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लाभानां श्रेय आरोग्यम्

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



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FROM THE PAGES OF VĀGBHATA - LXXI

P. Madhavikutty*

Abstract: The calamities during pregnancy and at the time of delivery are explained in this chapter. The precautions and treatments (surgical and medical) are also explained here.

अथातो गर्भव्यापदं शारीरं व्याख्यास्यामः ।
इति ह स्माहुरात्रेयादयो महर्षयः ।

(Athāto garbhavyāpadam
śārīram vyākhyāsyāma: ।
iti ha smāhurātreyādayo maharṣaya: ।)

After explaining Garbhavakrānti śārīra, the first chapter of Śārīrasthāna, now we shall comment on the second chapter Garbhavyāpat śārīra (calamities during pregnancy period or at the delivery time); thus spoke the sage Ātreya and other ācāryas.

गर्भिण्याः परिहार्याणां सेवया रोगतोऽथ वा ।
पुष्पे दृष्टेऽथवा शूले बाह्यान्तः स्निग्धशीतळम् ॥ १ ॥
सेव्याम्भोजहिमक्षीरिवल्ककल्काज्यलेपितान् ।
धारयेद्योनिवस्तिभ्यामार्द्रार्द्रान् पिचुनक्तकान् ॥ २ ॥

(Garbhīnyā: parihāryāṇām
sevayā rogatoStha vā ।
puṣpe dr̥ṣṭeSthavā śūle
bāhyānta: snigdhasāṭalam ॥ १ ॥

Sevyāmbhojahimakṣīri-
valkakalkājyalepitān ।
dhārayedyonivastibhyām-
ādrārdrān picunaktakān ॥ २ ॥)

The pregnant woman may have vaginal bleeding or pain related to it due to indulgence of prohibited foods, activities or because of any other diseases. If so, she should be nursed with unctuous and cooling substances externally and internally. Pieces of cloth or cotton smeared with the paste of sevyā (*Vetiveria zizanioides*), ambhoja (*Nelumbo nucifera*), hima (*Santalum album*) and the bark of fig trees should be worn over the genital and bladder regions. They may be kept moist always.

शतधौतघृताक्तां स्त्रीं तदम्भस्यवगाहयेत् ।
ससिताक्षौद्रकुमुदकमलोत्पलकेसरम् ॥ ३ ॥
लिह्यात् क्षीरघृतं खादेच्छृङ्गाटककसेरुकम् ।
पिबेत्कान्ताब्जशालूकबालोदुम्बरवत्पयः ॥ ४ ॥
शृतेन शालिकाकोळीद्विबलामधुकेक्षुभिः ।

पयसा रक्तशाल्यन्नमद्यात्समधुशर्करम् ॥ ५ ॥
रसैर्वा जाङ्गलैः शुद्धिवर्जं चासौक्तमाचरेत् ।

(Śatadhautaghṛtāktām strīm
tadambhasyavagāhayet ।
sasitākṣaudrakumuda
kamalotpalakesaram ॥ 3 ॥
Lihyāt kṣīraghṛtam khāde-
cchrṅgāṭakakaserukam ।
pibetkāntābjaśālūka-
bālodumbaravatpaya: ॥ 4 ॥
Śṛtena śālikākōḷī-
dvibalāmadhukekṣubhi: ।
payasā raktaśālyannamadyāt-
samadhuśarkaram ॥ 5 ॥
Rasairvā jāṅgalai: śuddhi-
varjam cāsroktamācaret ॥ 6 ॥)

The pregnant woman should be anointed with Śatadhauta ghṛta (ghee repeatedly mediated with the decoction of fig trees' bark) and made her to immerse in a tub filled with water boiled with the same drugs (*Vetiveria* etc.). Licking milk and ghee mixed with sugar, honey and the stamens of kumuda (*Nymphaea nouchali*), kamala (*Nelumbo nucifera*), and utpala (*Monochoria vaginalis*); chewing śṛṅgāṭaka (*Trapa natans*) and kaśeruka (*Cyperus esculentus*); drinking milk processed with kāntā (*Callicarpa macrophylla*), abja (*Nelumbo nucifera*), śālūka (root of *Monochoria vaginalis*), and the tender fruits of udumbara (*Ficus racemosa*) are advised. The food should be red śāli rice mixed with milk, boiled with root of śāli (*Oryza sativa*), kākōḷī (*Fritillaria roylei*), two balas (*Sida rhombifolia* ssp. *retusa* and *Sida rhombifolia*), madhuka (*Glycyrrhiza glabra*), and ikṣu (*Saccharum officinarum*); honey and sugar may be added with this preparation. Alternatively, śāli rice can be taken

with the soup prepared from the meat of jāṅgala animals. Regimen prescribed in the context of Raktapitta cikitsa can also be employed omitting purificatory steps.

असम्पूर्णत्रिमासायाः प्रत्याख्याय प्रसाधयेत् ॥ ६ ॥
आमान्वये च तत्रेष्टं शीतं रूक्षोपसंहितम् ।
उपवासो घनोशीरगुडूच्यरळुधान्यकाः ॥ ७ ॥
दुरालभापर्पटकचन्दनातिविषाबलाः ।
क्थिताः सलिले पानं तृणधान्यानि भोजनम् ॥ ८ ॥
मुद्गादियूषैरामे तु जिते स्निग्धादि पूर्ववत् ।

(asampūrṇatrimāsāyā:
pratyākhyāya prasādhayet ॥ 6 ॥
Āmānvaye ca tatṛeṣṭam
śītam rūkṣopasaṁhitam ।
upavāso ghaṇośīra-
guḍūcyaraḷudhānyakā: ॥ 7 ॥
durālabhāparpaṭaka-
candanātiviṣābalā: ।
kvathitā: salile pānam
tṛṇadhānyāni bhojanam ॥ 8 ॥
Mudgādiyūṣairāme tu
jite snigdhdādi pūrvavat ।)

If the woman has not completed three months of her pregnancy and is having vaginal bleeding and pain, then her relatives should be informed about the risky condition before starting any treatment. If she is having troubles due to āmadoṣa (undigested matters clogged in the bowels) then also it should be considered as a risky condition. Here, all the treatment should be aimed at cooling and producing dryness. Fasting is the best approach at first. For drinking, water boiled with ghana (*Cyperus rotundus*), uśīra (*Vetiveria zizanioides*), guḍūci (*Tinospora cordifolia*), araḷu (*Ailanthus excelsa*), dhānyaka (*Coriandrum sativum*),

durālabha (*Tragia involucrata*), paṇḍāka (*Hedyotis corymbosa*), candana (*Santalum album*), ativiṣa (*Aconitum heterophyllum*) and bala (*Sida rhombifolia* ssp. *retusa*) is desirable. When the āma stage is controlled, the food should be of rice or gruel prepared with ṛṇadhānyas [grass grains such as nīvāra (*Hygroryza aristata*) śyāmāka (*Panicum sumatrense*), etc.] with the soup of green gram, etc., and gradually she can have the unctuous food mentioned earlier.

गर्भे निपतिते तीक्ष्णं मद्यं सामर्थ्यतः पिबेत् ॥ ९ ॥
 गर्भकोष्ठविशुद्ध्यर्थमर्तिविस्मरणाय च ।
 लघुना पञ्चमूलेन रूक्षां पेयां ततः पिबेत् ॥ १० ॥
 पेयाममद्यपा कल्के साधितां पाञ्चकौलिके ।
 विल्वादिपञ्चकक्वाथे तिलोद्वाळकतण्डुलैः ॥ ११ ॥
 मासतुल्यदिनान्येवं पेयादिः पतिते क्रमः ।
 लघुरस्नेहलवणो दीपनीययुतो हितः ॥ १२ ॥
 दोषधातुपरिक्लेशोषार्थं विधिरित्ययम् ।
 स्नेहान्नवस्तयश्चोर्ध्वं बल्यदीपनजीवनाः ॥ १३ ॥

(gaṛbhe nipatite tīkṣṇam
 madyam sāmarthyata: pibet ॥ 9 ॥
 Gaṛbhakoṣṭhaviśuddhya-
 ṛthamaṛtivismaraṇāya ca ।
 laghunā pañcamūlena rūkṣāṁ
 peyāṁ tata: pibet ॥ 10 ॥
 Peyāmamadyapā kalke
 sādhitāṁ pañcakaulike ।
 vilvādipañcakakvāthe
 tiloddālakataṇḍulai: ॥ 11 ॥
 Māsatulyadinānyevaṁ
 peyādi: patite kṛama: ।
 laghurasnehalavaṇo
 dīpanīyayuto hita: ॥ 12 ॥
 Doṣadhātuparikṣeda-
 śoṣārtham vidhiritayam ।

snehānavastayaścordhvaṁ
 balyadīpanajīvanā: ॥ 13 ॥)

If the embryo is expelled even after the above said precautions, the woman should drink strong wine according to the strength in order to cleanse her uterus and alleviate the pain. Then she should take thin gruel prepared with the drugs of laghupañcamūla without adding any fat. If she is not accustomed to wine, gruel processed with the drugs of pañcakola can be taken. Alternatively, gruel made of sesame, uddālaka (*Paspalum scrobiculatum*), and rice processed with the decoction of mahat pañcamūla can be taken. This diet regimen (taking of gruel prepared drugs that stimulate digestion without salt and fat) is to be followed for the same number of days as that of the months of pregnancy. This order is meant to remove the moisture latent in the doṣas and dhātus. Subsequently, fats, fatty foods and enemas are to be employed to promote her strength, digestion and vigor.

सञ्जातसारे महति गर्भे योनिपरिस्रवात् ।
 वृद्धिमप्राप्नुवन् गर्भः कोष्ठे तिष्ठति सस्फुरः ॥ १४ ॥
 उपविष्टकमाहुस्तं, वर्द्धते तेन नोदरम् ।

(Sañjātasāre mahati
 gaṛbhe yoniparisṛavāt ।
 vṛddhimaprāpnuvan gaṛbha:
 koṣṭhe tiṣṭhati sasphura: ॥ 14 ॥
 Upaviṣṭakamāhustam,
 varḍdhate tena nodaram ।)

The growth of the properly developing fetus is sometimes retarded due to vaginal bleeding. It remains in the uterus without any further development, but with throbbing, resulting in lack of enlargement of abdomen. This condition is known as upaviṣṭaka.

शोफोपवासरूक्षाद्यैरथवा योन्यतिस्रवात् ॥ १५ ॥
 वाते क्रुद्धे कृशः शुष्येद्गर्भो नागोदरं तु तम् ।
 उदरं वृद्धमप्यत्र हीयते स्फुरणं चिरात् ॥ १६ ॥

(śophopavāsarūkṣādyair-
 athavā yonyatisravāt ॥ 15 ॥
 Vāte kṛuddhe kṛśaḥ śuṣyed-
 garbho nāgodaram tu tam ।
 udaram vṛddhamapyatra
 hīyate sphuraṇam cirāt ॥ 16 ॥)

Due to sorrow, starving, excessive dryness of the constitution, or heavy vaginal bleeding, vāta gets provoked and makes the fetus emaciated and dry. Though the abdomen is already enlarged, it shrinks gradually. The throbbing is felt only after long intervals. This is known as nāgodara.

तयोर्बृहणवातघ्नमधुरद्रव्यसंस्कृतैः ।
 घृतक्षीररसैस्तृप्तिरामगर्भाश्च खादयेत् ॥ १७ ॥
 तैरेव च सुभिक्षायाः क्षोभणं यानवाहनैः ।

(Tayorbr̥ṇhaṇavātaghna-
 madhuradravyasaṃskṛtaiḥ ।
 ghṛtakṣīrarasaiṣṭṛptir-
 āmagaṛbhāmsca khādayet ॥ 17 ॥
 Taireva ca subhikṣāyāḥ
 kṣobhaṇam yānavāhanaiḥ ।)

In both these conditions, the woman should be served with ghee, milk and meat soup processed with drugs, which are nourishing, pacifying of vāta and of sweet taste. She should eat immature embryos of goat, etc. also. After intake of these foods, she should be taken for a ride on shaky vehicles or animals such as horse. (The pregnant women are strictly prohibited from traveling in the jerking vehicles or riding of animals like horse, etc. Generally,

doing such activities immediately after taking food is forbidden to all. Here, it is contrary to this fact that pregnant women are advised to do such activities. This may either be intended to remove the impediments, and facilitate the embryo's growth again, or to get it aborted. Whatever it is, here, the advice given to do such activities is aimed to save the woman from further complications caused by the still-born child. It is also one kind of tadar̥thakāri treatment.)

लीनाख्ये निस्फुरे श्येनगोमत्स्योत्क्रोशबर्हिजाः १८
 रसा बहुघृता देया माषमूलकजा अपि ।
 बालविल्वं तिलान्माषान्सक्तूंश्च पयसा पिबेत् १९
 समेद्यमांसं मधु वा कट्यभ्यङ्गं च शीलयेत् ।
 हर्षयेत्सततं चैनामेवं गर्भः प्रवर्द्धते ॥ २० ॥
 पुष्टोऽन्यथा वर्षगणैः कृच्छ्राज्जायेत, नैव वा ।

(līnākhye nisphure śyena-
 gomatsyotkrośabarhijāḥ ॥ 18 ॥
 Rasā bahughṛtā deyā
 māṣamūlakajā api ।
 bālavilvaṃ tilānmāṣān-
 saktūmśca payasā pibet ॥ 19 ॥
 Samedyamāmsam madhu
 vā kaṭyabhyaṅgam ca śīlayet ।
 haṛṣayetsatataṃ caināme-
 vaṃ garbhaḥ praṇar̥ddhate ॥ 20 ॥
 Puṣṭoऽnyathā varṣagaṇaiḥ
 kṛcchrājāyeta, naiva vā ।)

In līnagar̥bha (a condition in which the fetus emaciates without throbbing), the woman should be served with soup prepared from the meat of hawk, cow, fish, heron or peacock with plenty of ghee. She could also take the soup of black-gram and mūlaka (*Raphanus sativus*) or milk boiled with tender fruits of Bael, sesame

seeds, black-gram, and powders of roasted grain; alternatively, wine with fatty meat can also take. Anointing the hip and groin with oil, keeping the mental and physical condition always pleasant, etc. are prescribed. These treatments will result in the nourishment and proper growth of the fetus. Otherwise, it may grow gradually by the period of many years and may be born with difficulty or may not be born at all.

उदावर्तं तु गर्भिण्याः स्नेहैराशुतरां जयेत् ॥ २१ ॥
योग्यैश्च वस्तिभिर्हन्यात्सगर्भो स हि गर्भिणीम् ।

(udāvartam tu garbhīṅyā:
snehairāsutarām jayet ॥ 21 ॥
Yogyaīśca vastibhiṛhanyāt-
sagarbho sa hi garbhīṅīm ।)

The disease udāvartta must be handled immediately using appropriate fats and suitable enemas (vasti); otherwise, it will ruin both fetus and mother. [Udāvartta is a disease condition in which due to suppression of natural urges or such other provoking causes, vāta gets aggravated and moves upward like a whirl-wind (āvartta) creating various troubles. It is very difficult to treat. Usually vasti is prohibited for pregnant woman up to eighth month, but here even that is prescribed to save the mother.]

गर्भेऽतिदोषोपचयादपथ्यैर्देवतोऽपि वा ॥ २२ ॥
मृतेऽन्तरुदरं शीतं स्तब्धं ध्मातं भृशव्यथम् ।
गर्भास्पन्दो भ्रमतृष्णा कृच्छ्रादुच्छ्वसनं क्लमः । २३ ।
अरतिः स्रस्तनेत्रत्वमावीनामसमुद्भवः ।

(garbheṢtidoṣopacayād-
apathyaiṛdaivatoṢpi vā ॥ 22 ॥
MṛteṢntarudaram śītam
stabdham dhmātam bhṛśavyatham ।

garbhāspando bhṛamatṛṣṇā
kṛcchrādūcchvsanaṁ kḷama: ॥ 23 ॥
Arati: sṛastanetratva-
māvīnāmasamudbhava: ।)

Due to excessive accumulation of doṣas or indulgence in forbidden things, or by misfortune, if the fetus is dead in the uterus, then the abdomen becomes cold, rigid, swollen with severe pain. Fetal movement becomes absent. The woman feels giddiness, thirst, dyspnoea, fatigue and restlessness; her eyelids droop, and feels no labor pain.

तस्याः कोष्णाम्बुसिक्तायाः पिष्ट्वा योनिं प्रलेपयेत् ॥
गुडं किण्वं सलवणं तथान्तः पूरयेन्मुहुः ।
घृतेन कल्कीकृतया शाल्मल्यतसिपिच्छया ॥ २५ ॥
मन्त्रैर्योगैर्जरायूक्तैर्मूढगर्भो न चेत्पतेत् ।
अथापृच्छेश्वरं वैद्यो यत्नेनाशु तमाहरेत् ॥ २६ ॥
हस्तमभ्यज्य योनिं च साज्यशाल्मलिपिच्छया ।
हस्तेन शक्यं तेनैव...

(tasyā: koṣṇāmbusiktāyā:
piṣṭvā yonim pṛalepayet ॥ 24 ॥
Guḍam kiṅvaṁ salavaṇam
tathānta: pūrayenmuhu: ।
ghṛtena kalkikṛtayā
śālmalyatasipicchayā ॥ 25 ॥
Manṭrairyogairjarāyūktair-
mūdhagarbho na cetpatet ।
athāpṛcchyeśvaraṁ vaidyo
yatnenāśu tamāharet ॥ 26 ॥
Hastamabhyajya yonim
ca sājyaśālmalipicchayā ।
hastena śakyam tenaiva....)

In this condition, irrigate with warm water, anoint the vagina with a paste of jaggery, sediment of toddy and rock salt. The vaginal

tract should be filled with a paste of śālmali (*Bombax ceiba*) picchā (slimy inner part) and atasi (*Linum usitatissimum*) mixed with ghee. If the dead fetus is not expelled by these applications, hymns and medicines prescribed for the expulsion of placenta, then the physician, after taking permission from the authorities, should try to pull it forcibly. His hand and vagina should be lubricated with the above said picchā of śālmali mixed with ghee. If possible, the physician should pull the fetus out with his hand itself.

.....गात्रं च विषमं स्थितम् ॥ २७ ॥
आञ्छनोत्पीडसम्पीडविक्षेपोत्क्षेपणादिभिः ।
आनुलोम्य समाकर्षेद्योनिं प्रत्यार्जवागतम् ॥ २८ ॥

(.....gātraṁ ca viṣamaṁ sthitam ॥ 27 ॥
Āñchanotpīḍasampīḍa-
vikṣepotkṣepaṇādibhiḥ ।
ānulomya samākṛṣed-
yonim pratyārjavāgatam ॥ 28 ॥)

If the body of the fetus is in an irregular position, it should be corrected by such a handlings as āñchana (gripping and making into shape), utpīḍana (pressing upward), sampīḍana (pressing and pushing from all the sides or rotating), vikṣepa (throwing), utkṣepa (throwing upward), etc., and when it descends down into the genital tract properly, pull it out carefully.

हस्तपादशिरोभिर्यो योनिं भुग्नः प्रपद्यते ।
पादेन योनिमेकेन भुग्नोऽन्येन गुदं च यः ॥ २९ ॥
विष्कम्भौ नाम तौ मूढौ शस्त्रदारणमर्हतः ।
मण्डलाङ्गुलिशस्त्राभ्यां तत्र कर्म प्रशस्यते ॥ ३० ॥
वृद्धिपत्रं हि तीक्ष्णाग्रं न योनावचारयेत् ।
(Hastapādaśirobhiryo

yonim bhugna: prapadyate ।
pādena yonimekena
bhugnoऽnyena gudaṁ ca ya: ॥ 29 ॥
Viṣkambhau nāma tau mūḍhau
śaṣṭradāraṇamarhata: ।
maṇḍalāṅguliśastrābhyāṁ
tatṛa kṛma praśasyate ॥ 30 ॥
Vṛddhipatṛaṁ hi tikṣṇāgraṁ
na yonāvācārayet ।)

If the fetus descends into the genital tract with its hand, feet and head (in a crooked position) or if it comes out with one leg through the vagina, and the other through the rectum, both these conditions are known as viṣkambha. These are to be handled with surgical procedures. The best instruments to be employed here are maṇḍalāgra (lancet) and aṅguliśastra (finger knife), which are described in the chapter 26 of Sūtrasthāna. The instrument vṛddhipatṛa with sharp end should not be used in the vagina.

पूर्वं शिरःकपालानि दारयित्वा विशोधयेत् ॥ ३१ ॥
कक्षोरस्तालुचिबुकप्रदेशेऽन्यतमे ततः ।
समालम्ब्य दृढं कर्षेत्कुशलो गर्भशङ्कुना ॥ ३२ ॥
अभिन्नशिरसं त्वक्षिकूटयोर्गण्डयोरपि ।
बाहुं छित्त्वाऽससक्तस्य वाताध्मातोदरस्य तु ॥ ३३ ॥
विदार्य कोष्ठमन्त्राणि बहिर्वा सन्निरस्य च ।
कटीसक्तस्य तद्वच्च तत्कपालानि दारयेत् ॥ ३४ ॥
यद्यद्वायुवशादङ्गं सज्जेद्गर्भस्य खण्डशः ।
तत्तच्छित्त्वाऽऽहरेत्सम्यग्रक्षेत्रीं च यत्नतः ॥ ३५ ॥

(pūrvam śira:kapālāni
dārayitvā viśodhayet ॥ 31 ॥
Kakṣorastālucibuka-
praśeṣeऽnyatame tata: ।
samālambya dṛḍham kṛṣet-

kuśalo gaṛbhaśaṅkunā ॥ 32 ॥
 Abhinnaśirasam tvakṣi-
 kūṭayorgaṇḍayorapi ।
 bāhum chittvāmśasaktasya
 vātādhmāodarasya tu ॥ 33 ॥
 Vidārya koṣṭhamantrāṇi
 bahirvā sannirasya ca ।
 kaṭisaktasya tadvacca
 tatkapālāni dārayet ॥ 34 ॥
 Yadyadvāyuvaśādaṅgam
 sajjedgaṛbhasya khaṇḍaśa: ।
 tattacchittvāśharetsamyag-
 rakṣennārīm ca yatnata: ॥ 35 ॥

In viṣkambha, the skull of fetus should be opened first and the contents removed. Then any of the body parts (the axillae, chest, palate or chin) should be held tight with the forceps and the expert physician should pull it out slowly. If the head of the fetus is not opened and cleared, the physician should fix the forceps in its eye sockets or cheeks. If impeded by the position of the shoulders, the arms should be cut off and then pulled out. If the obstruction is by a bloated abdomen, then it should be split, the intestines removed and then pulled out. If impeded by the hip, the pelvic bones should be cut. Thus prioritizing the safety of the mother, whichever body part of the fetus is the cause of obstruction by the provocation of vāta, should be cut into pieces and taken out.

गर्भस्य हि गतिं चित्रां करोति विगुणोऽनिलः ।
 तत्रानल्पमतिस्तस्मादवस्थापेक्षमाचरेत् ॥ ३६ ॥

(Gaṛbhasya hi gatiṁ citrām
 karoti viguṇoSnila: ।
 tatṛānalpamatistasmād-
 avasthāpekṣamācaret ॥ 36 ॥)

The aggravated vāta will change the movements and course of the fetus in various directions. So the physician should be very careful and remedies according to the conditions are to be adopted.

छिन्द्याद्गर्भं न जीवन्तं मातरं स हि मारयेत् ।
 सहात्मना, न चोपेक्ष्य: क्षणमप्यस्तजीवित: ॥ ३७ ॥

(Chindyādgaṛbham na jīvantaṁ
 mātaraṁ sa hi mārayet ।
 sahātmanā, na copekṣya:
 kṣaṇamapyastajīvita: ॥ 37 ॥)

If the fetus is not dead, then do not cut it. Since such cutting will cause sudden death of the fetus, it will also cause serious damage or death of the mother. However, if it is dead, appropriate actions should be taken to remove it immediately.

योनिस्ववरणभ्रंशमक्कल्लश्वासपीडिताम् ।
 पूत्युद्गारं हिमाङ्गी च मूढगर्भो परित्यजेत् ॥ ३८ ॥

(Yonisaṁvaraṇabhraṁśa-
 makkallaśvāsapīḍitām ।
 pūtyudgāraṁ himāṅgī ca
 mūdhagaṛbho parityajet ॥ 38 ॥)

If the woman with mūdhagaṛbha is having contraction or prolapse of the uterus, makkalla (pain in the head, bladder region and abdomen after delivery), dyspnoea, fowl smelling eructations and coldness of the body, then the physician should avoid the risk of undertaking her treatment.

अथापतन्तीमपरां पातयेत्पूर्ववद्दिषक् ।
 एवं निर्हृतशल्यां तु सिञ्चेदुष्णेन वारिणा ॥ ३९ ॥
 दद्यादभ्यक्तदेहायै योनौ स्नेहपिचुं ततः ।
 योनिर्मृदुर्भवेत्तेन शूलं चास्या: प्रशाम्यति ॥ ४० ॥

(Athāpatantūmaparām
 pātayetpūrvavadbhiṣak ।
 evaṁ niḥrataśalyām tu
 siñceduṣṇena vāriṇā ॥ 39 ॥
 Dadyādabhyaktadehāyai
 yonau snehapiçum̐ tata: ।
 yonirmrduḥbhavettena
 śūlaṁ cāsyā: praśāmyati ॥ 40 ॥)

After the extraction of the dead fetus, if the placenta is not expelled, the physician should try to remove it by the same methods prescribed in the previous chapter (first chapter of Śarīrasthāna - śloka 83-87). After its removal, irrigate her body with warm water and then anoint with oil. Put a piece of cloth soaked in ghee or oil in the vagina. This makes the vagina soft and reduce the pain.

दीप्यकातिविषारास्नाहिङ्ग्वेलापञ्चकोलकात् ।
 चूर्णं स्नेहेन कल्कं वा क्वाथं वा(तां)पाययेत्ततः ॥ ४१ ॥
 कटुकातिविषापाठाशाकत्वग्धिङ्गुतेजिनीः ।
 तद्वच्च दोषस्यन्दार्थं वेदनोपशामाय च ॥ ४२ ॥
 त्रिरात्रमेवं, सप्ताहं स्नेहमेव ततः पिबेत् ।
 सायं पिबेदरिष्टं च तथा सुकृतमासवम् ॥ ४३ ॥
 शिरीषककुभक्वाथपिचून् योनौ विनिक्षिपेत् ।
 उपद्रवाश्च येऽन्ये स्युस्तान् यथास्वमुपाचरेत् ॥ ४४ ॥

(Dīpyakātiviṣārāsnā
 hiṅvelāpañcakolakāt ।
 cūrṇam snehena kalkaṁ vā
 kvātham vā(tām)pāyayettata: ॥ 41 ॥
 Kaṭukātiviṣāpāṭhā-
 śākatvagdhiṅgutejinī: ।
 tadvacca doṣasyandārtham
 vedanopaśamāya ca ॥ 42 ॥
 Tṛirātramevaṁ, saptāhaṁ
 snehameva tata: pibet ।

sāyam̐ pibedariṣṭam̐ ca
 tathā sukr̥tamāsavam ॥ 43 ॥
 Śirīṣakakubhakvāthapicūn̐
 yonau viniḥṣipet ।
 upadravāśca yeṣnye syu-
 stān̐ yathāsvamupācāret ॥ 44 ॥)

Then the drugs such as dīpyaka (*Trachyspermum roxburghianum*), ativiṣā (*Aconitum heterophyllum*), rāsnā (*Alpinia galanga*), hiṅgu (*Ferula asafoetida*), elā (*Elettaria cardamomum*), Pippali (*Piper longum*), pippalīmūla (root of *Piper longum*), cavya (*Piper brachystachyum*) citṛaka (*Plumbago indica*) and nāgara (*Zingiber officinalis*) prepared in the form of powder, paste or decoction, mixed with fat are to be taken. Similarly, drugs such as kaṭukā (*Picrorhiza scrophulariiflora*), ativiṣā (*Aconitum heterophyllum*), pāṭhā (*Cyclea peltata*), śākatvak (bark of *Tectona grandis*) hiṅgu (*Ferula asafoetida*) and tejinī (*Celastrus paniculatus*) can be taken in the same way. This order is to be followed for three days to remove the moisture from the doṣas and to get relief from the pain. After this, fats without these drugs are to be taken for seven days; ariṣṭa or āsava can be taken in the evening. Put pieces of cloth dipped in the decoction of śirīṣa (*Albizia lebbek*) and kakubha (*Terminalia arjuna*) in the vagina. If there may arise any complications, treat them according to the symptoms.

पयो वातहरैः सिद्धं दशाहं भोजने हितम् ।
 रसो दशाहं च परं लघुपथ्याल्पभोजना ॥ ४५ ॥
 स्वेदाभ्यङ्गपरा स्नेहान् बलातैलादिकान् भजेत् ।
 ऊर्ध्वं चतुर्भ्यो मासेभ्यः सा क्रमेण सुखानि च ॥ ४६ ॥
 (Payo vātaharai: siddham̐
 daśāham̐ bhojane hitam ।

raso daśāhaṁ ca param
 laghupathyālpabhojanā ॥ 45 ॥
 Svedābhyaṅaparā snehān
 balātailādikān bhajet ।
 ūrdhvam caturbhyo māsebhyaः
 sā kṛameṇa sukhāni ca ॥ 46 ॥)

For ten days, the suitable food is milk boiled with vāta-mitigating drugs, and meat soup for the following ten days. After that, light food agreeable to the present condition can be given in small quantity. Anointing with *Balātaila*, etc. and irrigation with warm water are to be done. After having this regimen for four months, gradually the woman returns to the normal life.

बलामूलकषायस्य भागाः षट् पयसस्तथा ।
 यवकोलकुलत्थानां दशमूलस्य चैकतः ॥ ४७ ॥
 निष्क्राथभागो भागश्च तैलस्य तु चतुर्दशः ।
 द्विमेदादारुमञ्जिष्ठाकाकोळीद्वयचन्दनैः ॥ ४८ ॥
 शारिबाकुष्ठतगरजीवकर्षभसैन्धवैः ।
 काळानुसार्याशैलेयवचागुरुपुनर्नवैः ॥ ४९ ॥
 अश्वगन्धावरीक्षीरशुकळायष्टीवरारसैः ।
 शताह्वानुशूर्पण्येलात्वक्पत्रैः श्लष्णकल्कितैः ॥ ५० ॥
 पक्कं मृद्वग्निना तैलं सर्ववातविकारजित् ।
 सूतिकाबालमर्मास्थिहतक्षीणेषु पूजितम् ॥ ५१ ॥
 ज्वरगुल्मग्रहोन्मादमूत्राघातान्त्रवृद्धिजित् ।
 धन्वन्तरेरभिमतं योनिरोगक्षयापहम् ॥ ५२ ॥

(Balāmūlakaṣāyasya
 bhāgāḥ ṣaṭ payasastathā ।
 yavakolakulatthānām
 daśamūlasya caikataḥ ॥ 47 ॥
 Niṣkvāthabhāgo bhāgaśca
 tailasya tu caturdaśaḥ ।
 dvimedādārumañjiṣṭhā
 kākoḷīdvayacandanaiḥ ॥ 48 ॥

Śāribākuṣṭhatagara-
 jīvakaṣṭhasabhasaindhavaiḥ ।
 kālānusāryāśaileya-
 vacāgurupunaṛnavaiḥ ॥ 49 ॥
 Aśvagandhāvarīkṣīra-
 śukḷāyaṣṭivarārasaiḥ ।
 Śatāhvāśūrpaṇnyelā-
 tvakpatraiḥ ślaṣṇakalkitaiḥ ॥ 50 ॥
 Pakvaṁ mṛdvagninā tailaṁ
 sarvavātavikārajit ।
 sūtikābālamaṛmāsthi-
 hataḥṣiṇeṣu pūjitam ॥ 51 ॥
 Jvaragulmagrahonmāda-
 mūtrāghātāntravṛddhijit ।
 dhanvantarerabhimatam
 yonirogakṣayāpaham ॥ 52 ॥)

Here is the method of preparation of *Balātaila* (*Dhānvantarataila*), which is very effective in all vāta disorders and especially for postpartum period. Take six parts of the decoction of the roots of *Sida rhombifolia* ssp. *retusa*, same quantity of milk, one part of the decoction made of yava (*Hordeum vulgare*), kola (*Ziziphus mauritiana*), kulatha (*Macrotyloma uniflorum*) and daśmūla and one part of sesame oil. Grind the following drugs and add to the above said combination of liquids:

Meda	<i>Polygonatum cirrhifolium</i>
Mahāmeda	<i>Polygonatum verticillatum</i>
Dāru	<i>Cedrus deodara</i>
Mañjiṣṭhā	<i>Rubia cordifolia</i>
Kākoḷī	<i>Fritillaria roylei</i>
Kṣīrakākoḷī	<i>Lilium polyphyllum</i>
Candanam	<i>Santalum album</i>
Śāribā	<i>Hemidesmus indicus</i>
Kuṣṭha	<i>Saussurea lappa</i>
Takara	<i>Valeriana jatamansi</i>
Jīvaka	<i>Malaxis acuminata</i>

Rṣabhaka	<i>Malaxis muscifera</i>
Saindhava	Rock salt
Kālānusāri	<i>Trigonella foenum-graecum</i>
Śaileya	<i>Parmelia perlata</i>
Vacā	<i>Acorus calamus</i>
Aguru	<i>Aqilaria agallocha</i>
Punarnava	<i>Boerhaavia diffusa</i>
Aśvagandhā	<i>Withania somnifera</i>
Varī	<i>Asparagus racemosus</i>
Kṣīraśuklā	<i>Ipomoea mauritiana</i>
Yaṣṭī	<i>Glycyrrhiza glabra</i>
Varā	<i>Terminalia chebula</i>
	<i>Terminalia bellirica</i>
	<i>Phyllanthus emblica</i>
Rasa	<i>Commiphora myrrha</i>
Śatāhvā	<i>Anethum graveolens</i>
Sūpyapaṇṇī	<i>Vigna pilosa</i>
	<i>Vigna radiata</i> var. <i>sublobata</i>
Elā	<i>Elettaria cardamomum</i>
Tvak	<i>Cinnamomum verum</i>
Paṭra	<i>Cinnamomum tamala</i>

The above combination should be boiled over a mild fire till it becomes properly medicated. This is the famous *Dhānvantarataila* approved by Dhanvantari, the God of medicine. This is an excellent medication for patients afflicted with vāta diseases, postpartum women, children, and those suffering from injury to marṃas (vital spots) and bones. This is also beneficial in fevers, abdominal swellings, troubles due to affliction by evil spirits, insanity, painful micturition, hernia, all genital disorders and consumption.

वस्तिद्वारे विपन्नायाः कुक्षिः प्रस्पन्दते यदि ।
जन्मकाले ततः शीघ्रं पाटयित्वाद्द्वारेच्छिशुम् ॥ ५३ ॥

(Vastidvāre vipannāyā:
kukṣiḥ praspaṇdate yadi ।
janmakāle tataḥ śīghraṃ
pāṭayitvoddharecchīśum ॥ 53 ॥)

The period from the beginning of the ninth month onwards, is considered as janmakāla or sūtikāla (time for delivery). During this period, if the woman dies accidentally and her abdomen throbs strongly near the bladder region, incise the abdomen immediately and take out the baby. Here are some effective groups of herbs (auśadhayogas) for preventing the threat of recurrent abortion:

मधुकं शाकबीजं च पयस्या सुरदारु च ।
अश्मन्तकः कृष्णतिलास्ताम्रवल्ली शतावरी ॥ ५४ ॥
वृक्षादनी पयस्या च लता सोत्पलसारिवा ।
अनन्ता शारिबा रास्ना पद्मा च मधुयष्टिका ॥ ५५ ॥
बृहतीद्वयकाशमर्यक्षीरिशुङ्गत्वचा घृतम् ।
पृश्निपर्णी बला शिग्रुः श्वदंष्ट्रा मधुपर्णिका ॥ ५६ ॥
शृङ्गाटकं विसं द्राक्षा कशेरु मधुकं सिता ।
सप्तैतान् पयसा योगानर्द्धश्लोकसमापनान् ॥ ५७ ॥
क्रमात्सप्तसु मासेषु गर्भे स्रवति योजयेत् ।

(Madhukaṃ śākabījaṃ ca
payasyā suradāru ca ।
aśmantakaḥ kṛṣṇatilā-
stāmravallī śatāvārī ॥ 54 ॥
Vṛkṣādānī payasyā ca
latā sotpalasārivā ।
anantā śāribā rāsnā
padmā ca madhuyaṣṭikā ॥ 55 ॥
Bṛhatīdvayakāśmarya-
kṣīriśuṅgatvacā ghr̥tam ।
pṛśnipaṇṇī balā śigruḥ
śvadamṣṭrā madhuparṇikā ॥ 56 ॥
Śṛṅgāṭakam visam drākṣā
kaśeru madhukaṃ sitā ।
saptaitān payasā yogān-
arddhaślokasamāpanān ॥ 57 ॥
Kramātsaptasu māseṣu
garbhe sravati yojayet ।)

1 Madhuka	<i>Glycyrrhiza glabra</i>
Śākabija	<i>Tectona grandis</i> - seed
Payasyā	<i>Ipomoea mauritiana</i>
Suradāru	<i>Cedrus deodara</i>
2. Aśmantaka	<i>Rotula aquatica</i>
Tāmravalli	<i>Rubia cordifolia</i>
Kṛṣṇatila	<i>Sesamum indicum</i>
Śatāvārī	<i>Asparagus racemosus</i>
3. Vṛkṣādānī	<i>Dendrothoe falcata</i>
Payasyā	<i>Ipomoea mauritiana</i>
Latā	<i>Callicarpa macrophylla</i>
Utpalaśāribā	<i>Ichnocarpus frutescens</i>
4. Anantā	<i>Tragia involucrata</i>
Śāribā	<i>Hemidesmus indicus</i>
Rāsnā	<i>Alpinia galanga</i>
Padmā	<i>Nervilia aragoana</i>
Madhuyaṣṭika	<i>Glycyrrhiza glabra</i>
5. Bṛhatīdvaya	<i>Solanum anguivi</i>
	<i>Solanum surattense</i>
Kāśmarya	<i>Gmelina arborea</i>
Kṣīraśuṅga- tvaca	sprouts and bark of the fig trees
Ghṛta	Ghee
6. Pṛśnipaṇḍī	<i>Desmodium gangeticum</i>
Balā	<i>Sida rhombifolia</i> ssp. <i>retusa</i>
Śigru	<i>Moringa oleifera</i>
Svadamṣṭra	<i>Tribulus terrestris</i>
Madhupaṇḍīka	<i>Tinospora cordifolia</i>
7. Śṛṅgāṭaka	<i>Trapa natans</i>
Biśa	<i>Lotus fiber</i>
Drākṣa	<i>Vitis vinifera</i>
Kaśeru	<i>Cyperus esculentus</i>
Madhuka	<i>Glycyrrhiza glabra</i>
Sita	Sugar

The above seven yogas enumerated in each

half verse are to be used in the form of decoction mixed with milk from the first month of pregnancy onwards to prevent the abortion.

कपित्थविल्वबृहतीपटोलेक्षुनिदिग्धिकात् ॥ ५७ ॥

मूलैः शृतं प्रयुञ्जीत क्षीरं मासे तथाऽष्टमे ।

नवमे शारिबानन्तापयस्यामधुयष्टिभिः ॥ ५९ ॥

योजयेद्दशमे मासि सिद्धं क्षीरं पयस्यया ।

अथवा यष्टिमधुकनागरामरदारुभिः ॥ ६० ॥

(kapitthavilvabṛhatī-

paṭolekṣunidigdḥikāt ॥ 57 ॥

Mūlai: śṛtaṁ praṇuñjīta

kṣīraṁ māse tathāṣṭame ।

navame śāribānantā-

payasyāmadhuyaṣṭibhi: ॥ 59 ॥

Yojayeddaśame māsi

siddhaṁ kṣīraṁ payasyayā ।

athavā yaṣṭimadhuka-

nāgarāmaradārubhi: ॥ 60 ॥)

In the eighth month, milk boiled with the roots of kapitha (*Limonia accidissima*), vilva (*Aegle marmelos*), bṛhati (*Solanum anguivi*) patola (*Trichosanthes lobata*), ikṣu (*Saccharum officinarum*) and nidigdḥikā (*Solanum surattense*) should be taken. In the ninth month, milk boiled with śāribā, anantā, payasyā and madhuyaṣṭī; and in the tenth month, milk boiled with payasyā or with yaṣṭimadhu, nāgara and amaradāru are to be used.

अवस्थितं लोहितमङ्गनाया

वातेन गर्भे ब्रुवतेऽनभिज्ञाः ।

गर्भाकृतित्वात्कटुकोष्णतीक्ष्णैः

सुते पुनः केवल एव रक्ते ॥ ६१ ॥

गर्भं जडा भूतहतं वदन्ति

मूर्तेर्न दृष्टं हरणं यतस्तैः ।

ओजोशनत्वादथवाऽव्यवस्थै-

भूतैरुपेक्षयेत न गर्भमाता ॥ ६२ ॥

(Avasthitam lohitamaṅganāyā
vātena garbhe bruvateSnabhijñā: ।
garbhākṛtitvātkaṭukoṣṇatikṣṇai:

sṛute puna: kevala eva rakte ॥ 61 ॥

Garbham jaḍā bhūtaḥṛtam vadanti
mūrterṇa drṣṭam haraṇam yatastai: ।

ojośanatvādathavāSvyavasthai-
rbhūtairupekṣyeta na garbhāmātā ॥ 62 ॥)

Sometimes, the menstrual blood is obstructed and retained in the uterus due to the agitation of vāta, and gradually some pregnancy symptoms may be revealed. Then inexperienced people take it for pregnancy. However, afterwards, when the retained blood only is

discharged by the administration of hot, pungent, and sharp substances, they say that the fetus is snatched away by the evil spirits (bhūtas). This is an irrational argument, for the evil spirits consume only the ojas (the essence of the dhātus) and the snatching away of a body is seen nowhere. If they were so, devoid of rules and laws, they would not have neglected the mother of the fetus.

इति श्रीवैद्यपतिसिंहगुप्तसूनुश्रीमद्वाग्भटविरचिता-
यामष्टाङ्गहृदयसंहितायां द्वितीये शारीरस्थाने
गर्भव्यापन्नम द्वितीयोऽध्यायः ॥ २ ॥

(Iti śrīvaidyapatisimhaguptasūnuśrīmad-
vāgbhaṭaviracitāyāmaṣṭāṅgahṛdayasaṁhitāyām
dvtiye śārīrasthāne garbhavyāpannāma
dvtiyoSdhyāya: ॥ 2 ॥)

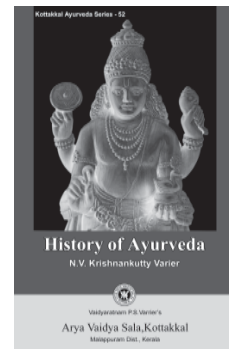
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APPLICATION OF LEECH THERAPY IN THE MANAGEMENT OF ŚVITṚA (LEUKODERMA)

M. Mruthyumjaya Rao, V.C. Deep, M.M. Padhi, B. Das, G.C. Nanda and D.P. Sahu*

Abstract: The once reviled leech (*Hirudo medicinalis*), has recently been lauded for its potential in preventing repeat heart attacks¹, various skin diseases and osteoarthritis². This paper is a pilot study evaluating the efficacy of leech therapy in the management of śvitṛa (leukoderma).

Introduction

Leech therapy has a long tradition. Ācārya Suśruta (about 1500 B.C.)³, vividly describes the leech therapy including their habitation, varieties, characteristics of poisonous and non-poisonous leeches, their collection, preservation, processing and application on various diseases. Egyptians had also used them as early as in 1500 B.C.⁴. In the 19th century, leeches were not limited to blood letting by physicians in America, but used as a common remedy to treat gum disorders and hemorrhoids and to relieve pain of large bruises⁵. Leech therapy is currently used in both paediatric and adult populations to treat various diseases and some complications like venous congestion after plastic and microsurgery. It is also used as an adjuvant to digit replantation and transfer flaps when reconnecting enough small veins to ensure venous return.

Śvitṛa is a condition where there is lack of or absence of melanocytes causing hypopigmented areas over skin⁶. Suśrutasaṁhita explains the development of śvitṛa and states that it causes due to the vitiation of rakta and other doṣas, and the remedy is letting out the vitiated blood by various means. Since leeches are widely accepted painless means of blood letting, in order to see its role in the śvitṛa management, a pilot study was carried out on seven patients at Central Research Institute (Ay.), Bhubaneswar on various parameters.

Materials and methods

An open trial on 7 patients, comprising of 4 females and 3 males, age ranging from 13 years to 48 years, were selected. Out of 4 females, 2 were students and 2 were housewives; among males one was student and 2 were doing small

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businesses. All of them were non-vegetarians, and had *Giardia* and *Entamoeba histolytica* cysts in the stool of 5 and 3 patients respectively (Table 1). Their mean haemoglobin before leech therapy was recorded as 11.3 gm % (Table 2).

Treatment

Preparation:- The affected part is to be cleansed with plain hot water. A pinch of saindhava (rock salt) is to be touched at mouth of the leech, to take out residual blood if remained in the gut.

Application:- About 2-3 leeches according to the size and number of patches, were applied directly over the affected part and allowed to suck the blood till they themselves were detached or for a period of 30 to 45 minutes. Usually leech-bite is painless and attaches readily; if not, a needle prick is to be made over the skin for the attachment. Leeches were applied at the interval of once for 6 weeks. And the volume of the blood vomited by the leech after application, site and time of application, time of removal, patients' response, temperature and colour of area, pre and post therapy, etc. were recorded.

Wound care:- No specific care is needed; only light bandaging is done and the wound is allowed to ooze the blood freely. Cotton soaked in Murivenṇa applied over the bitten area.

Results

After six applications over different affected areas for a period of 30 to 45 minutes, complete change colour to normalcy was observed in one patient, a girl of 13 years, and appearance of new pigmentations of 0.2 to 0.4 mm size over the affected parts ranging from 5-8 spots

TABLE 1
Conditions of the patients on admission

Sr. No.	Characteristics	No. of patients
1.	Age group:	
	Up to 20	2 (F)
	21 - 30	1 (M)
	31 - 40	1 (M)
		2 (F)
	41 & above	1 (M)
2.	Duration of the disease (in years)	
	< 1	2
	1 - 2	1
	2 - 3	1
	> 3	3
3.	Dietary habit:	
	Vegetarian	0
	Non vegetarian	7
4.	Part affected:	
	Limbs	4
	Body	2
	Lips	1
5.	No. of patches hypopigmented areas:	
	Single	2
	Two	4
	Three	1
6.	Colour of patch/affected area:	
	Pink	3
	Copper	1
	White	3

TABLE 2
Level of Heamoglobin before and after treatment

Sr. No.	Hb% (gm%) before treatment	Hb% (gm%) after treatment
1	10.5	10.3
2	11.3	10.8
3	10.3	9.5
4	11.5	9.6
5	9.8	10.5
6	10.5	11.0
7	11.0	10.3
Mean Hb%	10.7	10.28

on each affected patch was found in three patients, i.e. two female and one male. In remaining cases, only change in colour from white to light pink was found without producing any pigmentation (Table 3). Assessment was made on the haemoglobin levels pre and post leech applications and a mean of reduction of 0.43 gm% was observed (Table 2).

Discussion

According to Caraka, the disease śvitṛa is developed when the doṣas occupies the asthidhātu which indicates the involvement of the deeper structures and is in deep white colour. Even though different stages have been mentioned in ayurveda, one thing is true that the part is devoid of melanocytes and lack of microcirculation in that particular part.

The main therapeutic benefits of leeches are not derived from the average 5-15 ml of blood

removed during biting, but from the different enzymatic substances secreted from the saliva of leeches. Two among these substances are presumed to be responsible for the development or generation of the pigmentation over the affected part i.e. 1. anticoagulants and 2. vasodilators. Usually this anti-coagulant, *Hirudin* works in conjunction with a vaso dilator, which relaxes the smooth muscles of blood vessels to widen the diameter of the vessel increase the flow of blood⁷. However, the effectiveness of this therapy may not simply be due to enhanced blood flow, but because of bleeding from a bite may continue as long as 10 hours, establishing micro channels in that particular area while ultimately that leads to formation of melanocytes. Since it is a pilot study involving only seven cases, the authors feel a more number of cases are required to draw a concrete conclusion.

TABLE 3
Speed of healing of śvitṛa observed

Sr. No.	Appearance of pigmentation by week (No. of leech application)	No. of pigmentation spots seen after 6 weeks	No. of pigmentation spots appeared at the first instance	No. of Hypopigmented areas changed to normal skin after 6weeks/6 sitting of leech therapy
1.	3rd week	4 - 8	Full area covered	One
2.	3rd week	3	8	-
3.	3rd week	2	7	-
4.	4th week	2	5	-
5.	Nil	Nil	Nil	Only white colour has been
6.	Nil	Nil	Nil	noticed to be changed to
7.	Nil	Nil	Nil	light pink colour.

Acknowledgement

The authors are thankful to the Director, CCRAS for help and support and also to the patients who gave their consent for the study.

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MACRO AND MICROSCOPICAL STUDIES ON CONES OF *CUPRESSUS MACROCARPA* HARTWIG.

S. Manimaran, S.Thenmozhi, Saleemulla khan, B.S.Ashok kumar,
M.J. Nanjan and B. Suresh*

Abstract: The cones of *Cupressus macrocarpa* Hartwig., (Cupressaceae) were collected, identified and dried under shade. The dried cones were powdered and used for determination of physico-chemical constants. The macroscopical and microscopical characters were evaluated using fresh cones. The oil distilled from the leaves and cones is used as an antiseptic, antimicrobial, anti-inflammatory and diuretic.

Introduction

The word *Cupressus* is derived from the Greek, *Kuparissos*; the ancient name of Cupressus was Cypress comprised nearly 12 species (Baily, L.H. 1965). *Cupressus macrocarpa* of the family Cupressaceae is also known as Monterey Cypress. The name *macrocarpa* is derived from the Greek terms *makros* and *karpos*; *makros* means long and *karpos* means fruit (Mathew, K.M., 1969). The acetone extract of the cones has been isolated and characterised for biflavone compounds viz., sesquiflavone, amendo flavone, cupresso flavone procured from Ootacamund (Abul qasim et al, 1985). Decoction of the leaves is used in rheumatism and the cone essential oil is used as antimicrobial, anti-inflammatory, diuretic and antiseptic. The aim of the present work is morphological, microscopical and physicochemical evaluation of the cones of *Cupressus macrocarpa*.

Materials and Methods

Collection:- Fresh cones of *Cupressus macrocarpa* were collected from Government Botanical Garden, Ootacamund, during the fruiting season (August to October), identified and authenticated by Dr. Ramsunder, Manager, Government Botanical Garden, Ootacamund, The Nilgiris. Standard methods of microscopy were followed as given by Johnson (1940) & Wallis (1967).

Distribution:- Truly wild at Monterey in California, now grown successfully in South Africa, New Zealand, Australia, Uganda and Kenya. In India, it is distributed in Nilgiris and Kodaikanal.

Microscopy

The seed cones were cut and removed from the plant and fixed in FAA (Formalin - 5 ml + acetic acid - 5 ml + 70 % ethyl alcohol - 90 ml). After 24 hours of fixing, the specimens

were dehydrated with graded series of tertiary butyl alcohol (TBA) as per the schedule given by Sass (1940). Infiltrations of the specimens were carried by gradual addition of paraffin wax until TBA solution attained super saturation. The specimens were cast into paraffin blocks. The paraffin embedded specimens were sectioned with the help of rotary microtome (LEICA RM, 2135, Germany). The thickness of the sections was 10-12 μm . Dewaxing of the sections was done by customary procedure given by Johnson (1940). The sections were stained with Toluidine blue as per the method published by O' Brien (1964). The necessary sections were also stained with safronin, fast green and Iodine in potassium iodide for starch and other constituents (Foster, A.S. 1934). Microscopic descriptions of tissues are supplemented with micrographs wherever necessary; photographs of different magnifications were taken with Nikon Labphot 2 microscopic unit. For normal observations bright field was used. For the study of crystals, starch grains and lignified cells, polarized light was employed. Since these structures have birefringent property under polarized light, they appear bright against dark background. Magnifications of the figures are indicated by the scale-bars (Esau, K. 1965 & Esau, K. 1979).

Physical constants

The part of the cones were dried, powdered and subjected to ash values and extractive values determination as per the standard procedures. [Pharmacopoeia of India, (1966); Kokate, C.K., (1991); Trease, G.E., & Evans, V.C., (1985)]

Results

Morphology

Young cones are green; mature cones are brown, the cones are hard and woody. Each cone has up to 6 ovuliferous scales, which are fused in young cones, dehiscent and separate from each other in matured cones. The seeds are flat, circular with narrow wings on the lateral sides and broad wing at the apex. (Fig 1) (Mathew, K.M. 1969)

Microscopical characters

The cone axis has a whorl of large, collateral vascular bundles from which several lateral vascular traces are produced, that enter into the ovuliferous scales. In transverse section of the cone, the seeds appear in longitudinal view. The seed is thicker in the middle and tapering towards the apex. The seed is 1 mm thick in the middle and 200 - 300 μm thick along the margins. The seed coat has Sarcotesta, Sclerotesta and Endotesta (Fig IIa&b)

Fig. 1

External features of young and matured cones of *Cupressus macrocarpa*



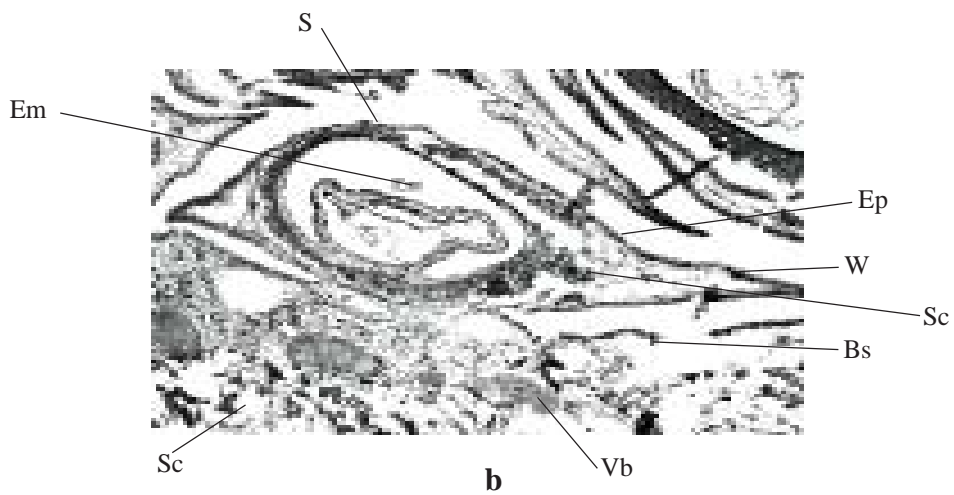
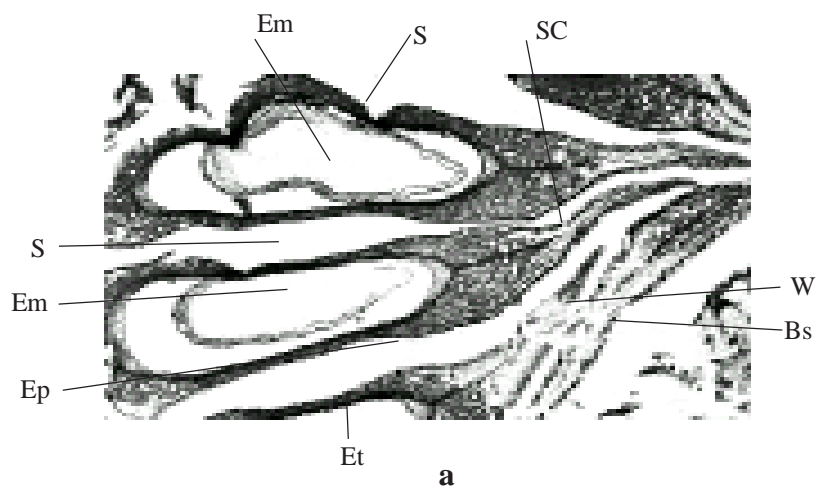


Fig. II a&b: Sseeds of *Cupressus macrocarpa*
a. Longitudinal section **b.** Transverse section

Em Embryo sac **S** Seed **SC** Sclerieds **Ep** Epidermis **Et** Endotesta
W Wing **Bs** Bract scale **Vb** Vascular bundles

Sarcotesta:- It is a thin and single layered tissue represented as epidermis. The Sarcotesta increases to 2 or 3 layers along the lateral wings.

Sclerotesta:- It is 2 or 3 layered in the middle and becomes multilayered along the lateral part, especially at the outer terminal part. Sclerotesta consists of thick walled, wide lumened sclereids. The walls of the sclereids are lignified and appear bright under Polarized light microscope due to the presence of the lignin in the walls (Fig III a&b).

Endotesta:- It is the innermost one or two cells thick layer with parenchymatous and thin walled cells.

The embryo sac present inside the seed coat and it has outer cell layers and central vacuole with peripheral free nuclei. Calcium oxalate crystals are abundant in the cells of the sclerotesta. The crystals are of prismatic type; each sclereid has a single crystal occupying

the cell lumen. The bract scale has parenchymatous ground tissue with scattered, much elongated sclereids (Fig IV) [Mathew, K.M., (1983), Metcalfe et al (1976), Nair *et al* (1983)].

Physical constants determination

The various physical constants viz: Total ash, Acid insoluble ash, Sulphated ash, Water soluble ash, Alcohol soluble and Water soluble extractive values were carried out. The results are shown in Table 1.

TABLE 1
Physical constant of the cones

Ash values (% w/w)	
- Total ash	: 3.15
- Acid insoluble ash	: 0.16
- Water soluble ash	: 1.39
- Sulphated ash	: 2.45
Extractive values (% w/w)	
- Alcohol soluble extractive	: 21.03
- Water soluble extractive	: 17.65

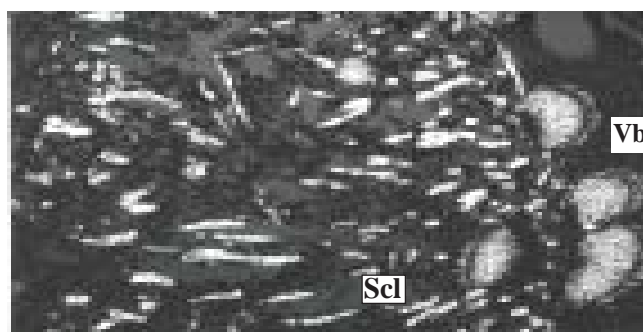
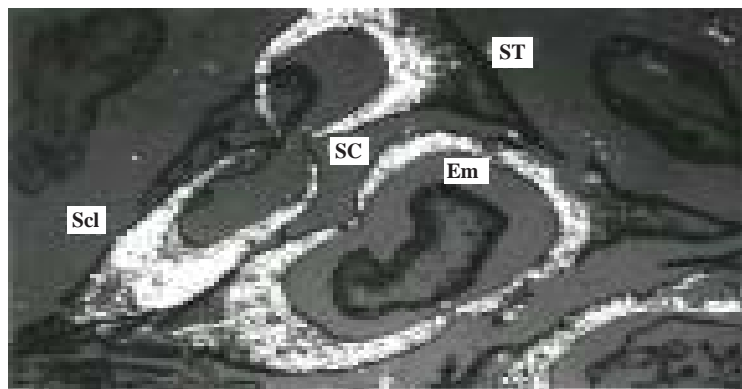
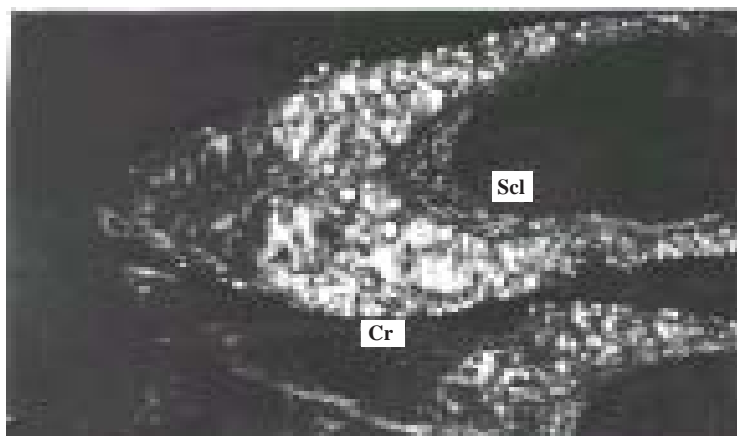


Fig. IV. Ovaliferous scale showing vascular bundles and sclereids under polarized light microscope

Vb. Vascular bundles **Scl** Sclereids



a



b

Fig. III a&b

a Seeds under polarised light microscope

b Sclereids and crystals in the seed coat under polarised light microscope

Scl Sclereids **Em** Embryo sac **SC** Seed coat **ST** Sclerotesta **Cr** Crystals

Discussion

The macroscopic, microscopic and physical evaluation (ash values and extractive values) of the cones of *Cupressus macrocarpa* were carried out. Cupressus is the largest family in the order, Coniferales with 19 genera and 130 species of trees and shrubs. Many of the species are closely related morphologically offering difficulties in proper identification of the correct species. Thus our study will help in correct identification of this species.

Acknowledgement

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ROLE OF EYE EXERCISE, TOPICAL AND INTERNAL MEDICATION IN MYOPIA - A CLINICAL STUDY

N. Srikanth*, Mridula Dua, Praveen Bansal and D.K. Misra**

Abstract: Myopia (timirahṛasvadṛṣṭi) is a refractive condition of the eye in which when the eye is at rest, the incident parallel rays after under going refraction through the optical system of the eye come to a focus in front of the photo sensitive layer of the retina. This paper deals with a clinical study evaluating the effect of eye exercises and topical and internal medication in myopia.

Introduction

Myopia is one of the most commonly occurring ametropic conditions (refractive errors) of the eyes in day-to-day clinical practice presenting with defective vision for distant objects as the cardinal feature. Myopia, otherwise known as shortsightedness, is that dioptric condition of the eye in which, with the accommodation at rest, incident parallel rays come to focus anterior to the photosensitive layer of retina (fovea-dṛṣṭimaṇḍala).

Description concerning aetiopathogenesis, clinical features and the line of management of different ametropic conditions including myopia is found in ayurvedic texts. Suśrutasamhita, the most authentic work on ayurvedic ophthalmology, describes different afflictions of the tunics of the eye (dṛṣṭigatapaṭalas), which are

comparable to refractive media of the eye viz. cornea, uvealtract, lens, vitreous and the photosensitive layer, the retina¹. Clinical features of afflictions of the first three paṭalas broadly reflect the concept of refraction and errors of refraction. Identical comparable condition of myopia is found as one of the clinical feature of timira of third paṭala (medo āśṛita paṭala), where reduced visual acuity for distance is the striking feature ascribed to the affection of doṣas in the upper part of the tunic². Considering the above description it can be concluded that the afflictions of I, II, III paṭalas may be comparable to errors of refraction. In affections of III paṭala, when doṣas invade the upper part of the tunic, the patient feels difficulty in observing distant objects. This particular stage may be considered as myopia.

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The two main theories of causation are: a) Stretch or traction theory and b) Genetic theory.

Stretch or traction theory:- According to this theory abnormal stretching of the sclera especially in posterior segment results in degenerative changes in the retina. Cause of abnormal stretching may be a hereditary factor, nutritional factor, endocrine factor, or inherent weakness of sclera itself.

Genetic theory:- According to this theory myopia is hereditary and it is an abnormal genetic disorder.

A criteria was followed to exclude other types myopia so also to screen simple myopia (Chart 1).

Need for alternative therapies and integration

Current management of myopia includes optical and surgical methods. Optical measures such as use of spectacles, contact lens and low vision

aids have a great role in improving the visual acuity of myopes to a great extent. But, myopes are more prone to injuries and occasionally eyeball may be injured due to shattering of glasses. In some cases use of contact lens causes corneal irritation leading to opacities of cornea. Surgical methods such as radial keratotomy, scleral resection, filtering operations, etc. have been found to be ineffective and none of these has been safe (Agrawal and Gupta, 1992).

Owing to all the above adverse effects of different optical and surgical measures, it is at this juncture that the need for drugs/measures that could effectively tackle the myopia without any adverse effects.

Ayurveda has identified three important factors being responsible for the causation of all types of diseases, which include ophthalmic problems too. 1. Incompatible contact of sense organs (eyes) with their respective sensations (asātmye indriyārtha samyoga), 2. Misuse of intellect

Chart 1

The criteria followed to exclude other types of myopia and to screen simple type of myopia

Simple myopia/Stationary myopia	Progressive myopia
1. Simple because it is not associated with pathological changes	Associated with cellular malignancy
2. Myopia stops when the body growth stops	Myopia progresses even though the body growth stops
3. Sporadic in nature	Hereditary and recessive
4. Myopia is always less than – 6D	Myopia is always more than - 6D
5. No degenerative changes of vitreous, retina and choroids are seen	Degenerative changes of vitreous, retina and choroids are seen
6. With correction of refractive error vision can be improved to 6/6	With correction of refractive error vision cannot be improved to 6/6

(prajñāparādha) and 3. Abnormal cycles of seasons (ṛtuviparyaya).

To overcome these three factors ancient medical scholars prescribed specific diet (āhāra), drugs (auśadha) and practices (vihāra). Out of these three, vihāra or practices play a central role in the prevention and cure of eye diseases. Practices advised for the protection of the eyes such as pādābhyāṅga (massage of feet), śītaḷodaka upacāra (cold water applications) are mentioned in various texts of ayurveda. Solar therapy (sūryopāsana) is found in Netṛopaniṣad resembles therapeutic principles of yoga and naturopathy.

It is seen that the contemporary yoga movement supplanted its philosophical values and got shrouded with art of physical culture. This phase is characterized by rapid movement of haṭhayoga, which includes adaptation of yogāsana and prāṇāyāma procedures to protect the eyes from different affections.

In the present time's new eye diseases have become a major threat to the mankind and hence significance of multidisciplinary approach becomes mandatory. Integration of concepts of Ayurvedic ophthalmology, principles of yoga and naturopathy and practices of eye exercises may turn a new leaf in tackling eye problems.

Materials and methods

238 simple myopic cases were recruited in the study from Out Patient department of eye clinic, Central Research institute (Ay.), New Delhi, considering the selection criteria.

Aims and objectives:- To observe effect of eye exercises, topical and internal medication on visual acuity in the cases of simple myopia.

Selection of the drug and schedule of admini-

stration:- Topical administration of netrabindu, drops prepared with Rasāñjana - extract of dāruharidra (*Berberis aristata* DC.) and rose water twice in a day and Saptāmṛtaloha 60 mg BD (Ayurvedic Formulary of India, part I) was given internally for 3 months along with schedule of exercises twice daily, i.e. morning and evening for the same period. The following was the eye exercises:

Sunning:- The eye is to be exposed to sun for a period of 5 minutes daily. First, apply honey with a glass rod in each eye, after that sit facing the sun with eyes closed and chin raised, then sway the body from side to side like a pendulum for 5 minutes

Eye wash:- After sunning, come to shade and rinse the eyes by blinking about 20 times in a weak solution of triphala, using a pair of eye cups filled to the brim. Eyewash is effective in toning up the eye muscles and the surrounding tissues.

Palming:- Sit comfortably with the eyes closed and covered by palms of the hands (the fingers being crossed upon the forehead). Elbows should rest on a cushion in such a way so as to avoid pressure on the eyeball. Perfectly black field is experienced before the eyes. Improvement in eyesight and feeling of relaxation and relief of pain and sense of coolness in the head can be experienced. This exercise can be practiced several times during the day. Morning is best suited. Fatigue, noise, hunger, anger, worry or depressions are conditions, which make palming difficult. While palming, take deep breath and keep the mouth closed. See that more time is taken for exhalation than inhalation and continue the exercise till you complete one hundred respirations.

Swinging/Shifting:- Moving the eye from one side to another is called shifting. Stationary objects appear to move in the direction opposite to the movement of the head and eyes. For example, when you travel in a fast moving train, telegraph poles and other objects (though stationary) appear to move in the opposite direction. The eye gets rest only when it is moving. Shifting can be practiced both either with eyes open or closed.

Stand straddled in front of a board with vertical bar like structures, and move the body from right to left or vice versa for 50 to 100 times. Keep eyes and the sight shifting along with the movement of head and blink at each end. Observe that the bars appear to move in the opposite direction.

The right way to swing is to move the eyes from one point to another slowly, regularly, continuously, restfully, easily without effort and without trying to see any other object. Do not stare at objects and make no effort to fix the sight at them. Lazily shift the sight from one point to another without having any idea that you are seeing the objects. Blink once on each side. Move the head, eyes and body rhythmically from side to side.

Candle flame:- Sit facing the candle flame about one feet apart and gently move the body forward and backward with the rhythm of respiration; continue the exercise till complete 25 to 100 respirations..

Candle light reading:- Small print reading is beneficial to the eye. It saves the eyes from cataract, glaucoma or other old age diseases of the eyes. Shift the sight on white line of small print and blink at the end each line. Read fine print in good light and candlelight alternatively

without glasses or with glasses with each eye separately. The book is to be held at such a distance that it could be seen best. The patient should not look directly at the letters but just at the white spaces between the lines of print and imagine that they are perfectly white. Move the head a little from side and blink often.

Playing with the ball:- Toss the ball to the ground and observe the bouncing ball moving the sight and head simultaneously. Increase the speed of the ball and continue the exercise for about 50 to 100 times. After this, toss the ball from one hand to other hand and move the head and the eyes along with the ball, and blink when catch the ball. Repeat it for 50 to 100 times.

Vaporisation:- Put two or three drops of eucalyptus oil or crystals of menthol into boiling water and by covering the head allow the vapor to strike on the face and keep blinking for sometime till the patient perspire.

Cold pads:- Wipe out the perspiration and put cotton pads, soaked in cold water and squeezed, on the closed eyes and relax for 10 minutes.

Triphalakaṣāya preparation:- In one cup of water ¼ teaspoonful of triphalā powder is to be added, boiled for five minutes and filtered. When it is lukewarm, fill up the eye cups and wash the eyes. Fresh kaṣāya has to be prepared for each application.

Inclusion criteria

- Simple myopia of moderate type (up to 6 diopters) either sex between the ages of 6 - 25 years.
- Visual acuity of the patient should be 6/6 with best possible correction.
- May or may not be associated with

discomfort of eye pain, headache and eyestrain.

Exclusion criteria

- Patients below the age group of 6 years and above 25 years
- Case of simple high myopia (more than 6 Dioptors)
- Case of progressive axial pathological myopia
- Patients of myopia associated with degenerative changes (on ophthalmoscopic examination)
- Associated with endocrine and nutritional disorders
- Large prominent eyes with floaters and flashes
- Patients of myopia with deep anterior chamber (ophthalmoscopic examination)
- Patients of myopia with sluggish pupil reaction
- Association with central or peripheral scotoma
- Associated with ocular disorders such as night blindness, coloboma, microphthalmias, keratoconus, retinitis pigmentosa, ectopia-lentis and glaucoma.
- Visual acuity for distance less than 6/6 with best possible correction

Assessment

The criterion was assessment of visual acuity for distance (change in visual acuity assessed by Snellen’s distant test types). Routine Hematological and Bio-chemical examinations were done before treatment. Progress was assessed at an interval of one month for three months.

Observations

Of 238 cases of both sexes between the age group of 6-25 years, 110 (46.2%) cases were males and 128 (53.78%) were females; the

maximum numbers of 121 (50.8%) cases were between the age group of 10-19 years. Diminished visual acuity for distance was found in all the 238 cases while headache in 23 (9.66%) cases and discomfort of eye pain and eyestrain was observed in 120 (50.42%) cases (Table 1). A maximum number of 104 (43.6%) cases belonged to middle socio economic group (Table 2). Further under diet pattern, 120 (50.42%) of the cases were vegetarians and 118 (49.5%) were non-vegetarians. Family history of Myopia was present in 85 (35.7%) cases. Maximum numbers of cases were literates except 5 (2.0%) cases (Table 3).

TABLE 1
Distribution of symptoms

Symptoms	No. of cases	%
Diminished visual acuity for distance	238	100
Headache	23	9.66
Discomfort of eye pain and eyestrain	120	50.42

TABLE 2
Socio-economic status

Status	No. of cases	%
Low income group	85	35.7
Middle income group	104	43.6
High income group	49	20.5

TABLE 3
Educational status

Status	No. of cases	%
Illiterate	5	2.0
Read & Write	38	15.96
Middle school	63	26.47
High School	73	30.6
Higher education	60	25.2

Results

Improvement in visual acuity, assessed by Snellen's distant test types, was observed in some cases. While no improvement in visual acuity was found in 72 (30.2%) cases, 3 line improvement of visual acuity was found in 5 (2.10%) cases, 2 line improvement in 31 (15.9%) and 1 line improvement in 63 (26.4%); and 60 (25.2%) cases were drop outs (Table 4). There were no significant changes in the Dioptic power except in few (12 - 5.042%) cases; there was change in dioptic power reduced by - 0.25D in low grade myopia. Headache was found in 23 (9.66%) cases before treatment and only in 6 (2.5%) cases after completion of the treatment. Discomfort of eye pain and eyestrain was found in 120 (50.42%) cases before treatment and 28 (11.76%) cases after the completion of treatment.

Discussion & conclusion

A vast number of indigenous drug claims to be used in the management of disorders of vision call for scientific validation for their attributes

TABLE 4
Changes in visual acuity after treatment

Visual acuity	No. of cases	%
3-line improvement	05	2.1
2-line improvement	38	15.9
1-line improvement	63	26.4
No improvement	72	30.2
Drop out	60	25.2

and principles. The response obtained may be explained with pharmacological actions viz. cakṣuṣyā (improves visual acuity) netṛya/netṛahita (conducive to visual system) timira hara (effective in managing disorders affecting vision), netṛāmayaghni, aśeṣākṣirogahara (effective in managing various disorders of the eye,) etc. ascribed to individual ingredients of formulations employed in the study viz. netṛabindu³ drops (prepared with rasāñjana extract of dāruharidra and rose water and saptāmṛtalauha⁴ for internal use) (Table 5). Mode of action of ocular exercises may be explained with the following hypothesis. Eye

TABLE 5
Pharmacological actions/ophthalmic indications of certain ingredients of Saptāmṛtalauha

Drug	Pharmacological actions/indications	Reference
Āmalakī (<i>Emblīca officīnalis</i>)	Cakṣuṣyā (Improves vision) Timirahara (Effective in managing vision disorders)	Actions & uses indigenous ophthalmic drugs, P25.
Harītakī (<i>Terminalia chebula</i>)	Netṛāmayaghni, Aśeṣākṣirogahara (Effective in managing various eye disorders) Cakṣuṣyā (Improves vision)	Ibid, P61.
Vibhātakī (<i>Terminalia bellirica</i>)	Netṛya/Netṛahita (Conducive to visual system) Cakṣuṣyā (Improves vision)	Ibid, P60.
Ghṛta (Ghee)	Cakṣuṣyā, Timira (Disorders of vision)	Ibid, P111.
Ayoraḷa (loha) (Iron)	Cakṣuṣyā, Timira	Ibid, P74
Madhu (Honey)	Cakṣuṣyā	Ibid, P113.

exercises help in accommodation and during the exercises both eyes converge and facilitate to focus near object. The eyes when subjected to convergence exercises, may tone up the two medial rectii there by preventing exophoria in the cases of myopia. The schedule may help in toning extra ocular and ciliary muscles thereby improves working efficacy. The scheduled regimen is helpful in improving visual acuity and reduction in dioptric power in low-grade cases of simple myopia besides achieving symptomatic relief. Long-term studies with more number of cases provide further insight concerning recurrence and efficacy of therapeutic schedules.

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RESEARCH IN ROGAVIJÑĀNA INTERPRETING NEWER DISEASES

K. Murali*

Abstract: Gaveṣaṇa is one of the common terms used in the sense of research. Literally it means searching for the cow; here it means search for the missing or lacking in the śāstra. In this paper, the author elaborately discusses the possibilities of researches to diagnose new diseases through ayurvedic point of view.

Research, in fact is the only tool for redaction (pṛatisaṃskaraṇa), which means updating of the śāstra. Rejecting the irrelevant notions, adding newer concepts and perfecting the applied aspects are the core factors of redaction. All these factors could be the positive outcome of an ardent research. Gaveṣaṇa is one of the common terms used in the sense of research. Literally, it means searching for the cow. In agrarian culture, it is usual to leave the cow for mazing. In the dusk, one has to look for the cow to bring it back home. Therefore, gaveṣaṇa means search what is missing or lacking. What lacks the śāstra to respond to the challenges of the time is filled by a positive conclusion of the research. Gaveṣaṇa also means search with indriyas which connotes what is inferred should be confirmed by direct observation. Anusandhāna is rethinking or continued contemplation. So, research is a continued enquiry and review of

scientific data. Parīkṣa and eṣaṇa denotes enquiry into unknown areas; widening the scope of śāstra is connoted by these terms. Śodhana, which also is considered as a synonym, means purification of the śāstra. It avoids interpolations and rejects irrational concepts

In the clinical field, rogavijñāna concerned with the knowledge of the abnormality of the body with its manifestations, is an important area where research, fundamental and applied has to be concentrated. The present day trend is to do clinical trails with a modern diagnosis and ayurvedic drug. Ayurveda is not a particular type of drug. It has its own interpretations of abnormalities of the body and mind and ayurvedic treatment is based upon those concepts. In addition, drug is only a part of treatment. Mithyāhāravihāras (causative food and life style) are to be corrected and this is advised in the form of pathyāpathya. It seems

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that these aspects are not much considered in modern ayurvedic research. As treatment has to be samprāptivighāṭana (reversion of samprāpati), proper understanding of the rogavijñāna is a must for a scientific management. Even newer diseases that are not mentioned in ayurvedic texts are to be understood and approached in an ayurvedic line. Only then these types of clinical trails can be considered as comprehensive ayurvedic research.

Dr. P M Unnikrishnan highlights the various issues involved in the cross-cultural medical research¹. Cross-cultural research means the study of one system of knowledge, which has developed in a particular cultural context, with another system developed from another cultural context with different foundations, logic, philosophical frame work, concepts and categories. Doing research in ayurveda with the parameters of modern medicine has many shortcomings.

Newer patterns of doṣic vitiations may emerge and surpass the prevalent ones so long as the existence of human race. This causes the manifestation of different types of diseases hitherto unknown. As mentioned by Sri Gananath Sen Saraswathi in the introductory part of his work on Rogavijñāna, there can be many known and unknown reasons for this phenomenon². According to Vāgbhaṭa, all diseases cannot be detailed in the texts³. Only those that are most prevalent in that particular period of time (āviṣkṛtatamas) are mentioned in Saṁhitas. Śuśruta also advises that the diseases that are not detailed in the texts can be treated according to the doṣic vitiation⁴. But, as far as a novice is concerned, a new disease or an illness that are not mentioned in the text causes many a problem in the management. More so,

the patient or the public also wants to know how ayurveda explains a particular diseased state.

A newer disease can be approached in three ways. Firstly, it may not be considered as a disease entity. The doṣas and dūṣyas involved are to be assessed and a plan for management is to be formulated. Naming an illness is not necessary to understand it⁵. Knowledge of the morbid factors is the real understanding of the disease. This is the usual approach adopted in the cases of vague presentations and where diagnosis is not possible or not easier. Here the understanding may differ from physician to physician.

Secondly, it can be correlated with any of the diseases mentioned in the ayurvedic texts. This is the mostly appreciated way now a days. Here, the problem is that the comparison may be partial and there can be differences of opinion. All the twenty mehas are clinical variants of diabetes mellitus for some, as the pūrvarūpas common to all the twenty resembles the symptomatology of diabetes mellitus⁶. Another view is that except madhumeha, all other mehas are various urinary dyscrasias⁷.

In a seminar on peripheral vascular disease, differences of opinion were raised on the correlative studies⁸. One scholar considered it as vātaśoṇita, since there is an involvement of rakta and srotas. The treatment done accordingly in a number of cases found significantly effective. Another scientist presented it as nijavṛṇa and that line of management worked well. A well-experienced physician diagnoses the cases, especially of lower limb as piṇḍikodveṣṭa and advises vātānuloma treatment very effective in his observations⁹. Here, the former two scholars reached almost

similar treatments but through different pathways. Perhaps these three approaches may be appropriate in the three different sequel of the disease.

Kumaraswamy B. V. (1994) in a study to find an ayurvedic identity of cancer had selected a hundred cases of abdominal tumour (as it is a major area for clinical diagnosis of cancer) and an ayurvedic diagnosis with possible aetiological association was arrived¹⁰. The main manifestations are gulma, udara and vidradhi as it cannot be equated with single disease entity. Viṣa concept of ayurveda is also postulated in interpreting the malignancy.

In a conceptual study on cancer in ayurveda G. C. Prasad *et al.*¹¹ correlates certain diseases like māmśaja oṣṭa, alasa, māmśakachapa, galaudha, asādhya types of gaḷagaṇḍa, ṭṛido-ṣajagulma, sannipāta udara, liṅgārśas, ṭṛido-ṣajanāḍivṛaṇa, certain types of pṛadara and some forms of kāmala as cancer. This idea is derived from not a clinical manifestation alone but from the prognostic points also. An inquiry into urticaria may sometimes reach dūṣiṣa as pointed by Rajkumar K.C.¹²

Third option is more relevant when incidence of the cases is very high especially in an epidemiological dimension. It is better to interpret the disease as a distinct variety. This enables a better and easier understanding of the abnormality among the ayurvedic fraternity; communications between the physicians are also very pertinent. Minute aspects of the saṁprāpti omitted in correlative studies can be incorporated in the understanding. Correspondingly, an ideal line of management can be formulated. This may lead to the discovery of vyādhiviparīta (disease-specific) type of drugs

also. Assessment of sādhyāsādhyata and evaluation of upadravas can be done better.

Āmavāta is an example for scientific approach to a newer disease. Association of āma with vāta is not new to the Saṁhitas. The lakṣaṇas and upaśaya-anupaśaya are well documented in Aṣṭāṅgahr̥daya¹³. Manifestation of sāmavāta also is not left unnoticed, as it is mentioned in vātaśoṇita-nidāna. This condition was not considered as a separate disease entity, probably due to low incidence rate in those periods. Later, it became a common health problem and Mādhavācārya has observed it in detail¹⁴. Specific nidānas (vyādhihetuka-vyāyāma after snigdhabhojana) dūṣyas and avayavas involved (hr̥daya) were identified. The disease process (saṁprāpti) was elicited. These findings are documented as a separate chapter, which is one of the highlights of his monumental work, Rugviniścaya. Later, Cakṛapāṇidatta formulated the line of treatment for āmavāta including laṅghana, svedana, dīpana, etc¹⁵. Thus, this disease entity was also added to the clinical practice of ayurveda. All these are not contradictory to the concepts of Saṁhitas but are expansion or application of the ideas expressed in them.

Reference to vātaśoṇita as mahāvātavyādhī by Suśrūta probably indicates that this illness was separated from the group of vātavyādhīs and was given a separate disease entity¹⁶. Also, there are occasions when an illness without any appreciable resemblance with any of the diseases mentioned in the texts, is encountered. In such situations, we have to interpret the abnormality of the body with a proper nidānapañcaka. Here an attempt is made to formulate certain guidelines in this respect.

Nidāna and its doṣic effects are to be assessed first in case of foodstuffs, rasa and other properties that enable us in this matter. For example, fast foods are of kaṭu, aṁḷa and lavaṇa in rasa, which vitiates vāta and pitta. Mostly these are vidāhi in effect and virudha by svabhāva and saṁyoga. Doṣic assessment of vihāras is also important. The problem with this is the changes in lifestyle, since the period of Saṁhitas. Travelling in horses and chariots were the causative factors of bhagandara in earlier times. Those nidānas disappeared as patterns of life changed a lot. Similarly, nidānas of many diseases are replaced by the vihāras of present life style. Bodily effects of these are to be interpreted. But how?

One of the criteria that can be considered is in terms of viṁśati guṇas. These twenty guṇas are also termed as śarīraguṇas, since they can be elicited in the body during normalcy and also in abnormality. Many symptoms in fact, are the manifestation of increased or decreased degree of any of the śarīraguṇas. For example, constipation is due to rūkṣaguṇa precipitated in koṣṭha. Increased uṣṇaguṇa is the cardinal symptom of jvara. Guruguṇa can be elicited by increased body weight or excessive sleep.

Newer nidāna may also be interpreted in terms of guṇas with which the involved doṣa and its nature of vitiation can be inferred. Cigarette smoking may be considered rūkṣa. Travelling is cala in bodily effect. Analysing the newer causative factors thus may throw more light on the doṣadūṣya vaiṣamya.

Some vihāras can be easily understood by way of doṣas concerned in their execution. Cycling is the combined effort of apāna and vyāna. Therefore, their vitiation may be looked for when

cycling is found to be among the causative factors. Nidānas are classified severally and the causative factors of a newer disease are to be compared with the different types of nidāna. Understanding the nature of nidāna will be of much help in many a way especially in the formation of pathyāpathya.

Vyādhihetuka (disease specific) type of nidāna is perhaps the essential feature of a distinct disease entity. This makes the saṁprāpti more specific, and identification of this nidāna enables to form better preventive measures. Differentiating utpādaka and vyañjaka types (predisposing and precipitating causes) is also important. Sādhāraṇa and asādhāraṇa types are more relevant in the case of janapadodvamsas (epidemics) differentiating social and individual causes. Identifying santarṇaṇa or apatarṇaṇa nidāna in a disease is significant so far as treatment is concerned. Food and lifestyle in the causative factors are represented by āhara and vihāra. Identification of the exact āharavihāra that cause the illness may not be possible now a days because of the complex lifestyle. However, if the guṇa of that mithyāhāravihāra can be identified from the symptoms, there is a clue for the management of the illness. The concept of hetusaṅkara denotes the presence of multiple factors involved in most of the diseases.

Pratyātmikalakṣaṇa is the borderline between pūrvarūpa and lakṣaṇas. So without recognising this lakṣaṇa, a proper differentiation between pūrvarūpas and rūpas is not possible. Even though the doṣic involvement cannot be understood fully, pūrvarūpas enable earlier diagnosis. Care should be taken to note the mānasa types also. Viśiṣṭapūrvarūpas should be looked for as they help in doṣic identification.

Among the lakṣaṇas, pratyātmika type is of prime importance as it is the ātmarūpa of the vyādhi. In most of the cases, the vyādhi is named after this lakṣaṇa. AIDS may not be considered as disease entity as it does not have a pratyātmikalakṣaṇa.

As doṣas pervade all over the body and they are at the bottom of all ailments, each and every symptom can be attributed to any of the three doṣas. So many varieties of symptoms are mentioned in our śāstra. Probably no new symptom has emerged so far that is not known to ayurveda. Hence it is easier to interpret lakṣaṇas in terms of doṣas.

The symptoms associated with pratyātmika lakṣaṇa indicate the doṣic types of the disease. Only by encountering many cases of the same illness, the number of doṣic types (saṅkhyā-saṃprāpti) can be determined. Not all doṣic types may be expected for a disease; for example, there are no dvidoṣaja types of kāsa.

An idea of upaśaya and anupaśaya may be formed from the cases of classical presentations of the illness. Treatment history, aggravating and relieving factors of the disease, etc. contribute much to the elicitation of upaśayanupaśaya.

Vyādhi is nothing but the saṃprāpti. Saṃprāpti of a newer disease should be constructed very cautiously and precisely as the aim of the treatment is to break or to reverse the saṃprāpti. The series of internal changes that lead to the total abnormality, inferred from the totality of symptoms, is in fact, the disease. Each symptom specifically indicates the type of doṣakopa or vikṛti in a sṛotas. In annavaḥasṛotas, arocaka indicates agnimāndya, chaṛḍi, vimārga-gamana, ādhmāna, srotorodha, udgāra, pratilomagati, śūla, vātakopa, antaṛdāha, pittakopa,

stambha, kaphakopa and so on.

The types of nidāna also count a lot assessing saṃprāpti. Śītaguṇa causes stambha of vāta while rūkṣa cause śoṣa to the dūṣyas. In the evaluation of vikalpasāṃprāpti these aspects are also considered along with the assessment of proportionate vitiation of all the three doṣas. Primary and secondary nature of illness is also to be determined which is denoted by the concept of prādhānyasaṃprāpti. Kṛiyākālas are the stages of saṃprāpti that can be identified with the sequel of manifestations of the disease process. Pūṛvarūpas represents sthānasamśraya lakṣaṇas and vyakti and upadravabheda stages of saṃprāpti. Caya, kopa and early stages of vyakti need doṣaviparīta type of treatment. Later stages of vyakti respond to vyādhiviparīta or śodhana and bheda to śodhana and rasāyana.

Incorporation of the ideas from the Western medicine may also assist to widen the understanding of the illness. It should be born in mind that these are just to supplement the understanding of doṣavaiṣamya, especially abnormalities at dhātu and avayava. These may enable to formulate vyādhiviparīta type of remedies.

Determining the prognosis of an illness is important in the context of ethics and management. Vyādhibala (balasaṃprāpti) is the main tool in this respect. Progression of the disease and other bodily states also count a lot.

To make the śāstra update, a re-assessment of the nidānapañcaka of the diseases mentioned in the texts is also needed. During the centuries, the shape and content of the documented patterns of doṣavaiṣamya has changed a lot. Some part of the nidānapañcaka needs to be corrected to make the descriptions precise. These illnesses

persist in the society with a changed but possibly similar nidāna.

What is common in the three approaches of interpretation of the diseases detailed so far, is the determination of doṣavaīṣamya. Without this, any explanation is meaningless and formulation of a treatment protocol is impossible in an ayurvedic way. Administering a medicine without an ayurvedic rationale cannot be considered as ayurvedic treatment i.e. using guggulu on the diagnosis of arteriosclerosis without a corresponding doṣic analysis¹⁷. Doṣavaīṣamya is the 'paramārthika' while disease is 'vyāvahārika' (as the truth depicted in vedānta) in nature. The latter approach is narrative, enabling easier communication between physicians. It is actually a wider application of the first approach and is more explanatory to the patient.

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STANDARDISATION OF VAIŚVĀNARACŪṚṆAM

A. Thankamma *et. al**

Abstract: Vaiśvānaracūṛṇam, an ayurvedic finished product, is commonly used in the treatment of piles, indigestion and gas trouble. This paper briefly discusses the chemical standardisation of the drugs that are used in the formulation of Vaiśvānaracūṛṇam; Thin Layer Chromatographic method used for the detection is also explained.

Introduction

Standardisation assures that products are reliable in terms of quality, efficacy, performance and safety. It also helps to avoid adulteration and improper substitution. It is essential that some sort of uniformity in the manufacturing procedures should be brought about.

The aim of this study is to fix the physico-chemical standards of Vaiśvānaracūṛṇam and the drugs used in the formulation. Each drug is characterised on the basis of their intrinsic chemical constituent.

From the standardisation point of view, chemical values of the individual drugs used in the finished products can be used as preliminary reference standards for market samples of the single drugs.

Materials and methods

The standard Vaiśvānaracūṛṇam was prepared using botanically and pharmacognostically genuine and authentic ingredients as per the

Pharmacopoea of the Ayurveda College, Thiruvananthapuram. The sample was prepared under the supervision of the Research Officer of the College.

The physico-chemical parameters of the single drugs and finished products were determined using the standard procedures (1, 2) prescribed in the Ayurveda Pharmacopoea of the Central Council for Research in Ayurveda and Siddha (CCRAS), Govt. of India.

The Thin Layer Chromatographic study of the cūṛṇam is considered more useful to find the presence of the drugs used in the finished product. Hence this method was used for the detection. The drugs used in this formulation are induppu (rock salt), jīrakam (*Cuminum cyminum*), ayamōdakam (*Trachyspermum ammi*), tippali (*Piper longum*), cukku (*Zingiber officinale*) and kaṭukkāttōṭu (*Terminalia chebula*) (Table 1).

Thin Layer Chromatography

Thin layer Chromatographic study was carried

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out using silica gel G plates activated at 100° for 40 min. The solvents used were of HPLC grade. The spots were visualised in an iodine chamber. Extracts of the single drugs were taken with suitable solvents and these extracts were spotted in the activated TLC plates along with the alcohol extract of the finished product.

Results

The analysis done on the preliminary parameters of finished product such as colour, moisture content, ash value, etc. using solvents of increasing polarity in the order: pet ether, cyclo hexane acetone and alcohol; and the result observed was recorded (Table 2). The detection of the drugs was carried out using TLC technique and the values obtained were as follows.

Sample : Alcohol extract of
Vaiśvānaracūrṇam

Solvent system : Cyclohexane -
Ethyl acetate 4:1

hRf Value : 38, 63, 73, 84, 97

The TLC pattern of the finished product observed is detailed in the Table 3. The analysis

of the finished product was done using different solvent system and the results obtained were recorded as follows:

Colour	: Yellowish brown
Smell	: Pungent
Taste	: Characteristic of the ingredients
Appearance	: Powder
Moisture content	: 9.0%
Water soluble extractive	: 37.8%
Total ash	: 8.8%
Water insoluble ash	: 0.45%
Acid insoluble ash	: 0.14%
Percentage of extractives:	
Pet ether	: 5.9%
Cyclohexane	: 0.35%
Acetone	: 17.02%
Alcohol	: 18.6%

Discussion

The values given are as an average of minimum three samples. The physico-chemical parameters give an idea of the characteristics of each drug by which they are identified. For example even after preliminary drying the

TABLE 1
Ingredients of Vaiśvānaracūrṇam

Scientific name	Sanskrit Name	Malayalam Name	Part used	Quantity
Rock salt	Saindhava	Induppu		4 gm
<i>Cuminum cyminum</i>	Jiraka	Jirakam	fruit	8 gm
<i>Trachyspermum ammi</i>	Ajamoja	Ayamōdakam	fruit	12 gm
<i>Piper longum</i>	Pippali	Tippali	fruit	16 gm
<i>Zingiber officinale</i>	Śuṅthī	Cukku	rhizome	20 gm
<i>Terminalia chebula</i>	Harītaki	Kaṭukka	fruit rind	60 gm

TABLE 2
TLC pattern of the ingredients in Vaiśvānaracūrṇam

Name of ingredient	Solvent System	Alcohol ext.of single drugs	Alcohol ext. of Cūrṇam	Alcohol ext. omitting single drug
<i>Cuminum cyminum</i>	Cyclohexane:Alcohol 8:2	65	65	-
	Benzene:Ethyl Acetate 9:1	66	66	-
<i>Trachyspermum ammi</i>	Cyclohexane:Ethyl Acetate 9:1	75	75	-
	Cyclohexane:Acetone 9:1	45	45	-
<i>Piper longum</i>	Benzene:Ethyl Acetate 9:1	33	33	-
	Cyclohexane:Acetone 9:1	23	23	-
<i>Zingiber officinale</i>	Per ether:Acetone 8:2	40	40	-
	Cyclohexane:Ethyl Acetate 7:3	53	53	-
<i>Terminalia chebula</i>	Cyclohexane:Alcohol			
	Chloroform 45:5:5	29	29	-
	Benzene:Ethyl Acetate 6:4 (TLC plate impregnated with 5 N H ₂ C ₂ O ₄)	96	96	-

TABLE 3
Analytical values of single drugs in Vaiśvānaracūrṇam

Parameter	<i>C. cyminum</i>	<i>T. ammi</i>	<i>P. longum</i>	<i>Z. officinale</i>	<i>T. chebula</i>
Foreign matter	Nil	Nil	Nil	Nil	Nil
Moisture content	8.7%	9.3%	10.2%	10.4%	13.5%
Volatile oil content	3%	3%	1%	9%	1%
Total ash	7.1%	9.6%	5.1%	8.4%	2.14%
Acid insoluble ash	0.58%	2.8%	1.2%	2.2%	0.43%
Water insoluble ash	4.4%	6.7%	2.3%	6.04%	1.3%
Sugar content total	3.6%	5.3%	1.2%	4.3%	4.9%
Reducing sugar	1.7%	4.2%	0.66%	1.5%	0.65%
Fibre content	28.5%	11.4%	8.6%	8.3%	14.5%
Water soluble extractives	22%	21.8%	10%	14.8%	60.5%

TABLE 4
Percentage and nature of extractives of single drugs in Vaiśvānaracūrṇam (Successive extraction)

Solvent	<i>C. cyminum</i>		<i>T. ammi</i>		<i>P. longum</i>		<i>Z. officinale</i>		<i>T. chebula</i>	
Pet ether	1.9%	S	7.5%	SP	3.9%	SA	2.8%	S	0.34%	S
Cyclohexane	2.0%	S	0.4%	SP	0.36%	SA	0.45%	S	0.15%	S
Acetone	1.45%	S	1.87%	SP	1.7%	SA	2.1%	AS	4.5%	SP
Alcohol	4.2%	S	1.9%	SP	2.1%	SA	1.06%	SPA	12.2%	SAP

S - Steroid, *SP* - Steroid Phenol, *SA* - Steroid Alkaoid, *AS* - Alkaloid Steroid, *SPA* - Steroid Phenol Alkaloid, *SAP* - Steroid Alkaloid Phenol

moisture content of a drug will be within a particular range. The same is applicable for volatile oil; the volatile oil of a drug taken at a particular season will always be within a particular range though some seasonal and regional variation may be observed. Similarly the value of ash content gives an account of the purity of the drug. If inorganic impurities like sand are present, the total value of ash content will be very high; the sugar content of an immature or spurious drug will be very low; fibre content also varies considerably. Successive extracts gives an idea of the specific phytochemical constituents of the drug.

TABLE 5
Analytical value of Rock salt

Colour	:	Light pink
Odour	:	No characteristic oldour
Taste	:	Salty
Acid Radical	:	Cl, SO ₄
Basic Radical	:	Ca, Mg, K, Na
Solubility in 100 ml water	:	2.4

The main part of the standardisation of the formulation consists of the detection of the ingredients used into it. Since the analytical values of single drugs give only the purity of the drugs and not the finished product, the TLC study gives an idea whether all the drugs are used in the formulation or not. More than one drug used in a formulation may have the active constituents. TLC study is mainly concerned with the detection of the constituents present in the finished product.

Two solvent systems had developed for each drug. R_f values of each drug in the corresponding solvent systems are the characteristic of that drug and can be considered as a fingerprint standard for detection of the single drug in the finished product.

The formulation was also prepared for comparative study omitting each single drug. For example, it was prepared using six single drugs, and the TLC detection of ayamōdakam in the formulation was carried out by using the powder prepared without ayamōdakam.

CLINICAL METHODS - AN AYURVEDIC APPROACH

M.S. Kamath*

Abstract: Diagnosis is definitely an art in terms of the more subtle and precise information that can be acquired. In ayurveda diagnosis is primarily concerned with the understanding of the three humors i.e. vāta, pitta and kapha, and their equilibrium and disequilibrium. This paper briefly discusses various clinical methods described in ayurveda.

Ayurvedic clinical method is a process basically aimed at individual health assessments and diagnosis; knowing history of the disease and physical examination does this. The person is interviewed at a serene, quiet and peaceful consultation room. This helps develop a better patient-doctor relationship. The techniques often used are 1) questioning (praśna), 2) seeing directly the body and parts (darśana) and 3) by touching (sparśana).

These interrogations, observation and palpation is then used directly to arrive at proper diagnosis, by employing four means of access to the knowledge i.e. pratyakṣa (cognitive sensory knowledge), anumāna (inference), yukti (judgment) and āptopadeśa (past experience, research or textual evidence).

Before the inroads of technology in the field of medicine, the patient-doctor relation and their information was the only method, and was sufficient to make proper diagnosis, decision-

making, etc. In the present hi-tech scenario, the traditional ayurvedic consultation and examination appears to be outdated. However, the point to be highlighted here is that in ayurveda, no technology is necessary for diagnosis, or it is not available yet. Properly used five senses and appropriate inferential and judgment skills of the physician will help him to achieve the goal.

The diagnosis in ayurveda depends primarily on prakṛti (nature, individual normality) and vikṛti i.e. imbalances; these imbalances are essentially of that of doṣas. In the cases of fully established diseases, the imbalances related to dhātus (tissues) and malas (waste materials) also are to be considered. This is achieved through what ayurveda calls as parīkṣa (examination). There are three aspects of this examination: 1) assessing the quality and quantity of an individual's life and lifespan, 2) assessing the morbidity related to bodily

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elements (doṣa) in terms of its quality and quantity and 3) assessing the strength, resistance and immunity of the person. These 3-fold goals are achieved by a 2-fold approach i.e. 1) examination of the patient (rogīparīkṣa) and 2) examination of the disease (rogaparīkṣa).

Rogīparīkṣa

Ayurveda aims at the examination of the patient himself as well as the disease that is incidental upon him. According to Caraka, the patient is the kārya-deśa or site for the administration of therapies. It is done by interrogation, by physical examination and by touching.

First, the normal factors associated with the patient need to be assessed which include:

1. Prakṛti (psycho-somatic constitution of person)
2. Satva (mental/personality traits)
3. Sāra (excellence of tissues or nutritional status)
4. Samhanana (build)
5. Pramāṇa (height, weight, biometry or anthropometrical measurements)
6. Sātmya (homologation, habituation, intolerance, allergy, etc.)
7. Āhāraśakti (digestive capacity)
8. Vyāyāmaśakti (exercise tolerance)
9. Vaya: (age/stage of life)
10. Deśa (place of birth, learning and disease)

In ayurveda, all the above are collectively called as daśavidhparīkṣa, the ten-fold examination. The interrogation and physical examination of the patient will help us to have various information such as the past history of illness, personal history, family history and in the case of females menstrual and obstetric history, etc.

The second aspect of examination is assessment of morbidity of doṣas, dhātus/upadhātus and malas - collectively known as vikṛti. This is done by aṣṭavidhparīkṣa, the eight-fold examination of ayurveda. They are:

1. Nāḍi (pulse)
2. Mūtra (urine)
3. Mala (faecal matter)
4. Jihva (tongue)
5. Śabda (voice and speech of the patient)
6. Sparśa (touch, skin and tactile sense)
7. Dṛk (eyes and vision)
8. Ākṛti (general appearance)

The above 8 aspects are listed as described in the ancient literature; however, the following are also to be included wherever needed: śukra (semen), ārtava (menstrual blood), stanya (breast milk), sveda (sweat), kapha (sputum), nakha (nails), keśa (hair), lālāsṛāva (saliva) and rakta (blood).

Our body and its waste products show a lot of information about the state of balance/ imbalance of the doṣas. The imbalance of doṣas can be assessed by careful examination of these elements.

Colour

In ayurveda each of the three humors is associated with a colour. Vāta is associated with brown or black; pitta with yellow, green or red, and kapha is associated with pale or white colour. These colours are helpful to distinguish which dōṣa is in excess. The changes of colour can be seen on tongue, in the stool, urine, skin and phlegm as well.

Pulse examination

In any of the three positions i.e. first, middle or last - vāta, pitta or kapha, a vāta-pulse is felt as very rapid, shallow and irregular; a pitta-

pulse is felt as strong and regular, and a kapha-pulse is felt slow, deep and weak (Fig. 1&2).

If a vāta-pulse i.e. fast and irregular, is in any other position than the first position i.e. vāta position, then the vāta is inferred to be imbalanced. If the pitta-pulse i.e. strong and regular, is in any other position than the middle position i.e. pitta position, then the pitta is imbalanced. The kapha is supposed to be imbalanced when the kapha-pulse i.e. slow and deep, is in any other position than the last position i.e. kapha position.

Increase in the predominance of vāta makes pulse still faster in the vāta point; decreased vāta makes it slower. Increased pitta shows stronger pulse in pitta point and decrease makes

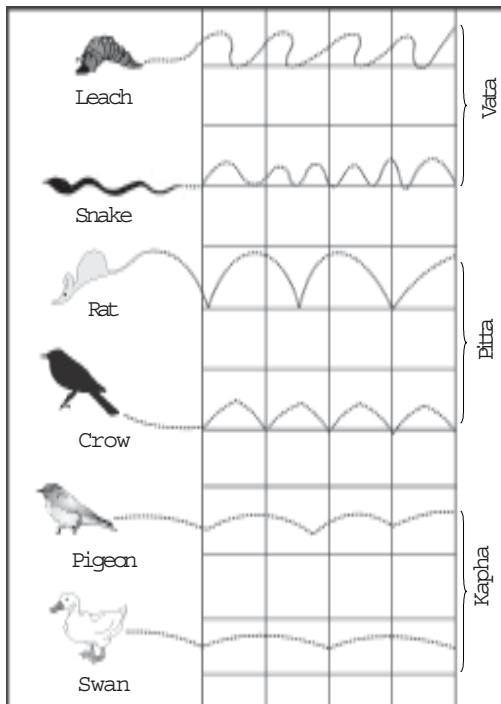


Fig 1

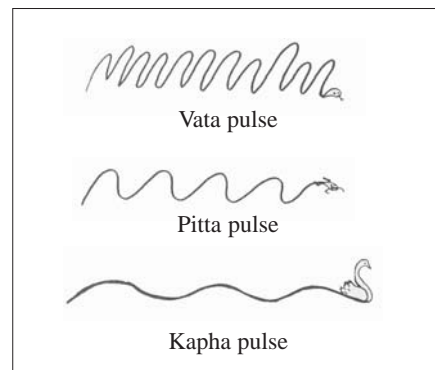


Fig 2

it weak in its point. Increase in kapha makes pulse stronger than usual in kapha point; whereas it is very slow and deep in decreased state.

Urine examination

The urine should be clear without much foam. Temporary signs due to intake of certain food can be disregarded. Eating asparagus, cabbage, cauliflower and garlic can give a strong smell. Abnormal observations of the urine are: muddy thick, dull-coloured; scanty, reddish, dark yellow, strong odorous and whitish foamy.

Stool examination

The stool should be neither too hard nor too soft (like the consistency of a ripe banana). It should float rather than sink in water and should not have a foul odour. One should be able to pass faeces once or twice per day without straining. Abnormal signs to be observed are: hard/dry stool, grey or blackish stool, greenish liquid stool, whitish sticky stool and mucus in stool.

Tongue examination

Tongue is the mirror to observe what is going on inside the stomach and body. Examination of tongue is to be very subtle. In ayurveda,

cleaning of tongue in the morning is an important daily routine. The shape and colour of the tongue also show the basic constitution of doṣas. A thin, trembling, pale tongue shows vāta constitution, whereas a medium, reddish tongue indicates pitta constitution, and a thick, roundish, pale and white tongue indicates kapha predominance. Normally the colour of tongue should be pink.

For practical purpose, the whole tongue is divided into three portions: the rear part - vāta, the middle part - pitta and the front part for kapha. Mostly any abnormality evident on the parts of the tongue such as lumps, depression, growth, build up of wastes, etc. directly indicates imbalance of the respective doṣa.

A healthy tongue should be pink in colour, clear and have lustre. Examine the actual colour and texture of the tongue to see if any of the following signs: dry; furrowed tongue; cracks in tongue; bluish, brownish, blackish, reddish and yellow-green tongue; burning tongue; painful bristles on tongue; white coating, and mucus on tongue.

Skin examination

A healthy skin is smooth with uniform temperature over the body. The abnormal changes of the skin are: low skin temperature; rough, dry, hot skin; cold hands and feet; hot hands and feet; cold, oily skin;

Eyes examination

Any abnormality on the eyes is to be observed; for example: rust coloured, smokey eyes; dull eye movements; drooping upper eyelid; pink or red, yellowish eyes; burning eyes.

Fingernail examination

Healthy fingernails are smooth and well shaped. Longitudinal striations in nails, bitten nails,

bump at end of nail, parrot beak at end of nail, etc. are some of the abnormalities noted.

Examination of perspiration

Perspiration should be colour and odour free. There may be temporary changes in smells due to the food ingested. The probable abnormalities observed are: excessive perspiration, mal-odorous perspiration and perspiration in cool weather

Lips examination

Dry, rough lips, inflammatory patches on the lips are some of the common abnormal signs to be examined.

All these examinations are to be done in a particular way and at particular time. The pulse (nāḍi) examination should be done early in the morning, before taking any food. This gives the prakṛti-indicating pulse. Then it can be checked at different times for doṣic features/ imbalances. The radial pulse below the thumb (right hand for males, left hand for females) should be examined using three fingers of the examiner (second, middle and ring finger). Both the patient and the examiner should be seated comfortably. Pulse should be studied for at least one minute.

For urine examination urine must be collected in the morning, in a clear container. Midstream should be collected. Ayurveda refers to a special examination called tailabindu parīkṣa (oil-drop test), where a drop of oil of tila (*Sesamum indicum*) is added to the urine and its behaviour is studied, which is supposed to give information on doṣa imbalance as well as prognosis of the disease. However, this is not practiced now-a-days by the ayurvedic practitioners. References to a similar test for breast milk are also available in ayurveda.

Influenced by modern clinical methods, authors like K.R.Srikantha Murthy have been attempted to correlate various śrotases of ayurveda with some systems of the body as follows:

1. Prāṇavahasrotas - Respiratory system
2. Annavahasrotas - Digestive system
3. Udakavahasrotas - Body fluids system
4. Rasavahasrotas - Cardiovascular
5. Raktavahasrotas - Haemopoietic system
6. Māmsavahasrotas - Muscular system
7. Medovahasrotas - Adipose system
8. Asthivahasrotas - Osseous system
9. Majjavahasrotas - Myeloid system
10. Śukravahasrotas - Reproductive system
11. Purīṣavahasrotas - Faeces system
12. Mutravahasrotas - Urinary system
13. Svedavahasrotas - Sweat system
14. Manovahasrotas - Nervous system

There are invariably some problems with these correlations as some of the systems referred to here are not compatible with the modern systems' view of the human body. More over it is not an ayurvedic philosophy to view human body in parts, organs and systems, at least for the purpose of diagnosis and management of the diseases.

The next method is rogaparīkṣa (examination of the disease). Here, the following five factors are to be taken into account:

- Nidāna - Causative factor of the disease - aetiology
- Pūrvarūpam - Prodromal symptoms
- Rūpam - Signs and symptoms
- Upaśayam - Aggravating/alleviating factors
- Samprāpti - Pathogenesis

Ayurvedic classics like Carakasamhita, Mādhavanidānam, etc. have elaborately described the above factors in each disease.

Diagnosis in ayurveda is based on direct observation of the body and personality of a patient. Traditionally, a student should learn and acquire this talent under gurukula system i.e. he is required to live with the teacher and learn the system. Diagnosis is definitely an art in terms of the more subtle information that can be acquired. However, it needs to be structured scientifically also, in other words, an expertise and skill is to be developed to put all information in right way and in right meaning.

Precisely, diagnosis in ayurveda is primarily concerned with the understanding of the three humors. Thus, all the diagnostic methods review either the harmony or disharmony of the doṣas in terms of excess or depletion. Therefore, each person is seen as an individual, not as an average statistic. The constitution and mental traits of an individual that forms the unique psychosomatic being, is what ayurveda recognizes before making any diagnosis.

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ROLE OF VIRECANA NASYA IN THE MANAGEMENT OF JAUNDICE - A CASE STUDY

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Abstract: Hepatitis A infection is common and its relapse is also not a rare incident. A case with total serum bilirubin reaching as high as 34 mg/dl, managed successfully by avapīḍaka nasya with the svarasa of *Luffa cylindrica* is reported here. It is the need of the hour to popularise such practices among young generation of ayurvedic physicians.

Introduction

Jaundice, presented as a symptom of Hepatitis A infection, is an endemic problem in various parts of the country. In spite of rich resources, major share of jaundice cases are attended by either modern practitioners or household practices. Many such cases find an automatic remission by supportive management in allopathic system, but some still fail to become normal. In household practices the usual mode of management is by offering a single remedy for all cases of jaundice indiscriminate of its clinical details. This kind of traditional knowledge is of immense utility in the event of jaundice epidemic, where large numbers of clinical and sub-clinical cases are present and the medical assistance may not reach each and every case. A third group of cases gets the classical management of kāmīla, which is a judiciously selected mixture of various

therapies, including the earlier two. A supportive management is always an essential practice in any such pitta disease. It is seen in clinical practice that intravenous rehydration is often supportive to the ayurvedic treatments also, in kāmīla. Utilizing the laboratory parameters for monitoring the progress is an essential part of management in this group. The relapse of illness even after a medical care is not uncommon. This could be due to various reasons such as apathyas, incomplete purification procedures, etc.

The classical treatment approaches are always addressing the specific conditions of the patient in each step of the treatment. The theme of kāmīla treatment is to expel the kutsitamālārūpa pitta by every appropriate means. This also includes nasya, in appropriate clinical conditions. The practice of nasya for kāmīla roga has become very rare and limited to folk-

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lore practices in very few localities. In the conventional practice, nasya performed in any disease, is usually not in anticipation of an instant generalized systemic effect. In contrast, nasya performed in kāmala, exhibits more than a local effect. This paper reports an experience of nasya treatment in kāmala.

The case and course of illness

A 23-year-old student from a seaside village of central Kerala was presented on March 2005, diagnosed as jaundice caused by Hepatitis A virus infection. There was an epidemic of hepatitis A in the season around his locality. This patient developed the symptoms of Hepatitis while at Mysore, two days after a 400 km bike-journey from his home. Initially he was given symptomatic treatment from the local practitioner at Mysore. His initial symptoms were nausea, malaise, fever, and mild yellow color in sclera, urine, etc. He was then send home for complete rest and further expert care. On the 7th day of illness, his total bilirubin was 8.2 mg/dl, direct bilirubin 4.4 mg/dl. His clinical condition improved and laboratory values went back to near normal levels in about two weeks. Another two weeks later he was again taken to a Gastroenterologist complaining of itching all over the body and deepened yellow color; stool was pale and he had a little tiredness also.

His USG was normal except for a mild hepatomegaly. Despite a good hospital care, his bilirubin levels were steadily rising, and when it reached at 30 mg/dl, he got discharged and opted the classical ayurvedic management. After 10 days of conventional treatment with Paṭolakaṭurohiṇyādikaśāyam, Avipatticūrṇam, Ārukālādi oil, etc, the bilirubin level showed 34 mg/dl. By this time he was showing

complaints of insomnia, prominent itching and heaviness in head. He was then admitted in Vaidyaratnam Ayurveda Collage Hospital. In addition to the ayurvedic medicines, which he was already taking, kṣīradhāra for 14 days was performed in the evening from the same day after the rēcana nasya.

Material for nasya

Mahākośātaki is a large climber with 5 angled glabrous stems, having large cylindrical fruits. It is found throughout India, in wastelands along the costal areas. It is known as khiyā tōri in Hindi, kāṭṭupīccil in Malayalam, sponge gourd in English and *Luffa cylindrica* (Linn.) M. Roem. in Latin. Its fruits are diuretic, laxative, expectorant and tonic. It is useful in pitta, spleenopathy, syphilis, tumors, hemorrhoids; and the seeds are emetic and cathartic. Mahākośātaki is tikta, kaśāya and kaṭu in rasa; laghu and rūkṣa guṇa, śīta-vīrya and kaṭuvipāka. Its seeds are powdered with pepper and done dhmananasya in jaundice in order to expel out the vitiated pitta located in the head region¹.

Method of administration

At 9 in the morning, the tender mahākośātaki phala was ground in breast milk; the paste squeezed through a closely woven cloth and the filtrate used for the avapīḍaka nasya. The dose was 2½ ml of filtrate each time (for 3 times) in each nostril. Massaging the head and neck were done with palms till the patient recognize warmth in the area. The first dose, which was instilled in both nostrils, made a mild irritation in the occipital region, and after 5 minutes the patient was spitting copious thick phlegm. In around 10 minutes his spit was yellow colored. He continued spitting for another 30 minutes till when the second dose

was instilled. The irritation by this was higher, and after few minutes mucose started flowing out again. The spit was thick and deep yellow resembling the bile juice in color, consistency and odour. After half an hour when the secretions went scanty, the third dose was instilled. The spit and the nasal discharge closely resemble the bile in physical appearance, odour, etc. Nearly 1500 ml of spit and discharge was expelled till evening. Around 4.00 pm, after mūrdhataila with Ārukālādi oil, the kṣīradhāra was performed on the head for 45 minutes. The nasal discharge was continuing mildly till 9.00 pm, and the patient felt light-headedness, and there was reduced itching and a mild reduction in the color of the sclera. The patient felt highly disturbing sense of dryness

in the nasal and throat areas till next day evening. Three days after nasya, when investigated, the bilirubin found came down to 8.5 mg/dl, the direct being only 3.5 mg/dl. He was sleeping well and clinically well improved with no fatigue. The sclera was yellow only in the mid-noon and midnight hours.

Nasya was performed again on the fourth day after the first administration, which brought the bilirubin levels to 2.8 mg/dl. The color of stool became yellow by this time. Avapīḍaka nasya was stopped with these two administrations. The patient was discharged from the hospital on completion of 14 days kṣīradhāra. While discharging, he was advised to take Vaśāguḷū-cyādi kaṣāyam, Tiktakaghṛtam, Drākṣādi-leham, Avipatticūrṇam, etc. Along with this,

TABLE 1
The sequence of laboratory results in the patient

Particulars	DATE (2005)									
	25 - 1	31 - 1	17 - 2	22 - 2	01 - 3	10 - 3	15 - 3	21 - 3	24 - 3	24 - 4
Hb%	16.4							11.5	11.5	
ESR mm/hr	5									
Total Bilirubin mg/dl	8.2	12.7	24.3	27.5	30.2	34.5	8.8	4.4	2.8	1.8
Direct Bilirubin mg/dl	4.4	8.3	13.3	12.5	15.8	31.2	7.2	3.8	2.2	
Indirect Bilirubin mg/dl						3.3				
S. Albumin	3.8									
S. Globulin	3									
Total protein	6.8	6.9	7.6							
Alkaline phosphatase	224 u/l		231u/l							
S.G.O.T.	1580					1440				
S.G.P.T.	2834					1980				
Prothrombin time	18	15	13	15	14	18				

dronapuṣpī (*Lucas aspera*) svarasa was advised to use for doing aścyotanam, which helps to relieve the yellowish colour of the eyes faster. After 6 days of the new prescription, the patient started complaint of itching again; the total bilirubin was found raised to 8 mg/dl, direct bilirubin 5.2 mg%, and HB 12 mg/dl. This time, assuming kaphavṛdhi due to the use of ghee, Tiktakaghṛtam was excluded from the prescription. Six days after the revised prescription, when the test was repeated, the total bilirubin went down to 2.6 mg/dl and all clinical complaints found settled including the color of sclera.

Discussion

In jaundice, intra-hepatic cholestasis resulting in a relapse is not uncommon. This will lead to complications and a prolonged hospital stay. Avapīḍaka nasya as a unique tool for a quick downfall in bilirubin and preventing the patient from complications like encephalopathy, etc. In conventional practice, usage of breast milk to grind the medicine helps in reducing the irritation during nasyakarma. This can be an effective tool to reduce bilirubin levels in all kinds of kāmala. It may be postulated that the abundant mucosal infiltrates of bile pigments are released through the nasal discharge. This in turn acts as an escape valve for bilirubin leading to readjustments in levels of bilirubin in systemic circulation. A biochemical analysis

of nasal secretion can possibly reveal the mode of action, which results reduction in serum bilirubin levels. When reduction of bilirubin is the primary concern, and if any symptoms that shows the involvement of doṣa like heaviness in head, changes in the level of consciousness, etc., are presented, then nasya should be included routinely in the treatment. Kṣīradhāra, was basically aimed at relieving insomnia and to act as a stambhana therapy. However, it is necessary only if the condition of the patient warrant the same. Other measures to cool the body, like having a very liberal bath, etc., are a part of the usual prescription in kāmālā roga. In this case the internal medicines used were very much conventional. The unfavorable effect of ghṛta used shows that some other forms of snehana is ideal for the purpose of bala at the end of the treatment.

Avapīḍaka nasya was a routine practice in the management of jaundice in different parts of the country, which in course of time went neglected by younger generation of ayurvedic practitioners. It is the need of the time to make aware of this effectual application of nasya because of its rarity in clinical practice in the present generation.

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CONSUMER DEMAND FOR TRADITIONAL MEDICINE IN THE CHENNAI RURAL

K.T. Jayakrishnan and Ashok Kumar Panda*

Abstract: Ayurveda, Siddha and Unani are the front-runner traditional systems of medicine in our country. Despite the inclination and publicity towards the traditional systems of medicine, the traditional medical college hospital, dispensaries and clinics both in private and government sector are running with shortage of patients. This paper evaluates the acceptance and attitudes of the people towards traditional medicine based on a survey conducted in the Chennai rural.

Introduction

The harmful side effects of modern medicines, so also its ineffectiveness against many chronic diseases have resulted in resurgence of traditional medicines¹. There are many traditional health care practices developed over many generations and all are stressing on the healthy way of living in harmony with the nature². 60% of the world population prefers traditional medicines. These are used not only for primary health care or just in rural areas in developing countries, but also in developed countries where modern medicine are predominantly used³. Ayurveda, Siddha and Unani are the front-runner traditional practices in India⁴. Despite strong inclination and publicity towards the traditional medicine, the traditional medical college hospital, dispensaries and clinics both in private and

government sector are running with shortage of patients^{5,6}. To overcome the above problem, there is a need to know the consumer demand and also to make aware the public about the curative and preventive aspects of the traditional medicines.

It was on this background a survey was conducted focused on the acceptance and attitude of the people towards traditional systems of medicine. It also provided the clues and information for resource allocation and utilization of the systems. This sort of study has much significance as far as traditional healers, practitioners, faculty members, pharmaceuticals, NGOs and health policy makers are concerned, particularly, when the people frequently switch over from one system to another system of medicine i.e., *medical pluralism*.

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This study was conducted by the Department of Kayachikitsa and Community Medicine, Sri Jayendra Saraswathi Ayurveda College, Nazarethpet, Chennai in between July 2002 to August 2003.

Materials and methods

The study area was the Chennai rural where we had covered Poonamallee Block (25 km from central railway station) in the northwest direction. Poonamallee Block consists of two town panchayats and twenty-eight village panchayats (64 Villages)⁹. It had 4.6 lakhs population in 2001, and rural panchayat population 1,96,876 (42%) of total population. The adult literary rate is nearly 60%. It has two Public Health Centre, one Ayurvedic College Hospital, one Dispensary and one Institute of Public Health. The study was conducted in Nazarethpet and Agaramel village panchayat of Poonamallee town.

A modular geographic system (GIS) chart was modified to cover settlement information and demographic data; and residential areas were also included in this study¹⁰. A group of physicians, internees and final year students of S.J.S. Ayurveda College, Chennai covered street-to-street and door-to-door of every village/town of the said panchayat. Questionnaires for the surveys were prepared centrally in English and were translated to Tamil for the interview and collection of data. The data were collected through interviewing the family members using open-ended interviews and guided dialogue technique. The questions were pertaining to demographic information, choice of traditional medicine, reasons for acceptance/rejection of the system, way of access to the system, name of the traditional pharma, suggestion to improve the system, etc. Finally, all

the data were compiled together and summary report was calculated in percentage.

Results

The survey team visited total 2500 houses covering a population of 16,000; of these, only 30 houses (0.01%) were not co-operative to the study due to various reasons. It was found that only 21% of studied population was interested in traditional medicine (nāṭṭumarunnu), and 70% people using ayurvedic products either cosmetics, toothpaste or self-medication and medicine prescribed by allopathic doctors. Among those interested in traditional medicine, 32% of the population was inclined towards siddha system, 29% towards ayurveda, 15% towards yoga and only 1% towards Naturopathy; no one knows about Unani system and 29% people didn't know about any system of traditional medicine. It was found that only 20% preferred traditional medicine as the first choice for chronic diseases; 80% preferred traditional medicine as an alternative medicine or in diseases that were not cured or responded by allopathic medicine. Among those who interested traditional medicines, 60% preferred it as it cures the disease permanently, whereas 40% believed that

TABLE 1

Acceptance of various traditional systems

Traditional Systems of medicine	%
Ayurveda	29
Siddha	32
Yoga	15
Naturopathy	01
Unani	00
Unaware of any traditional system	23

traditional medicine has no side effects. 26% preferred traditional medicine for joint problems, 24% for skin diseases, 20% for neurological problem, 9% for jaundice, 6% for gynecological problems, 7% for digestive problems, 3% for pediatrics problems and 2% for various psychological problems.

Among the disliked group of traditional medicine, 28% answered that they are not habituated with the system, 12% disliked it due to unpalatable medicines, 13% showed negative

attitude due to slow recovery. Only 5% disliked it for diet restriction; 13% for non available of good physicians and drugs; 11% due to high cost and 15% were scared to use traditional medicine with modern medicine i.e. drug interaction.

An attempt was made to know the way of public access to the traditional system. It was interesting to note that electronic media and newspaper had serious impact on the mentality of people. People's attitude towards the pharma industry was also studied. It was found that 16% people prefer medicines of Arya Vaidya Sala, Kottakkal, 7% IMCOPS, Chennai, 8% Himalaya Drug Company, Bangalore, 6% Dabur India Limited and 5% Arya Vaidya Pharmacy, Coimbatore. Nobody knew about the Baidyanath Pharma, and 46% people prefer to take medicine prepared or prescribed by the doctor himself.

Suggestions collected from various people were also taken into consideration. 58% opined that government should protect the exploitation of traditional medicines; 30% suggested necessary improvement in the R&D activities in various

TABLE 2

Preference given for traditional medicine for the management of various diseases

Diseases	%
Joint Problems (Arthritis)	26
Skin diseases & STD	24
Neurological problems	20
Jaundice	9
Digestive problem	7
Gynecological problems	6
Pediatric & Psychological	3 & 2
Others	3

TABLE 3

Reasons for not seeking traditional medicines

Reasons	%
Not habituated	28
Slow recovery	13
Unpalatable	12
High cost	11
Drug interaction	15
Unavailability of good vaidyas and drugs	13
Diet restriction	5
Others	3

TABLE 4

Attitude towards the Ayurvedic Institutions

Various ayurvedic pharmaceuticals	%
Arya Vaidya Sala, Kottakal	16
IMCO PS, Chennai	7
Himalaya Drug Company Bangalore	8
Dabur India Limited, New Delhi	6
Arya Vaidya Pharmacy, Coimbatore	5
Baidyanath Pharma, Patna	0
Prepared or prescribed by doctors	46
Others	12

field; and 12% suggested that traditional medicine is a hidden treasure and not to do anything with business motivation.

Discussion

Compared to the global data, the acceptance of traditional medicine as a healing remedy was poor in the studied area. The attitude towards herbal cosmetics has improvement may be due to the publicity in media. Most of the people of Chennai rural knew traditional medicine (nāṭṭumarunnu) and allopathic medicine (English marunnu). Though the government gives good encouragement to Siddha system of medicine, people are more interested in ayurvedic system of medicine. The specialization centers with modern investigative tool should be established in the prime area of traditional medicine, and we have to sensitize the public, for most of the people are not aware about this system. The business attitude of all massage centers should be discouraged.

The theory of pañcakarma therapy should be put forth to the public for the better understanding of the system. The existing health policies have to be revised and more emphasis should be given to traditional medicine. As this survey was on a small population, the result may not reflect on the over all consumer demand of the traditional medicine in our country. Similar studies are to be carried out throughout India to know the public attitude towards our traditional medicine.

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EXCERPTS FROM CIKITSĀMAÑJARI - LI

P. Unnikrishnan*

Abstract: Treatment of vāta disorders continues. Here, famous vāta-relieving preparations like Dhānvantaram, Ciñcādi, Vātāśanī, Pañcāmḷam, etc. are explained.

Balātailam - III

Kaṣāya prepared from the roots of balā (*Sida rhombifolia* ssp. *retusa*), and daśmūla each - 6 parts, and

Yava *Hordeum vulgare*

Kola *Ziziphus mauritiana*

Kulatha *Macrotyloma uniflorum*

Milk each 1 part

Prepare the formulation with the above as liquid components, taila (sesame oil) - 14 parts as lipid component, and the fine powders of the following as solid component. This preparation relieves all types of rheumatic disorders; it is good for post natal care and for the neonate, relieves injury to bones and muscles, provides nutrition to the debilitated, relives fever, flatulence, diseases affecting the brain and spinal cord, cures insanity caused by increased vāta, dysurea and inguinal hernia.

Dvimedā *Polygonatum cirrhifolium*
Polygonatum verticillatum

Dāru *Cedrus deodara*

Mañjiṣṭhā *Rubia cordifolia*

Kākoḷī *Fritillaria roylei*

Kṣīrakākoḷī *Lilium polyphyllum*

Candana

Śāribā

Kuṣṭha

Takara

Jīvaka

Ṛṣabhaka

Saindhava

Kālānusārī

Śaileya

Vacā

Agaru

Punaṛṇava

Aśvagandhā

Varī

Kṣīraśuklā

Yaṣṭī

Abhayā

Āmalaka

Vibhītaka

Śatāhvā

Sūpyaparṇī

Eli

Tvak

Paṭṭa

This is very potent formulation promoted by

Santalum album

Hemidesmus indicus

Saussurea lappa

Valeriana jatamansi

Malaxis acuminata

Malaxis muscifera

Rock salt

Trigonella foenum-graecum

Parmelia perlata

Acorus calamus

Aquilaria agallocha

Boerhaavia diffusa

Withania somnifera

Asparagus racemosus

Ipomoea mauritiana

Glycyrrhiza glabra

Terminalia chebula

Emblica officinalis

Terminalia bellirica

Anethum graveolens

Vigna pilosa, *Vigna radiata*
var. *sublobata*

Elettaria cardamomum

Cinnamomum verum

Cinnamomum tamala

*"Sivam" Vaidyaratnam Road, Nayadippara, Kottakkal-676 503

sage Dhanvantari that is capable of relieving all diseases affecting the genitals of the female. This is also known as Dhānvantaram tailam.

A variation from the above, prepared with twelve nazhi¹ of sesame oil, kuruntotti (*Sida rhombifolia* ssp. *retusa*) 36 pala² and yava (*Hordeum vulgare*), kola, (*Ziziphus jujuba*), kulatha (*Macrotyloma uniflorum*) and daśmūla - each one pala, is also effective depending upon the stage of the disease and condition of the patient.

Balātailam - IV

Sesame oil medicated with the kaṣāya of balā, koraṇḍa (*Nilgiranthus ciliatus*) and milk as liquid component, and drugs detailed in the kalka of Dhanvataram tailam as solid component, on consumption and irrigation relieves rheumatic diseases.

Ciñcādi taila

Medicated oil prepared from the expressed juices of ciñca (*Tamarindus indica*), āmaṇḍaka (*Ricinus communis*), sāriṇī (*Merremia tridentata* ssp. *tridentata*), varaṇaka (*Crataeva magna*), amlīka (*Solena amplexicaulis*), balā, (*Sida rhombifolia* ssp. *retusa*) āsphoṭakī (*Clitoria ternatea*), jaṁbīri (*Citrus lemon*), ravi (*Calotropis gigantia*), soma (*Sarcostemma acidum*), grṇjana (*Allium cepa*), curd and medicated kāṭi (sour gruel) as liquid component and fine powders of the following as solid component relieves eighty types of rheumatic diseases quickly.

Siddhārtha	<i>Brassica juncea</i>
Akhila	<i>Zingiber officinale</i>
Dāru	<i>Cedrus deodara</i>
Śigru	<i>Moringa oleifera</i>
Śatapušpa	<i>Anethum graveolens</i>
Rātri	<i>Curcuma longa</i>

Rāsna	<i>Alpinia galanga</i>
Paṭu	Rock salt

In the case of pain, half the quantity of kalka is to be replaced with the kalka of Piṇḍataila.

One prastha³ of sesame oil medicated with the expressed juice of śatāvāri (*Asparagus racemosus*), two prastha of milk and fine powders of the following as solid component (kalka), is effective in the hunch back, stunted growth, lame, and those who are confined to chair due to spinal lesions. This oil is capable of relieving those who are debilitated secondary to convulsive disorders, fracture cases and joint disorders. Those who suffer from wasting disorders of one of the upper or lower limbs and those who become unable to walk around due to wasting of one lower limb are benefited by the use of this medicated oil. This oil is capable of relieving bleeding disorders and very effective in rheumatic disorders. The oil should be processed in low fire.

Kalka:	
Śatapušpa	<i>Anethum graveolens</i>
Devadāru	<i>Cedrus deodara</i>
Māmsī	<i>Nardostachys grandiflora</i>
Śaileyakam	<i>Parmelia perlata</i>
Vacā	<i>Acorus calamus</i>
Mañjiṣṭhā	<i>Rubia cordifolia</i>
Añjanam	black antimony
Kuṣṭham	<i>Saussurea lappa</i>
Ela	<i>Elettaria cardamomum</i>
Aṁśumatī	<i>Desmodium gangeticum</i>
	<i>Pseudarthria viscida</i>
Turaṅgagandha	<i>Withania somnifera</i>
Kākoḷī	<i>Fritillaria roylei</i>
Medā	<i>Polygonatum cirrhifolium</i>
Mahāmedā	<i>Polygonatum verticillatum</i>
Punaṛṇava	<i>Boerhaavia diffusa</i>
	½ pala each

¹ 1 nazhi = 192 ml; ² 1 pala = 48 g; ³ 1 prastha = 768 g

Vātāsānītaila

Boil 100 pala of śātāvārī in one āḍhaka⁴ water and reduce to one fourth. Add fine powders of the following, each one kaṛṣa⁵, to it.

Śatapuṣpa	<i>Anethum graveolens</i>
Devadāru	<i>Cedrus deodara</i>
Māṁsī	<i>Nardostachys grandiflora</i>
Śaileyakam	<i>Parmelia perlata</i>
Vacā	<i>Acorus calamus</i>
Candanam	<i>Santalum album</i>
Tagaram	<i>Valeriana jatamansi</i>
Kuṣṭham	<i>Saussurea lappa</i>
Elā	<i>Elettaria cardamomum</i>
Amśumatī	<i>Desmodium gangeticum / Pseudarthria viscida</i>
Viḷaṅgataṇḍulam	<i>Embelia ribes</i>
Drākṣā	<i>Vitis vinifera</i>
Jīvaka	<i>Malaxis acuminata</i>
Ṛṣabhaka	<i>Malaxis muscifera</i>
Balāmūlam	<i>Sida rhombifolia</i> ssp. <i>retusa</i>
Varaṇakam	<i>Crataeva magna</i>
Karañjadvayam	<i>Pongamia pinnata</i> <i>Holoptelea integrifolia</i>

To the above, add four prastha of milk and one prastha of sesame oil and reduce the mixture to oil. Consumption of this oil after breakfast and supper relieves asthma and chronic cough. Intake of this oil is benefited to deaf and the lame also. This medicine arrests ageing and is capable of increasing duration of coitus. Debilitated individuals and those who are affected by joint lesions and fracture find this as a boon. Hernias of various origin, diabetes, urinary calculi, eczema, blisters and enlargement of spleen caused by deranged vāta are relived by this medication.

(The verse is incomplete)

Sesame oil medicated with the kaṣāya of balā as liquid component and fine powders of the

following as solid component relieves rheumatism affecting the whole body.

Devadāru	<i>Cedrus deodara</i>
Balā	<i>Sida rhombifolia</i> ssp. <i>retusa</i>
Rāsnā	<i>Alpinia galanga</i>
Māṁsī	<i>Nardostachys grandiflora</i>
Saṛṣapa	<i>Brassica juncea</i>
Nāgara	<i>Zingiber officinale</i>

Pañcāmḷataila

Expressed juice from pañcāmḷa (*Tamarindus indica*, *Solena amplexicaulis*, *Spondias pinnata*, *Hibiscus furcatus*, *Garcinia gummi-gutta*), curd and dhānyāmḷa (sour gruel) are used as liquid component in the preparation of medicated sesame oil to which fine powders of the following are to be added as solid component. This preparation also relives rheumatism affecting the entire body.

Śigru	<i>Moringa oleifera</i>
Saṛja	<i>Veteria indica</i>
Dāru	<i>Cedrus deodara</i>
Rāsnā	<i>Alpinia galanga</i>
Śātāhvā	<i>Anethum graveolens</i>
Paṭu	Rock salt
Mañjiṣṭhā	<i>Rubia cordifolia</i>
Śāribā	<i>Hemidesmus indicus</i>

Sesame oil or ghee medicated with the kaṣāya of the following as liquid component and fine powders of the same drugs as solid component relieves rheumatism quickly.

Koraṇḍa	<i>Nilgiranthus ciliatus</i>
Kuñjarabalā	<i>Sida spinosa</i>
Atibalā	<i>Sida rhombifolia</i>
Aśvagandhā	<i>Withania somnifera</i>
Rāsnā	<i>Alpinia galanga</i>
Punaṛṇava	<i>Boerhaavia diffusa</i>
Śātāvārī	<i>Asparagus racemosus</i>
Ketakī	<i>Pandanus odoratissimus</i>

⁴ 1 āḍhaka = 3.073 kg; ⁵ 1 kaṛṣa = 12 g

One prastha of sesame oil medicated with 2 palas of earthworm paste as solid component, expressed juice of *prāsāraṇī* (*Merremia tridentata* ssp. *tridentata*) and breast milk as liquid components is to be prepared in low fire. Consumption and nasya relieves stiff jaw, stiff neck and difficulty in speech due to paralysis of tongue.

A *kaṣāya* prepared from *puḷiyāñcu* (*Tamarindus indica*, *Solena amplexicaulis*, *Spondias pinnata*, *Hibiscus furcatus*, *Garcinia gummi-gutta*) can be used for irrigation; sesame oil medicated with them is also effective. Prepared medicines such as *Pañcasneha*, *Prāsāraṇītaila*, *Māṣataila* and *Sahacarāditaila* can be used depending upon the stage of the disease and condition of the patient. Increased *vāta* can be tackled by the application of *Triphalādi taila* on the head. This medicated oil with the addition of milk as liquid component is also good.

Medicated sesame oil prepared with the *kaṣāya* of *Balāguḷūcyādi* and milk as liquid component, and the *kalka* of *Triphalādi taila* as solid component is also effective.

Sesame oil medicated with the *kaṣāya* of *koraṇḍamūla* and milk as liquid components, and fine paste of earthworm and fine powder of *koraṇḍamūla* as solid components relieve eighty types of rheumatic diseases on consumption, external application, *nasya*, etc.

Body pain, neuritis and neuralgia will be present in rheumatic disorders caused by increased *pitta*. In such cases, irrigation of the head with cow's milk for seven days is the treatment. *Vidāryādi kaṣāya* is to be consumed for three *maṇḍalas**. Sesame oil medicated with the expressed juice of *Svāductuṣka* (cross ref. *Raktapittacikitsa*, *Aryavaidyān Vol VII, No. 1*)

can be used for irrigation of the head. Irrigation of the body for fourteen days with the mixture of oil and ghee is also effective. *Ṇavarakkizhi* for the next seven or twelve days will restore impaired health and rectify wasting. Milk is to be used in the evening. Increased *vāta* caused by excessive physical work and dryness of the body will be relieved to a great extent on consumption of *Vidāryādi ghr̥ta* or *Svāductuṣka*.

Kaṣāyas prepared with drugs of *daśmūla* or *ceṛupañcamūla* is effectual. Ghee medicated with *Svāductuṣka* is also good. *Kṣīrabalātaila* with lac as additional solid component with ¼ additional quantity of ghee can be used for external application. A variation of *Piṇḍataila* in which fine powders of *aratta* (*Alpinia galanga*) and *catakuppa* (*Anethum graveolens*) are also to be added as solid components; this can be applied locally. External application of *Balāguḷūcyādi* or *Balāśvagandhādi* oil is also good. All external applications are to be selected based on the constitution of the patient.

Sesame oil medicated with *varī vāri* [*kaṣāya* prepared from *varī* (*Asparagus racemosus*)] as liquid component and fine powders of the following as solid component relieves eighty types of diseases caused by *vāta* and forty types of diseases caused by *pitta* when used for external application, consumption and *nasya*. This medicine is also effective in female sub fertility.

Rāsnā	<i>Alpinia galanga</i>
Candana	<i>Santalum album</i>
Dāru	<i>Cedrus deodara</i>
Nāgara	<i>Zingiber officinale</i>
Rajanī	<i>Curcuma longa</i>
Mañjiṣṭhā	<i>Rubia cordifolia</i>
Yaṣṭī	<i>Glycyrrhiza glabra</i>
Utpala	<i>Kaempferia rotunda</i>
Drākṣā	<i>Vitis vinifera</i>

* 1 *maṇḍala* = 41 days

Gopasutā	<i>Hemidesmus indicus</i>
Balā	<i>Sida rhombifolia</i> ssp. <i>retusa</i>
Agaru	<i>Aquilaria agallocha</i>
Nata	<i>Valeriana jatamansi</i>
Spr̥kkā	<i>Schizachyrum exile</i>
Āmaya	<i>Saussurea lappa</i>
Māmsī	<i>Nardostachys grandiflora</i>
Am̐bu	<i>Plectranthus vettiveroides</i>
Misi	<i>Anethum graveolens</i>
Corakam	<i>Kaempferia galanga</i>
Madhukam	<i>Glycyrrhiza glabra</i>

Medicated sesame oil prepared from the expressed juice of the following as liquid component, and fine powders of the bhūnāga (earthworm) and sarjārasa (*Veteria indica*) as solid component on consumption, application over the body and if used for nasya relieves eighty types of rheumatic diseases.

Ñeṭṭāñeṭuṇa	<i>Physalis minima</i>
Hapuṣā	<i>Sphaeranthus indicus</i>
Indravalli	<i>Cardiospermum halicacabum</i>
Paṛvaḷḷi	<i>Ichnocarpus frutescens</i>
Jambīradaḷa	<i>Citrus lemon</i>
Tṛiyāma	<i>Curcuma longa</i>
Vṛkṣāmḷapatṛa	<i>Tamarindus indica</i>
Sāriṇī	<i>Merremia tridentata</i> ssp. <i>tridentata</i>

Dadhinīru- maṭṭi	Expressed juice from the sediment of curd
Dhānyāmḷa- maṭṭi	Expressed liquid from the sediment of dhānyāmḷa

Māṣataila

Boil one prastha of māṣa (*Vigna mungo*) with one āḍhaka of water and reduce to one-fourth. Add one prastha of sesame oil and milk, mix fine powders of the following, and reduce the contents to oil in low fire. This preparation on consumption, used for nasya and vasti, relieves paralysis, arḍita (facial palsy), otalgia, tinnitus,

cataract, tremor of the hands and head, viśvācī (paralysis of the arm and back) and apabāhuka (cervical palsy).

Jivanīya- pañcamūla	<i>Asparagus racemosus</i> <i>Coccinia grandis</i> <i>Holostemma ada-koedien</i> <i>Malaxis acuminata</i> <i>Malaxis muscifera</i>
Śatapuṣpa	<i>Anethum graveolens</i>
Saindhavam	Rock salt
Rāsnā	<i>Alpinia galanga</i>
Ātmaguptā	<i>Mucuna pruriens</i>
Cukku	<i>Zingiber officinale</i>
Kurumuḷaku	<i>Piper nigrum</i>
Tippali	<i>Piper longum</i>
Madhuka	<i>Glycyrrhiza glabra</i>
Balā	<i>Sida rhombifolia</i> ssp. <i>retusa</i>

Prasāraṇyādi taila I

Add one hundred pala of prasāraṇī (*Merremia tridentata* ssp. *tridentata*) to one droṇa* of water and reduce to one-fourth. An equal quantity of curd is to be added as liquid component and double the quantity of sesame oil as lipid component; add fine powders of the following as solid component and reduce the mixture to oil. External application of this oil relieves increased vāta.

Śuṇḍhī	<i>Zingiber officinale</i>	5 pala
Rāsnā	<i>Alpinia galanga</i>	
Prasāraṇī	<i>Merremia tridentata</i> ssp. <i>tridentata</i>	
Anala	<i>Plumbago indica</i>	
Madhuka	<i>Glycyrrhiza glabra</i>	
Sindhū- dbhava	Rock salt	
Grandhika	<i>Piper brachystachyum</i>	
Dvikṣāra	Sodium sulphate mixed with Sodium chloride Sodium bicarbonate (impure)	2 pala each

* 1 droṇa 12.288 ltr

Prasāraṇyādi taila II

Add one tula⁶ of kaṣāya prepared from prasāraṇī to one prastha each of milk and sesame oil; and add fine powders of the following as solid component and reduce the mixture to oil. This oil relieves rheumatic diseases.

Medā	<i>Polygonatum cirrhifolium</i>
Mahāmedā	<i>Polygonatum verticillatum</i>
Māmsī	<i>Nardostachys grandiflora</i>
Mañjiṣṭhā	<i>Rubia cordifolia</i>
Kuṣṭha	<i>Saussurea lappa</i>
Rāsnā	<i>Alpinia galanga</i>
Kucandana	<i>Santalum album</i> (substitute)
Jīvaka	<i>Malaxis acuminata</i>
Ṛṣabhaka	<i>Malaxis muscifera</i>
Kākoḷī	<i>Fritillaria roylei</i>
Kṣīrakākoḷī	<i>Lilium polyphyllum</i>
Śatāhvā	<i>Anethum graveolens</i>
Amaradāru	<i>Cedrus deodara</i>

Warm Māṣataila detailed above should be poured to the kaṣāya prepared from prasāraṇī at the time of filtration. The solid components of the taila detailed above (Prasāraṇī II) shall be added to it along with cow's milk, equal to the quantity of oil and the mixture is to be reduced again to oil. This oil is to be poured to the kaṣāya of Prabhāñjanavimarḍanam oil (cross ref. previous issue). The liquid components to be added are kāḍi, milk and curd; and the solid components the same as that of Prabhāñjanavimarḍanam oil. This mixture is to be reduced to taila and is to be collected in a clean vessel when it is medium (wax) stage. One-third or one-fourth ghee is also to be added to this oil. The contents should then be boiled again to make it moisture free. Application of this oil relieves śuddha vāta and āvaraṇa vāta. Irrigation with this oil below the level of neck is very effective in hemiplegia.

Repeated medication of this oil as given above will make it more effective. Irrigation with this oil is very effective in relieving vāta.

Pañcasneha

The following drugs, one prastha each, finely chopped should be added to the mixture of two droṇa of water and one śūrpa⁷ of dhānyāṃḷa, and reduced to one fourth.

Daśamūla	<i>Aegle marmelos</i>
	<i>Gmelina arborea</i>
	<i>Premna corymbosa</i>
	<i>Stereospermum colais</i>
	<i>Oroxylum indicum</i>
	<i>Solanum xanthocarpum</i>
	<i>Solanum indicum</i>
	<i>Desmodium gangeticum</i>
	<i>Pseudarthria viscida</i>
	<i>Tribulus terrestris</i>
Balā	<i>Sida rhombifolia</i> ssp. <i>retusa</i>
Māṣa	<i>Vigna mungo</i>
Kārpāsāsthi	<i>Gossypium herbaceum</i>
Kulathakam	<i>Macrotyloma uniflorum</i>

Add Tilaja taila (sesame oil), Keraja taila (coconut oil), Eraṇḍa taila (castor oil), the fat of pig and Cakṛa taila (sesame oil obtained by burning the wood pivot of the oil extractor), each two kuḍaba⁸ to the above and reduce to kaṣāya and mix with fine powders of the following; this is to be reduced further to remove moisture content.

Kārpāsāsthi	<i>Gossypium herbaceum</i>
Māmsī	<i>Nardostachys grandiflora</i>
Gaṇḍhīra	<i>Cayratia carnosa</i>
Kulathaka	<i>Macrotyloma uniflorum</i>

This formulation termed as Pañcasneha relieves severe pain caused by rheumatic diseases, stiffness, contusions and muscle injury, wasting of arm and apabāhuka. It is effective in wasting

⁶1 tula = 4.800 kg; ⁷1 śūrpa = 24.576 ltr; ⁸1 kuḍaba = 192g.

diseases also. This medicine is effective in relieving pricking pain and pulsating pain. While preparing Dhānvantaram gṛtām, the lipid component proportion is to be readjusted in such a way that sesame oil content is fifty percent and other four together is fifty percent (i.e., 12.5% each). The liquid contents are the kaṣāya of Dhānvantaram and milk. The solid content is the same as that of Dhānvantaram tailam. Pain, stiffness, edema of joints due to deranged pitta is also relieved by external application of this medicine.

Blood-letting in rheumatic diseases

Numbness and burning of feet, sciatica and calcaneal spur are relieved by bloodletting from the vein situated above kṣpṛa, a vital point. Drugs to relieve vāta should be given after this process.

Vein situated four aṅgula* above ankle joint should be punctured to let out blood to relieve Kṛoṣṭukasīrṣa (painful edema of knee joint). Gṛdhṛasī (sciatica) is relieved by bloodletting from the vein situated four aṅgula above or below knee joint. Bloodletting process should always be followed by treatments to pacify vāta.

All types of rheumatism, viśvācī and gṛdhṛasī are relieved by the use of ghee, sesame oil, coconut oil or castor oil medicated with the fine powders of the following as solid component and milk as liquid component. The quantity of milk should be twice the amount of lipid component.

Kulastha	<i>Macrotyloma uniflorum</i>
Kārpāsabīja	<i>Gossypium herbaceum</i>
Rāsnā	<i>Alpinia galanga</i>
Saindhava	Rock salt
Dāru	<i>Cedrus deodara</i>

*1 aṅgula = 2.5 cm

Upanāha (sudation by applying medicinal paste and bandaging) with the sours (pañcāmḷa) in takṛa (buttermilk) is also effective.

Sudation with Piṅḍasveda and irrigation with suitable medicated oil is effective in viśvācī and gṛdhṛasī. Repeated bloodletting may be required to relieve numbness caused by deranged vāta.

Later, sudation using nāvāra (*Oryza sativa*) rice paste, irrigation with the warm mixture of sesame oil and ghee, external application of Kṣīrabalā tailam, and other treatments to relieve vāta are to be done. Consumption of Vidāryādi kaṣāya and Kṣīrabalā kaṣāya are preferred. Milk medicated with balā may also be consumed in the evening; kaṣāya prepared from daśamūla can also be used.

Kaṣāya prepared from daśamūla, cukka (*Zingiber officinale*) and kuṛuntōṭṭi (*Sida rhombifolia* ssp. *retusa*) can be consumed with the addition of milk. In combined vitiation of vāta and pitta, a variation of Piṅḍataiala in which fine powders of aratta (*Alpinia galanga*) and catakuppa (*Anethum graveolens*) are added as solid components can be used for external application. Ghee medicated with kārāskara (*Strychnos nux-vomica*), termed Kārāskara gṛta relieves pains of different etiology. In the presence of local pain, application of nāvāra rice paste, external application of Piṅḍataiala, irrigation with the mixture of sesame oil and ghee, application of the fine paste of eḷḷu (*Sesamum indicum*), mutira (*Macrotyloma uniflorum*) and māṣa (*Vigna mungo*) are effective. Ghee medicated with Vidāryādi group of drugs or Kṣīrabalā taila prepared with the addition of one-third ghee may be consumed.

Expressed juice from the stems of cura (*Lagenaria siceraria*) consumed with ghee medicated with jīrakam (*Cuminum cyminum*) quickly relieves churning pain of rheumatic origin.

To relive pain, kaṣāya prepared from the roots of balā may be consumed with the addition of milk. A variation of this kaṣāya in which one-third of is replaced with cittaṃṛtu (*Tinospora cordifolia*) is also effective.

Another kaṣāya prepared from the following cures rheumatism.

Rāsnā	<i>Alpinia galanga</i>
Balādvaya	<i>Sida rhombifolia</i> ssp. <i>retusa</i> <i>Sida rhombifolia</i>
Eraṇḍa	<i>Ricinus communis</i>
Suradruma	<i>Cedrus deodara</i>
Sahacara	<i>Nilgiranthus ciliatus</i>
Varṣābhū	<i>Boerhaavia verticillata</i>
Gokṣura	<i>Tribulus terrestris</i>

Kaṣāya prepared from the following, consumed with the addition of castor oil relieves acute pain.

Eraṇḍa	<i>Ricinus communis</i>
Gokṣura	<i>Tribulus terrestris</i>
Balā	<i>Sida rhombifolia</i> ssp. <i>retusa</i>
Suradāru	<i>Cedrus deodara</i>
Viśva	<i>Zingiber officinale</i>
Sairīyaka	<i>Nilgiranthus ciliatus</i>
Amṛtalaṭā	<i>Tinospora cordifolia</i>
Agnimāntha	<i>Premna corymbosa</i>

Castor oil mixed with milk and fine powder of cīrakam (*Cuminum cyminum*) may be consumed. Kaṣāya prepared from the following consumed with the addition milk and a small quantity of powdered viśva absorbs all rheumatic diseases.

Eraṇḍa	<i>Ricinus communis</i>
Amaradāru	<i>Cedrus deodara</i>

Gokṣura	<i>Tribulus terrestris</i>
Varī	<i>Asparagus racemosus</i>
Pānīya	<i>Plectranthus vettiveroides</i>
Śairīyaka	<i>Nilgiranthus ciliatus</i>
Sāraṇī	<i>Merremia tridentata</i> ssp. <i>tridentata</i>
Amśumatī	<i>Desmodium gangeticum</i> <i>Pseudarthria viscida</i>
Balātraya	<i>Sida rhombifolia</i> ssp. <i>retusa</i> <i>Sida rhombifolia</i> <i>Sida cordata</i>
Vṛścīva	<i>Boerhaavia diffusa</i>
Jīraka	<i>Cuminum cyminum</i>
Rāsnā	<i>Alpinia galanga</i>
Cinnaruhā	<i>Tinospora cordifolia</i>
Aśvagandhā	<i>Withania somnifera</i>

A kaṣāya prepared from the following on consumption at night added with milk relieves vāta.

Balā	<i>Sida rhombifolia</i> ssp. <i>retusa</i>
Atibalā	<i>Sida rhombifolia</i>
Dāru	<i>Cedrus deodara</i>
Pañcāngula	<i>Ricinus communis</i>
Jīraka	<i>Cuminum cyminum</i>

The kaṣāya prepared from the following on consumption added with sesame oil, relieves vāta.

Amṛtu	<i>Tinospora cordifolia</i>
Āvaṇakkinver	<i>Ricinus communis</i>
Paṭṭūram	<i>Alternanthera sessilis</i>
Haricandanam	<i>Santalum album</i> (subst.)
Aratta	<i>Alpinia galanga</i>
Dēvatāram	<i>Cedrus deodara</i>

Milk medicated with the following on consumption in the early morning relieves vāta.

Āvaṇakku	<i>Ricinus communis</i>	2 parts
Amṛtu	<i>Tinospora cordifolia</i>	2 parts
Dāru	<i>Cedrus deodara</i>	1 part
Rāsnā	<i>Alpinia galanga</i>	1 part

In the case of rheumatism, fomentation with milk medicated with balā, application of warm ñavara rice paste, nasal medications in the form of nasya, sudation of the affected arm and consumption of Vātāsanītaila are very effective.

Intake of milk medicated with vilva (*Aegle marmelos*), kāśmarya (*Gmelina arborea*), tarkkārī (*Premna corymbosa*), pāṭalā (*Stereospermum colais*) and ḍuṇḍuka (*Oroxylum indicum*) is effectual.

A kaṣāya prepared from kuṣuntōṭṭi and ciṭṭamarṭu shall be reduced with the addition of milk; intake of this added with a small quantity of Kṣīrabalā taila relieves churning pain, numbness, pain and pricking pain.

A kaṣāya prepared from śuṇḍhī, balā and atibalā added to milk and reduced, on consumption relieves vāta.

Bhadrādarvādi kaṣāya

Kaṣāya prepared from the following, Vīratarādi kaṣāya and Vidāryādi kaṣāya relieves vāta. Milk is capable of relieving vāta.

Bhadrādāru	<i>Cedrus deodara</i>
Nātham	<i>Valeriana jatamansi</i>
Kuṣṭham	<i>Saussurea lappa</i>
Daśamula	<i>Aegle marmelos</i> <i>Gmelina arborea</i>

Premna corymbosa
Stereospermum colais
Oroxylum indicum
Solanum xanthocarpum
Solanum indicum
Desmodium gangeticum
Pseudarthria viscida
Tribulus terrestris
Sida rhombifolia ssp. *retusa*
Sida rhombifolia

Balādvayam

The principles of treatment in diseases caused by vāta are given below.

In the initial stages, external application of oil, unction and sudation, irrigation and vasti with unctuous and hot potency drug combinations, purification therapy, usage of drugs in Eraṇḍādi group, consumption of Daśamūla kaṣāya with milk, cereal soup with drugs of Vidāryādi group, unction, consumption of drugs that contain appetizers and carminatives, consumption of warm edibles and potables, fomentation with drugs that have sour taste, mild sudation, consumption of salty and sour foodstuffs, immersion and irrigation with dhānyāmḷa, and judicial use of Balātaila, etc. are curative.

In generalized vitiation of vāta (rheumatism affecting the whole body), submersion of the body of the patient in suitably warm dhānyāmḷa is very effective.