is to be prepared in a kaṣāya medicated with the fine powders of the following; here, care should be taken to reduce the quantity of rice so as to avoid indigestion and other problems; if desired, a small quantity of the fine powder of jīrakam (*Cuminum cyminum*) can be added in the porridge.

\*1 nāzhi = 192 ml



Ōrila	<i>Desmodium gangeticum</i>
Mūvila	<i>Pseudarthria viscida</i>
Āvaṇakkinvēr	<i>Ricinus communis</i>
Kuṛuntōṭṭivēr	<i>Sida rhombifolia ssp. retusa</i>
Malar	No cake
Cukku	<i>Zingiber officinale</i>

Water for taking the bath should be warm. See that no additional ghee is consumed while taking Kṣīrabala. If the patient is very particular of taking ghee, he may use butter retained in salt water for the day. The daily routine of the patient has to be regulated during this course of treatment: He should - maintain celibacy, use only warm water for all activities including cleaning after toilet, sleep during the night; he should not - ignore/block the fourteen natural

urges\*, do excessive exercise, lose his temper, not be sad, expose to dew/sun/wind, walk long distance, speak for long, sit in difficult posture, use a very low or high pillow, sleep during the day and expose to dust/smoke.

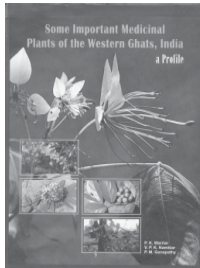
A kaṣāya prepared with kuṛuntōṭṭi (8 kazhañju), ciṭṭamṛtu (2 kazhañju) and dēvatāram (1 kazhañju) added with milk shall be consumed after supper. Intake of milk medicated with the following is effective.

Vilva	<i>Aegle marmelos</i>
Kāśmaryā	<i>Gmelina arborea</i>
Takkarī	<i>Premna corymbosa</i>
Pāṭalā	<i>Stereospermum colais</i>
Duṇḍuka	<i>Oroxylum indicum</i>
Bala	<i>Sida rhombifolia ssp. retusa</i>

\*fart, belching, stools, urine, sneezing, thirst, hunger, sleep, cough, panting, yawning, tears, vomiting and ejaculation.

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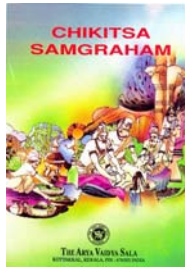


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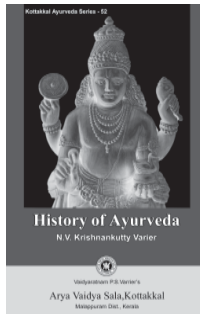
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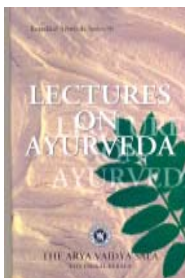
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