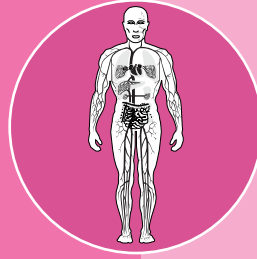


Āryavaidyan

लाभानां श्रेय आरोग्यम्

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



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CONTENTS

From the Pages of Vāgbhaṭa	Ramankutty C.	195
Effect of ghee and honey (viruddhāhāra) on mice - An experimental study	Trupti Jain Sangeeta Gehlot	206
Combined effect of Laśunaghṛta pāna and Laśunataila uttaravasti in anovulation due to PCOS - A study	Aparna. S. Nair N. Vijayakumar S. Shahina Mole	212
Pramāṇaśarīra with special reference to determination of stature from śiras (head) - A comprehensive study	Amardeep Singh U. Govida Raju	220
Role of āyurveda in Coronary Heart Diseases	Arunkumar G.	225
Doctor-patient relationships in ancient Indian veterinary literature	K.G. Sheshadri	229
Exploring Muscular Dystrophy in āyurveda	Ravishankar K. Yogeesha Acharya	236
Agniparīkṣa - A different approach (Part I)	Arjun Chand C.P. Chandni R. Arya Krishnan Surya Santhosh Surya Sukumaran	242
Sūtikāparicarya	Jeena Aravind U.	246
Decoding life	Anoop A.K.	252

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Quarterly journal of Arya Vaidya Sala

सतताध्ययनं, वादः परतन्त्रावलोकनम् ।
तद्विद्याचार्यसेवा च बुद्धिमेधाकरो गणः ॥

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FROM THE PAGES OF VĀGBHĀṬA - LXXXVIII

Ramankutty C.*

Abstract: The fifth chapter of Nidānasthānam viz. Rājayakṣmādinidānam is explained here. The aetiology, symptamatology, prognosis, etc. of rājayakṣmā (phthisis), svarabheda (hoarseness), arocaka (loss of appetite), chardi (vomiting), hṛdroga (heart diseases/cardiopathy) and tṛṣṇā (morbid thirst) are detailed in this chapter.

अथातो राजयक्ष्मादिनिदानं व्याख्यास्यामः ।
इति ह स्माहुरात्रेयादयो महर्षयः ।
(Athāto rājayakṣmādinidānam vyākhyāsyāmaḥ ।
Iti ha smāhurātreyaḥ maharṣayaḥ ।)
Let us discuss the chapter regarding the aetiology, etc.
of phthisis, etc. Thus spoke the sages Ātreya, etc

अथ राजयक्ष्मनिदानम् ।
अनेकरोगानुगतो बहुरोगपुरोगमः ।
राजयक्ष्मा क्षयः शोषो रोगराडिति च स्मृतः ॥११॥
(Atha rājayakṣmānidānam ।
Anekarogānugato bahurogapurogamaḥ ।
Rājayakṣmā kṣayaḥ śoṣa
rogarāḍiti ca smṛtaḥ ॥ 1 ॥)
Rājayakṣmā otherwise known as the King of diseases,
is well suited because it follows a list of many other
diseases and again it is followed or associated with
many a number of diseases. Kṣaya, śoṣa, and rogarāḍ
are synonyms of 'rajayakṣmā' or 'phthisis'. The
foresaid diseases/disease conditions may lead to
phthisis. That is the reason for mentioning it after
shortness of breath and hiccup.

नक्षत्राणां द्विजानां च राज्ञोऽभूद्यदयं पुरा ।
यच्च राजा च यक्ष्मा च राजयक्ष्मा ततो मतः ॥२॥
देहौषधक्षयकृतेः क्षयस्तत्सम्भवाच्च सः ।
रसादिशोषणाच्छोषो रोगराट् तेषु राजनात् ॥३॥
(Nakṣatrāṇām dvijānām ca
rājñōḥbhūdyayam purā ।
Yacca rājā ca yakṣmā ca
rājayakṣmā tato mataḥ ॥ 2 ॥
Dehaśadhakṣayakṛteḥ kṣaya-
statsambhavācca saḥ ।
Rasādiśoṣaṇācchoṣo
rogarāḍ teṣu rājanāt ॥ 3 ॥)
It is said that the King of stars and brāmins, the moon
was suffering from phthisis. Secondly, it is the King
of diseases and it diminishes the body (śoṣa) and later
on gives rise to many other diseases which collectively
waste the rasādi seven tissues of the body, hence kṣaya.
Thirdly, it is ranked high among the diseases, hence
rogarāḍ.

The term rājayakṣmā may interpreted in many ways.
Moon, the King of both stars and brāmins is said
to have suffered from rājayakṣmā, the disease that

* Chief Medical Officer, Publication Department, Arya Vaidya Sala, Kottakkal.

the king suffered from. The King of diseases, these are the various interpretations given to this threatening malady. A person affected by this disease becomes lean and weak. Then again, the potency of the medicine is also reduced because of the allied disease conditions that it gives rise to. Hence, the name 'kṣaya'. These diseases collectively waste the rasādi seven tissues of the body. Hence, the name 'śoṣa'. The degree of weakening is very high in this disease when compared to that of any other disease. Hence, the name 'rogarāt'.

साहसं वेगसंरोधः शुक्रौजःस्नेहसङ्क्षयः ।
अन्नपानविधित्यागश्चत्वारस्तस्य हेतवः ॥४॥

(Sāhasam vegasamrodhaḥ
śukraujaḥsnehasamśrayaḥ ।
Annapānavidhityāga-
ścatvārastasya hetavaḥ ॥ 4 ॥)

Over exertion, suppression of physical urges, depletion of semen, ojas and body lubricants and improper food habits are the four major causes for rājyakaṣmā.

As a result, the various channels, nerves and stomach get weakend which in turn results in the poor functioning of lungs and alimentary canal. This leads to rājyakaṣmā.

तैरुदीर्णोऽनिलः पित्तं कफं चोदीर्य सर्वतः ।
शरिरसन्धीनाविश्य तान् सिराश्च प्रपीडयन् ॥५॥
मुखानि स्रोतसां रुद्ध्वातथैवातिविवृत्य वा ।
सर्पन्नूर्ध्वमधस्तिर्यग्यथास्वं जनयेद्गदान् ॥६॥

(Tairudīrṇoṣnilaḥ pittam
kapham codīrya sarvataḥ ।
Śarīrasandhīnāvīśya
tān sirāśca prapīḍayan ॥ 5 ॥
Mukhāni srotasām ruddhva-
tathavivivṛtya vā ।
Sarpannūrdhvamadhastiryag-
yathāsvam janayedgādān ॥ 6 ॥)

The foresaid reasons lead to the perturbation of vāta which in turn causes the increase of pitta and kapha and spread to the joints and channels which run in all directions, upwards, downwards and transversely all over the body. The openings of channels get clogged or dilated and give rise to fresh ailments because of this.

This disease and its allied complications are caused by a particular type of vitiated pitta and kapha. This again is because of the vāta that is perturbed as a result of vitiated nervous disorders.

रूपं भविष्यतस्तस्य प्रतिशयायो भृशं क्षवः ।
प्रसेको मुखमाधुर्यं सदनं वह्निदेहयोः ॥७॥
स्थाल्यमात्रान्नपानादौ शुचावप्यशुचीक्षणम् ।
मक्षिकातृणकेशादिपातः प्रायोऽन्नपानयोः ॥८॥
हल्लासश्छर्दिररुचिरश्नतोऽपि बलक्षयः ।
पाण्योरवेक्षा पादास्यशोफोऽक्षणोरतिशुक्लता ॥९॥
बाह्वोः प्रमाणजिज्ञासा काये वैभत्स्यदर्शनम् ।
स्त्रीमद्यमांसप्रियता घृणित्वं मूर्द्धगुण्ठनम् ॥१०॥
नखकेशातिवृद्धिश्च, स्वप्ने चाभिभवो भवेत् ।
पतङ्गकृकलासाहिकपिश्वापदपक्षिभिः ॥११॥
केशास्थितुषभस्मादिराशौ समधिरोहणम् ।
शून्यानां ग्रामदेशानां दर्शनं शुष्यतोऽम्भसः ॥१२॥
ज्योतिर्गिरीणां पततां ज्वलतां च महीरुहाम् ।

(Rūpam bhaviṣyatastasya
pratiśyāyo bhṛśam kṣavaḥ ।
Praseko mukhamādhuryam
sadanam vahnidehayoḥ ॥ 7 ॥
Sthālyamatrānnapānādau
śucāvapyāśucīkṣaṇam ।
Makṣikātrṇakeśādi-
pātaḥ prāyoṣnnapānayoḥ ॥ 8 ॥
Hṛllasaśchardiraruci-
raśnatoṣpi balakṣayaḥ ।
Pānyoravekṣā pādāsya-
śophoṣkṣṇoratiśukḷatā ॥ 9 ॥

Bāhvoḥ pramāṇajijñāsā
 kāye baibhatsyadarśanam |
 Strīmadyamāmsapriyā
 ghr̥ṇitvam mūrdhdaguṇṭhanam || 10 ||
 Nakhakeśātivṛddhiśca,
 svapne cābhibhavo bhavet |
 Pataṅgakṛkalāsāhi-
 kapiśvāpadapakṣibhiḥ || 11 ||
 Keśāsthituṣabhasmādi-
 rāśau samadhirohaṇam |
 Śūnyānām grāmadeśānām
 darśanam śuśyatoḽmbhasaḥ || 12 ||
 Jyotirgirīṇām patatām
 jvalatām ca mahīruhām |)

The pre-monitory symptoms are cold, sneezing, salivation, sweet taste in the mouth, poor digestion, fatigue, unhygienic appearance of food and the utensils, appearance of flies, hair and grass in the food, heart-burn, vomiting, loss of appetite, loss of strength in spite of eating well, gazing at the hands, swelling on the face and feet, unusual whiteness in the eyes (anemia), attempting to get to a measurement of his arms, a feeling of disgust on his health conditions, craving for women, liquor and meat, extremely compassionate, a feeling of head being covered and overgrowth of nails and hair. One also dreams of being to flying termites, chameleon, snake, monkey, tiger and birds; mounting of piles of hair, bones, husk, ash; scenes of vacant places, abandoned villages, dried lakes, falling of moon, stars and mountains and trees on fire.

पीनसश्वासकासांसमूर्द्धस्वररुजोऽरुचिः ।।१३।।
 ऊर्ध्वं, विड्भ्रंशसंशोषावधः, च्छर्दिश्च कोष्ठगे ।
 तिर्यक्स्थे पार्श्वरुदोषे, सन्धिगे भवति ज्वरः ।।१४।।
 रूपाप्येकदशैतानि जायन्ते राजयक्ष्मिणः ।
 (Pīnasaśvāsakāsāmsa-
 mūrdhdasvararujōḽrucih || 13 ||

Ūrdhvam, viḍbhramśasamśoṣā-
 vadhaḥ, cchardīśca koṣṭhage |
 Tiryaksthe pārśvarugdoṣe,
 sandhige bhavati jvaraḥ || 14 ||
 Rūpāṇyekādaśaitāni
 jāyante rājayakṣmiṇaḥ |)

The clinical features of the vitiated doṣa when localised in the neck and head are catarrh, difficulty in breathing, cough, shoulder pain, pain in the head (head ache), hoarse voice, loss of appetite. (One has to keep in mind the importance of lungs in addition to the head and the vertebrae of neck.) When the doṣa is below the buttocks, there is every possibility of the stool being either loose or hard. If the doṣa is in the stomach, vomiting is the feature. Pain on the sides is seen when the doṣa is localised transversely and fever is seen when the doṣa is in the joints. These eleven features are typical indications of rājayakṣmā.

तेषामुपद्रवान् विद्यात्कण्ठोद्ध्वंसमुरोरुजम् ।।१५।।
 जृम्भाङ्गमर्दनिष्ठीववह्निंसादास्यपूतिताः ।

(Teṣāmupadravān vidyād-
 kaṇṭhorddhamsamurorujam || 15 ||
 Jṛmbhāṅgamardaniṣṭhīva-
 vahnīsādāsyapūtitāḥ |)

The clinical features of catarrh are pain in the throat and chest, yawning, breaking pain in the body, spitting, loss of appetite and bad breath. These are the seven secondary symptoms mentioned here.

तत्र वाताच्छिरःपार्श्वशूलमंसाङ्गमर्दनम् ।।१६।।
 कण्ठोद्ध्वंसं स्वरभ्रंशः

(Tatra vātācchiraḥpārśva-
 śūlamamsāṅgamardanam || 16 ||
 Kaṇṭhoddhamsaḥ svarabhramśaḥ.....)

When vāta is dominant, pain in the head and

sides, aches all over the body especially the shoulders, acute pain in the throat and hoarseness are evident.

पित्तात्पादांसपाणिषु ।

दाहोऽतिसारोऽसृक्छर्दिर्मुखगन्धो ज्वरो मदः ॥१७॥

(..... pittātpādāmsapāṇiṣu

Dāhoऽtisāroऽsṛkcchardir-

mukhagandho jvaro madaḥ ॥ 17 ॥)

Burning sensation in the soles and shoulders, diarrhoea, haematemesiis, bad breath, fever and intoxication are the features when pitta is dominant.

कफादरोचकच्छर्दिः कासो मूर्द्धाङ्गौरवम् ।

प्रसेकः पिनसः श्वासः स्वरसादोऽल्पवह्निता ॥१८॥

(Kaphādarocakacchardih

kāso mūrdhāṅgauravam|

Prasekaḥ pīnasaḥ śvāsaḥ

svarasādoऽlpavahnitā ॥ 18 ॥)

In the case of kapha dominance, the features are loss of appetite, vomiting, cough, heaviness of head and body, salivation, running nose, shortness of breath, hoarseness and poor digestive power.

दोषैर्मन्दानलत्वेन सोपलेपैः कफोल्बणैः ।

स्रोतोमुखेषु रुद्धेषु धातूष्मस्वल्पकेषु च ॥१९॥

विदह्यमानः स्वस्थाने रसस्तांस्तानुपद्रवान् ।

कुर्यादगच्छन्मांसादीनसृक् चोर्धं प्रधावति ॥२०॥

पच्यते कोष्ठ एवान्नमन्नपक्त्रैव चास्य यत् ।

प्रायोऽस्मान्मलतां यातं नैवालं धातुपुष्टये ॥२१॥

रसोऽप्यस्य न रक्ताय मांसाय कुत एव तु ।

उपस्तब्धः स शकृता केवलं वर्तते क्षयी ॥२२॥

(Doṣairmandānalatvena

sopalepaiḥ kapholbṇaiḥ|

Srotomukheṣu ruddheṣu

dhātūṣmasvalpakeṣu ca ॥ 19 ॥

Vidahyamānaḥ svasthāne

rasastāmstānupadravān|

Kuryādagacchanmāṃsādī-

naṣṛk cordham pradhāvati ॥ 20 ॥

Pacyate koṣṭha evānna-

mannapaktraiva cāsyā yat|

Prāyoऽsmānmalatām yātam

naivālam dhātupuṣṭhaye ॥ 21 ॥)

(Rasoऽpyasya na raktāya

māmsāya kuta eva tu|

Upastabdhaḥ sa śakṛtā

kevalam vartate kṣayī ॥ 22 ॥)

The openings of the channels of rasa, etc. are clogged because of the weakening of the digestive fire when kapha is dominated. This results in the weakening of the fire in the tissues, which in turn results in the poor digestion of rasa, etc. This hinders the muscle transformation, hence, the śoṣa. It is evacuated upwards as vomiting. More food turns to waste because of poor digestion which deprives the tissues of nutrition. Blood forms from rasa and muscles forms from blood. In such cases, the survival of the patient lives on the strength of the faeces in the body.

लिङ्गेष्वल्पेष्वपि क्षीणं व्याधौषधबलाक्षमम् ।

वर्जयेत्.....

(Liṅgeṣvalpeṣvapi kṣīṇam

vyādhausadhabalākṣamam|

Varjayet

It is said not to treat patients who are too weak to withstand the disease and the treatment itself even if he shows only a few of the foresaid symptoms.

साधयेदेव सर्वेष्वपि ततोऽन्यथा ॥२३॥

इति राजयक्ष्मानिदानम् ।

(..... sādhyedeva

sarveṣvapi tatoऽnyathā ॥ 23 ॥

Iti rājayakṣmānidānam|)

Whereas, if the patient with all the foresaid symptoms is strong enough to withstand, then he should be treated.

Thus ends the aetiology, symptamatology, prognosis, etc. of rājayakṣmā (phthisis).

अथ स्वरभेदनिदानम् ।

दोषैव्यस्तैः समस्तैश्च क्षयात् षष्ठश्च मेदसा ।

स्वरभेदो भवेत्

(Atha svarabhedanidānam ।

Doṣaivyastaiḥ samastaiśca

kṣayāt ṣaṣṭhaśca medasā ।

Svarabhedo bhavet

Now we discuss the aetiology, symptamatology, prognosis, etc. of svarabheda (hoarseness).

Hoarseness may be caused because of the perturbation of any one of the doṣa or in combination; kṣaya or medas.

तत्र क्षामो रूक्षश्चलः स्वरः ॥२४॥

शूकपूर्णाभकण्ठत्वं स्निग्धोष्णोपशयोऽनिलात् ।

(..... tatra

kṣāmo rūkṣaścalaḥ svaraḥ ॥ 24 ॥

Śūkapūrṇābhakaṇṭhatvam

snigdhoṣṇopaśayoḥnilāt ।

If the vāta is vitiated, then, the voice will be either feeble or coarse. One might have pricking feeling in the throat. Can be relieved by the use of hot and fatty substances.

पित्तात्तालुगळे दाहः शोष उक्तावसूयनम् ॥२५॥

(Pittāttāluḡaḷe dāhaḥ

śoṣa uktāvasūyanam ॥ 25 ॥)

Burning sensation in the cheeks and neck and dryness of throat are the symptoms of when pitta is vitiated.

लिम्पन्निव कफात्कण्ठं मन्दः खुरखुरायते ।

स्वरो विबद्धः

(Limpanniva kaphātkaṇṭham

mandah khurakhurāyate ।

Svaro vibaddhaḥ.....)

When kapha is vitiated, one feels as if something has been smeared in the throat and the voice is low, husky and 'khur-khur' - the wheezing sound is heard.

सर्वस्तु सर्वलिङ्गः

(.....sarvastu sarvaliṅgaḥ)

All the foresaid symptoms are seen when all the three doṣa are perturbed.

क्षयात्कषेत् ॥२६॥

धूमायतीव चात्यर्थम्

(.....kṣayatkaṣet ॥ 26 ॥

Dhūmāyatīva cātyartham

In svarabheda due to kṣaya, speech is painful and one gets the feeling of burning sensation while belching.

मेदसा श्लेष्मलक्षणः ।

कृच्छ्रलक्ष्याक्षरश्च

(.....medasā śleṣmalakṣaṇaḥ ।

Kṛcchralakṣyākṣaraśca

In the enhancement of medas it is symptomatic of kapha perturbation.

अत्र सर्वैरन्त्यं च वर्जयेत् ॥२७॥

इति स्वरभेदनिदानम् ।

(..... atra sarvairantyaṃ ca varjayet ॥ 27 ॥

Iti svarabhedanidānam ।)

Voice disturbance caused by three doṣa and derangement of medas is incurable. Hence, not to be treated.

Svarabhedam is one of the allied conditions of kṣaya.

There are six types, such as, vātikam, paittikam, ślaiṣmikam, sānnipātikam, kṣayajam and medojam. Of these sānnipātikam and medojam are incurable. The rest are curable pertaining to their conditions. Thus ends the aetiology, symptamatology, prognosis, etc. of svarabheda (hoarseness).

अथारोचकनिदानम् ।

अरोचको भवेद्दोषैर्जिह्वाहृदयसंश्रयेः ।

सन्निपातेन मनसः सन्तापेन च पञ्चमः ॥२८॥

(Athārocakanidānam)

Arocako bhaveddoṣair-

jihvāhṛdayasamśrayaiḥ ।

Sannipātena manasaḥ

santāpena ca pañcamaḥ ॥ 28 ॥

Now we discuss the aetiology, symptamatology, prognosis, etc. of arocaka (loss of appetite).

Arocaka is the result of fine disturbances consisting of the tongue, mind, the tridoṣa and the sorrow.

Arocaka, another allied conditions of kṣaya is caused because of vāta, pitta, kapha, sānnipātika and sorrow. Here the doṣa is localised on the tongue and mind. As a result the affected person is in despair because whatever he eats turn out to be stale and he is disgusted with everything because he has no pleasure in whatsoever he does. Hence, arocaka.

कषायतिक्तमधुरं वातादिषु मुखं क्रमात् ।

सर्वोत्थे विरसं शोकक्रोधादिषु यथामलम् ॥२९॥

इत्यरोचकनिदानम् ।

(Kaṣāyatiktamadhuram

vātādiṣu mukham kramāt

Sarvotthe virasam śoka-

krodhādiṣu yathāmalam ॥ 29 ॥

Ityarocakanidānam)

In vātikārocaka the taste in the mouth will be astringent. In paittika it will be bitter and in kaphaja

it will be sweet. Sannipātikārocakam results in distaste of any food item. But in case of arocakam caused by sorrow or anger, the rasa depends on the causative factor of the perturbation. Here vāta is perturbed due to sorrow and pitta due to anger. Hence in śokaja it is kaṣāyarasa and krodhaja results in tiktarasa.

Thus ends the aetiology, symptamatology, prognosis, etc. of arocaka (loss of appetite).

अथ छर्दिनिदानम् ।

छर्दिदोषैः पृथक्सर्वद्विष्टैरथैश्च पञ्चमी ।

(Atha chardinidānam)

Chardirdoṣaiḥ pṛthaksarvair-

dviṣṭairarthaiśca pañcamī ।

Now we discuss the aetiology, symptamatology, prognosis, etc. of chardi (vomiting).

There are five types of chardi viz. vātaja, pittaja, kaphaja, sānnipātika and dviṣṭārṭhayogaja.

Vomiting is the symptom of the perturbation of the three doṣa, any special vitiated condition or because of the distasteful condition of the mind/sensory organs.

उदानो विकृतो दोषान् सर्वास्वप्यूर्ध्वमस्यति ॥३०॥

(Udāno vikṛto doṣān

sarvāsvapyūrdhvamasyati ॥ 30 ॥)

Here, the udānavāyu is vitiated and everything is brought out.

तासुक्लेशास्यलावण्यप्रसेकारुचयोऽग्रगः ।

(Tāsukleśāsyalāvāṇya-

prasekārucayoḥgragāḥ ।)

Variations or fluctuations of the doṣa, salty taste, salivation and loss of appetite are the prodromal symptoms of vomiting.

नाभिपृष्ठं रुजन् वायुः पार्श्वे चाहारमुत्क्षिपेत् ॥३१॥

ततो विच्छिन्नमल्पालं कषायं फेनिलं वमेत् ।

शब्दोद्गारयुतं कृष्णमच्छं कृच्छ्रेण वेगवत् ॥३२॥
कासास्यशोषहन्मूर्द्धस्वरपीडाकळमान्वितः ।

(Nābhipr̥ṣṭham rujan vāyuh
pārśve cāhāramutkṣipet ॥ 31 ॥
Tato vicchinnamalpālpam
kaṣāyam phenilam vamet
Śabdodgārayutam kṣṇa-
maccham kṛccheṇa vegavat ॥ 32 ॥
Kāsāsyaśoṣahṛnmūrdha-
svarapīḍākḷamānvitah ॥)

Vomiting caused by vāta indicates the following features: vomiting gives rise to pain in the naval, back and sides; vomiting in bouts with astringent taste which is black in colour and the vomitus is thin. Vomiting is difficult and the mouth is dry, cough, pain is experienced in the head and heart region and fatigue.

पित्ताक्षारोदकनिभं धूम्रं हरितपीतकम् ॥३३॥
सासृगम्लं कटूष्णं च तृणमूर्च्छातापदाहवत् ।

(Pittātkṣārodakanibham
dhūmram haritapītakam ॥ 33 ॥
Sāsrgamḷam kaṭūṣṇam ca
tṛṇmūrccchātāpadāhavat ॥)

When pitta is the causative factor, the following features are noticed: vomitus is similar to ash coloured and greenish yellow. Sometimes blood stains are visible; tastes either sour or hot; sometimes it is hot; thirst, fainting and heat are also experienced.

कफात् स्निग्धं घनं शीतं श्लेष्मतन्तुगवाक्षितम् ॥३४॥
मधुरं लवणं भूरि प्रसक्तं लोमहर्षणम् ।
मुखश्वयथुमाधुर्यतन्द्राहल्लासकासवान् ॥३५॥

(Kaphāt snigdham ghanam śītam
śleṣmatantugavākṣitam ॥ 34 ॥
Madhuram lavaṇam bhūri
prasaktam lomaharṣaṇam ॥

Mukhaśvayathumādhurya-
tandrāhṛllāsakāsavān ॥ 35 ॥)

If kapha is vitiated, then the following features are seen: it is slimy, viscous, cold with threads of kapha, sweet and salty taste in the mouth, very large quantity of vomitus, horripilation, swelling on the face, sweet taste, lethargy, heart-burn and cough.

सर्वलिङ्गा मलैः सर्वै र्शिष्टोक्ता या च तां त्यजेत् ।

(Sarvaliṅgā malaiḥ sarvai
riṣṭoktā yā ca tāṃ tyajet ॥)

If vomiting is caused by the three doṣa collectively, then again all the foresaid features are noticed. A patient with all the above symptoms and signs of death should not be treatment.

पूत्यमेध्याशुचिद्विष्टदर्शनश्रवणादिभिः ॥३६॥
तप्ते चित्ते हृदि क्लिष्टे छर्दिद्विष्टार्थयोगजा ।

(Pūtyamedhyāśucidviṣṭa-
darśanaśravaṇādibhiḥ ॥ 36 ॥
Tapate citte hṛdi kṣiṣṭe
chardirdviṣṭārthayogajā ॥)

'Dviṣṭārthayogaja' vomiting is caused when one's mind is disturbed at the sight and smell of repulsive things like foul smelling things, faeces, unclean things, hearing undesirable sounds, etc.

वातादीनेव विमृशेत्कृमिषुष्णामदौहदे ॥३७॥
शूलवेपथुहल्लासैर्विशेषात् कृमिजां वदेत् ।
कृमिहद्रोगलिङ्गैश्च

इति छर्दिनिदानम् ।

(Vātādīneva vimṛśet-
kṛmitṛṣṇāmadauhṛde ॥ 37 ॥

Śūlavepathuhṛllāsair-
viśeṣāt kṛmijāṃ vadet ॥
Kṛmihṛdrogaliṅgaiśca.....

Iti chardinidānam ॥)

Worms may cause vomiting. Indigestion and pregnancy cause vomiting. These may be traced to symptoms of doṣa disturbances. Abdominal colic, chills and chest pain are symptomatic of worms.

Thus ends the aetiology, etc. of chardi (vomiting)

अथ हृद्रोगनिदानम् ।

स्मृताः पञ्च तु हृद्गदाः ॥३८

तेषां गुल्मनिदानोक्तैः समुत्थानैश्च सम्भवः ।

Atha hṛdroganidānam ।

..... smṛtāḥ pañca tu hṛdgadāḥ ॥ 38 ॥

Teṣāṃ gulmanidānoktaiḥ

samutthānaiśca sambhavaḥ ।

Now we discuss the aetiology, symptomatology, prognosis, etc. of hṛdroga (cardiopathy).

There are five types of hṛdroga. The aetiology of hṛdroga are the same as of gulma, which are explained in the Gulmanidāna.

वातेन शूल्यतेऽत्यर्थं तुद्यते स्फुटतीव च ॥३९॥

भिद्यते शुष्यति स्तब्धं हृदयं शून्यता द्रवः ।

अकस्माद्दीनता शोकौ भयं शब्दासहिष्णुता ॥४०॥

वेपथुर्वेष्टनं मोहः श्वासरोधोऽल्पनिद्रता ।

(Vātena śūlyateṣtyartham

tudyate phuṭatīva ca ॥ 39 ॥

Bhidyate śuṣyati stabdham

hṛdayam śūnyatā dravaḥ ।

Akasmāddīnatā śokau

bhayam śabdāsahiṣṇutā ॥ 40 ॥

Vepathurveṣṭanam mohaḥ

śvāsarodhoḥṣpanidratā ।)

The clinical features of heart diseases of vāta origin are excruciating pain in the heart region, sometimes piercing, breaking or splitting as the case may be; sometimes as if drying up; numbness, as if empty and self-pity, grief and fear for no reason; cannot

bear noise, shaking of the body, cramps, swooning, breathlessness and lack of sleep.

पित्तातृष्णा भ्रमो मूर्च्छा दाहः स्वेदोऽम्लकः कळमः ॥४१॥

छर्दनं चाम्लपित्तस्य धूमकः पीतता ज्वरः ।

(Pittātṛṣṇā bhramo mūrccā

dāhaḥ svedomḷakaḥ kḷamaḥ ॥ 41 ॥

Chardanam cāmḷapittasya

dhūmakāḥ pītātā jvaraḥ ।)

In pitta origin, the clinical features are as follows: thirst, dizziness, fainting, burning sensation, perspiration, pyrosis, fatigue, bilious vomiting, burning sensation while belching, yellowish discolouration and fever.

श्लेष्मणा हृदयं स्तब्धं भारिकं साशमगर्भवत् ॥४२॥

कासाग्निसादनिष्ठीवनिद्रालस्यारुचिज्वराः ।

(Śleṣmaṇā hṛdayam stabdham

bhārikam sāsmagarbhavat ॥ 42 ॥

Kāsāgnisādaniṣṭhīva-

nidrālasyarucijvaraḥ ।)

Whereas in that of kapha origin a feeling of distant in the heart region, a feeling of a hard and heavy stone is lodged within, cough with expectoration, poor digestion, laziness, sleepy feeling, loss of appetite and fever.

सर्वलिङ्गस्त्रिभिर्दोषैः

(Sarvaliṅgastribhirdoṣaiḥ.....)

Combination of all the above features can be seen when it is of the combined origin.

कृमिभिः शयवनेत्रता ॥४३॥

तमःप्रवेशो हल्लासः शोषः कण्डूः कफस्त्रुतिः ।

हृदयं प्रततं चात्र क्रकचेनेव दार्यते ॥४४॥

चिकित्सेदामयं घोरं तं शीघ्रं शीघ्रकारिणम् ।

इति हृद्रोगनिदानम् ।

(.....kṛmibhiḥ śyāvanetratā|| 43 ||
Tamaḥpraveśo hṛllāsaḥ
śoṣaḥ kaṇḍūḥ kaphasrutiḥ|
Hṛdayam pratatam cātra
krakaceneva dāryate|| 44 ||
Cikitsedāmayam ghoram
tam śīghram śīghrakāriṇam|
Iti hṛdroganidānam|)

In the origin of worms, the features are brown coloured eyes, blackout, discomfort in heart region (hṛllāsa), dryness of the mouth, irritation in the throat, phlegm expectoration and a feeling of the heart being sewed apart. This needs a prompt attention and treatment because it is fatal if left casually.

Thus ends the aetiology, etc. of hṛdroga.

अथ तृष्णानिदानम् ।
वातात्पित्तात्कफात्तृष्णा सन्निपाताद्रसक्षयात् ॥४५॥
षष्ठी स्यादुपर्गाच्च

(Atha tṛṣṇānidānam |
Vātapittātkaphātṛṣṇā
sannipātādrasakṣayāt|| 45 ||
Ṣaṣṭhī syāduparṅgācca.....)

Now we discuss the aetiology, symptamatology, prognosis, etc. of tṛṣṇā (morbid thirst).

Thirst may arise from the perturbation of doṣas individually or in combinations, loss of rasadhātu also because of inter-current diseases.

वातपित्ते तु कारणम् ।
सर्वासु
(..... vātapitte tu kāraṇam|
Sarvāsu.....)

But vāta and pitta are the root cause for all the other disturbances.

तत्रकोपो हि सौम्यधातुप्रशोषणात् ॥४६॥
सर्वदेहभ्रमोत्कम्पतापतृड्दाहमोहकृत् ।
(.....tatprakopo hi
saumyadhātupraśoṣaṇāt|| 46 ||
Sarvadehabhramotkampa-
tāpatṛḍḍāhamohakṛt|)

This again leads to the drying up of all the moist tissues. This results in dizziness, generalised tremors, sensation of heat, thirst, burning sensation and confusion.

जिह्वामूलगळकळोमतालुतोयवहाः सिराः ॥४७॥
संशोष्य तृष्णा जायन्ते
(Gihvāmūlagaḷakḷoma-
tālutoyavahāḥ sirāḥ|| 47 ||
Samśoṣya tṛṣṇā jāyante.....)

Thirst is experienced when the root of tongue, throat, trachea, chin and body channels become dry.

तासां सामान्यलक्षणम् ।
मुखशोषो जलात्पित्त्रद्वेषः स्वरक्षयः ॥४८॥
कण्ठौष्ठजिह्वाकार्कश्यं जिह्वानिष्क्रमणं क्लमः ।
प्रलापचित्तविभ्रंशतृड्ग्रहोक्तास्तथाऽऽमयाः ॥४९॥

(..... tāsām sāmānyalakṣaṇam|
Mukhaśoṣo jalātpittr-
annadveṣaḥ svarakṣayaḥ|| 48 ||
Kaṇṭhauṣṭhajihvākārkaśyam
jihvāniṣkramaṇam kḷamaḥ|
Pralāpacittavibhramśa-
tṛḍḍgrahoktāstathāḥ smayāḥ|| 49 ||)

Normally, the features noticed in morbid taste are dryness of mouth, unable to quench the thirst, distaste for food, weak voice, coarseness of throat, lips, tongue, protrusion of tongue, fatigue, irrational talk, disorientation and the signs associated with suppression of thirst.

मारुतात् क्षामता दैन्यं शङ्खतोदः शिरोभ्रमः ।
गन्धाज्ञानास्यवैरस्यश्रुतिनिद्राबलक्षयाः ॥५०॥
शीताम्बुपानाद्द्विश्च

(Mārutāt kṣāmatā dainyam
śaṅkhatodaḥ śirobhramaḥ ।
Gandhājñānāsyaavairasya-
śrutinidrābalakṣayāḥ ॥ 50 ॥
Śītāmbupānādvdvishca.....)

The clinical features of vāta induced thirst are debility, wretchedness, pain in the temples, giddiness, loss of smell and taste, lack of hearing and sleep and weakness. These symptoms are aggravated on drinking cold water.

पित्तान्मूर्च्छास्यतिक्तता ।
रक्तेक्षणत्वं प्रततं शोषो दाहोऽतिधूमकः ॥५१॥
(..... pittānmūrchāsyaatiktatā ।
Raktekṣaṇatvam pratatam
śoṣo dāhoḥṣtidhūmakaḥ ॥ 51 ॥)

The features of pitta induced thirst are fainting, bitterness in the mouth, redness in the eyes, extreme dryness, generalised burning sensation and burning sensation while belching.

कफो रुणद्धि कुपितस्तोयवाहिषु मारुतात् ।
स्रोतःसु स कफस्तेन पङ्कवच्छोष्यते ततः ॥५२॥
शूकैरिवाचितः कण्ठो निद्रा मधुरवक्त्रता ।
आध्मानं शिरसो जाड्यं स्तैमित्यच्छर्द्यरोचकाः ॥५३॥
आलस्यमविपाकश्च

(Kapho ruṇaddhi kupita-
stoyavāhiṣu mārutāt ।
Srotaḥsu sa kaphastena
paṅkavacchoṣyate tataḥ ॥ 52 ॥
Śūkairivācītaḥ kaṅṭho
nidrā madhuravaktratā ।
Ādhmānam śirasō jāḍyam
staimityacchardyarocakāḥ ॥ 53 ॥

Ālasyamavipākaśca.....)

Vitiated kapha obstructs vāta in the water channels. This obstructed vāta weakens the kapha. This makes one feel as if thorns are irritating the throat. Sleepiness, mouth tastes sweet, flatulence, dullness to the head, indolence, vomiting, loss of appetite, laziness and indigestion are also some of the indications.

सर्वैः स्यात्सर्वलक्षणा ।

(..... sarvaiḥ syātsarvalakṣaṇā)

Combinations of above features are seen in all doṣa vitiation.

आमोद्भवा च, भक्तस्य संरोधाद्वातपित्तजा ॥५४॥
उष्माक्लान्तस्य सहसा शीताम्भो भजतस्तृषम् ।
ऊष्मा रुद्धो गतः कोष्ठं यां कुर्यात्पित्तजैव सा ॥५५॥
या च पानातिपानोत्था, तीक्ष्णाग्नेः स्नेहजा च या ।
स्निग्धगुर्व्मलवणभोजनेन कफोद्भवा ॥५६॥

(Āmodbhavā ca, bhaktasya
samrodhādvātapittajā ॥ 54 ॥
Uṣmākḷāntasya sahasā
śītāmbho bhajatastrṣam ।
Uṣmā ruddho gataḥ koṣṭham
yām kuryātpittajaiva sā ॥ 55 ॥
Yā ca pānātipānotthā,
tīkṣṇāgneḥ snehajā ca yā ।
Snigdghagurvamḷalavaṇa-
bhojanena kaphodbhavā ॥ 56 ॥)

Āma induced thirst also show the foresaid symptoms. Here again, the cause is the vitiation of all the three doṣas. Again, vāta and pitta vitiation take place when one is starving. Pitta induced thirst is seen when an exhausted person labouring in the hot sun goes for an immediate cold water bath. Here, the sudden exposure to cold blocks the exit of heat from within. The pitta migrates to the abdomen to produce thirst. Too much

consumption of alcohol or snehapānam strong digestive ability may again be a victim of morbid thirst, through the agency of pitta. Thirst following the ingestion of oily, heavy, sour and salty food, on the other hand is a result of kapha perturbation. Hence, kapha induced thirst.

तृष्णा रसक्षयोक्तेन लक्षणेन क्षयात्मिका ।

(Tr̥ṣṇā rasakṣayoktena
lakṣaṇena kṣayātmikā)

Thirst on depletion can be diagnosed by the symptoms of thirst mentioned under the depletion of rasadhātu.

शोषमेहज्वराद्यन्यदीर्घरोगोपसर्गतः ॥५७॥

या तृष्णा जायते तीव्रा सोपसर्गात्मिका स्मृता ॥५७ १/२॥

इति तृष्णानिदानम् ।

(Śoṣamehajvarādyanya-
dīrgharogopasargataḥ ॥ 57 ॥

Yā tr̥ṣṇā jāyate tīvrā

sopasargātmikā smṛtā ॥ 57½ ॥

Iti tr̥ṣṇānidānam ।

The type of morbid thirst which characterises chronic diseases such as phthisis, diabetes and fever is called upasargatr̥ṣṇā.

Thus ends the aetiology, etc. of tr̥ṣṇā.

इति श्रीवैद्यपतिसिंहगुप्तसूनुश्रीमद्वाग्भटविरचिताया-

मष्टाङ्गहृदयसंहितायां तृतीये निदानस्थाने

राजयक्ष्मादिनिदानं नाम पञ्चमोऽध्यायः ॥५॥

(Iti śrīvaidyapatisimhaguptasūnuśrīmadvāgbhaṭa-
viracitāyāmaṣṭāṅgahṛdayasamhitāyāyām tritīye
nidānasthāne rājayakṣmādinidānam nāma
pañcamoḍhyāyaḥ)

Thus ends the 5th chapter named Rājayakṣmādi
nidānam of Aṣṭāṅgahṛdayam composed by Śrī
Vāgbhaṭa, the son of Simhagupta.

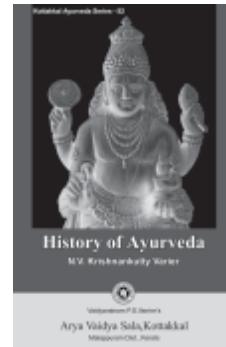
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EFFECT OF GHEE AND HONEY (VIRUDDHĀHĀRA) ON MICE - AN EXPERIMENTAL STUDY

Trupti Jain** and Sangeeta Gehlot**

Abstract: Viruddhāhāra is a substance which causes vitiation of doṣas; if not expelled out of the body, it becomes antagonistic to the dhātus (tissues). An experimental study was conducted on the mice to evaluate the effect of combination of ghee and honey (viruddhāhāra). Total 32 healthy mice were randomly allocated into 4 groups. Group I was served as a control group. Group II was treated with equal quantity of ghee and honey in the dose of 2.4 gm / kg body wt. once daily. Group III and Group IV were treated with unequal quantity of ghee and honey in proportion of 3:1 (3.6 gm/kg: 1.2 gm/kg) and 1:3 (1.2 gm/kg : 3.6 gm/kg) respectively. Duration of the study was 3 months. The observation showed harmful effects like irritability, dullness and lethargy, weight loss, congestion and necrosis of liver tissue and marked decrease in Pilosebaceous unit of skin and even death on experimental mice. This proves the textual contraindication of this combination.

Introduction

Āyurvedic classics mention various food combinations which are said to be virudha (unwholesome). The use of such viruddhāhāra for a long period produces various disorders like impotency, eruption, fistula, cold, blindness, ascitis, edema, insanity, fainting, fever, genetic disorders, etc. and even death. While stating the objectionable proportions, ācāryas have invariably mentioned a combination of ghee and honey in equal proportion, and that it should not be taken as it produces harmful effects on the body. A experimental study was done in this context to evaluate the effect of ghee and honey in different proportions on mice and to explore the rationalities behind it.

Material and methods

Animals:- About 6-7 weeks old healthy mice of same race, either sex and having weight between 25-35 gm were procured from the Central Animal House, IMS, BHU, Varanasi. The study was carried out at the Dept. of Kriya Sharir, IMS, BHU, Varanasi.

Ghee and Honey:- Ghee and honey were obtained from the Gandhi Ashram, Varanasi and Dabar Company, respectively.

32 healthy mice were randomly selected and equally allocated into 4 groups as follows. The duration of the study was 3 months.

- Group I - (Control) - Fed on laboratory diet and water.

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- Group II - (Trial) - Treated with ghee and honey in equal proportion, each in the dose of 2.4 gm/kg body weight orally once daily.
- Group III (Trial) - Treated with ghee and honey in 3:1 in the dose of 3.6 gm/kg body weight and 1.2 gm/kg body weight respectively, once daily.
- Group IV (Trial) - Treated with ghee and honey in 1:3 proportion in a dose of 1.2 gm/kg body weight and 3.6 gm/kg body weight respectively once daily.

Assessment

General signs:- All the animals were observed daily for general signs and symptoms.

Body weight:- All the animals were weighed initially and then on every 10th day interval in the subsequent period of study.

Haematological examination:- Blood sample of 2 animals from each group were collected on the same day of sacrifice and tested for SGOT, SGPT, Serum Urea and Serum Creatinine.

Histopathological examination:- 4 mice from each group were sacrificed at the end of 3rd month and tissues from the heart, spleen, liver, kidney and skin were dissected for the histopathological examinations.

Observations and results

The animals in trial groups i.e. Group II, Group III and Group IV, initially showed a mild degree of irritability followed by dullness and lethargy in subsequent period of study as compared to the control group. From the 35th day onward, patchy skin lesions characterised by fall of hair and roughness in the area mainly over the face region was observed in Group II and Group III and in successive days their severity was increased. (Fig. I. a-c).



a



b



c

Fig. I a-c:

a. Healthy mice (Group I); b. Skin lesions over face with loss of hair (Group II); c. Skin lesions over face with loss of hair (Group III).

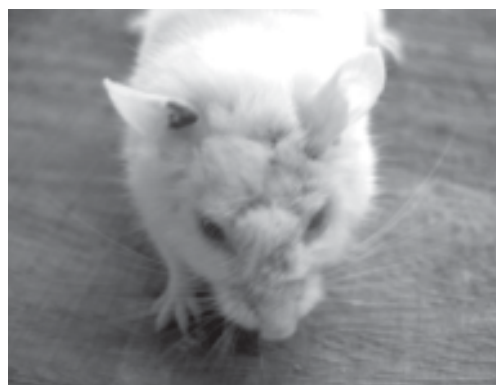
Bilateral or unilateral erythematous lesions over the pinna of ear were noticed from the 35th day onwards, gradually sloughing of pinna was found in Group II and Group III, reason might be necrosis of that region. (Fig. II a-c) From the 10th day onwards, oedema over the forelimb of mice followed by death of the mice was observed in Group IV. (Fig. III)

On intra group comparison, decrease in mean difference of weight at different time interval as compared to initial was found highly significant in Group II and Group III whereas in Group I at different time interval mean increase in weight was found highly significant as compared to initial day. (Table 1) No such comparison was done in Group IV as animals of this group were expired and only two animals were remained at the end of the study. Increased SGOT, SGPT in Group II, III and IV was observed as compared to in Group I. Increase of Sr. Urea and Sr. Creatinine was observed in Group II and III whereas in Group I and in Group IV such increase was not observed. (Table 2)

Among all the tissues subjected for histopathological study, only liver and skin



Fig. III
Oedema over forelimb (Group IV)



a



b



c

Fig. II a-c:
a. Erythematous lesion over pinna (Group II)
b. Erythematous lesion over pinna (Group III)
c. Sloughing of pinna (Group II)

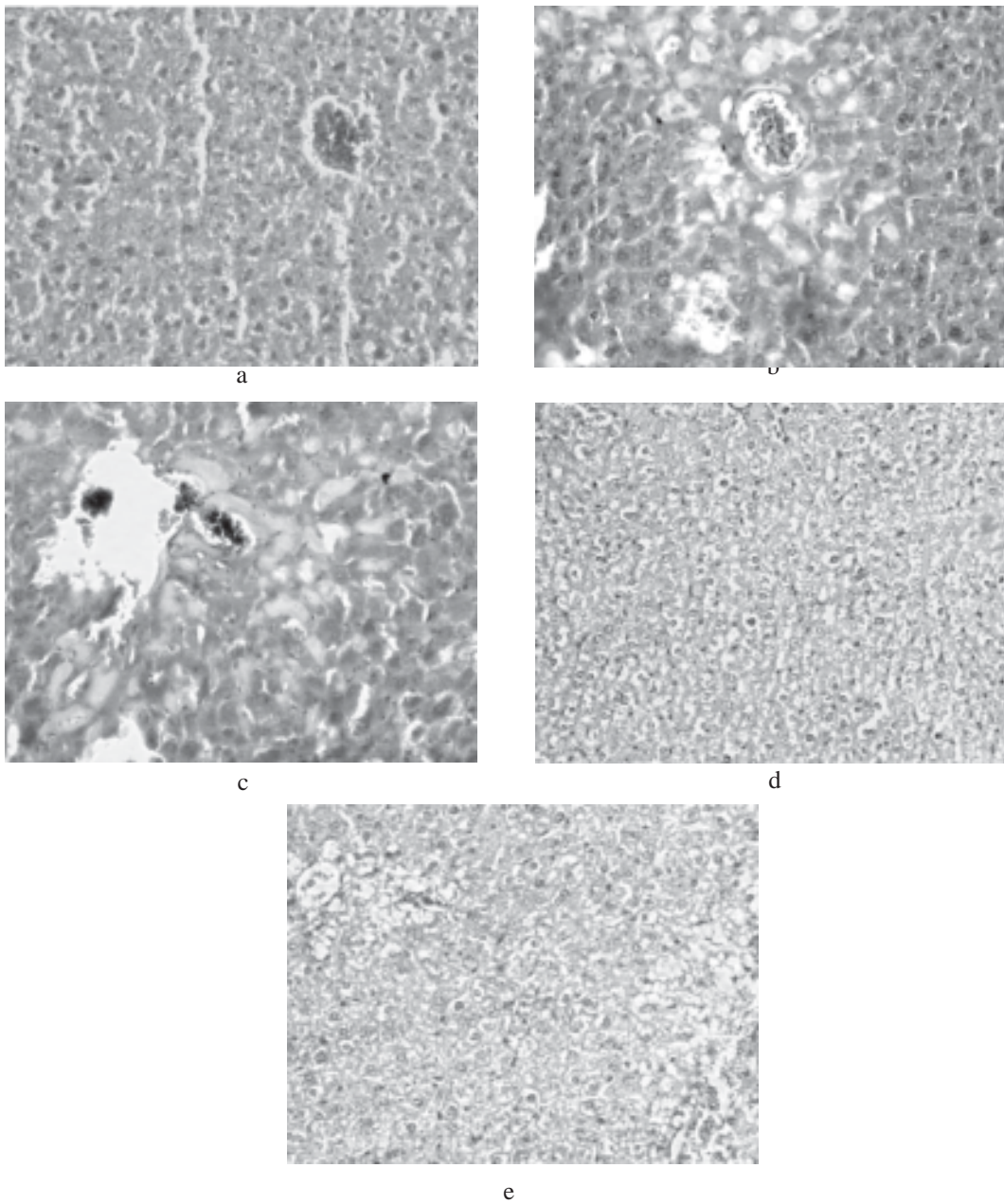


Fig. IV a-e: Histo-pathological observations
 a. Normal liver (Group I); b. Necrosis and congestion of liver tissue (Group-II);
 c. Necrosis and congestion of liver tissue (Group-III); d. Ballooning of hepatocytes (Group-IV);
 e. Fatty Infiltration of hepatocytes (Group-IV)

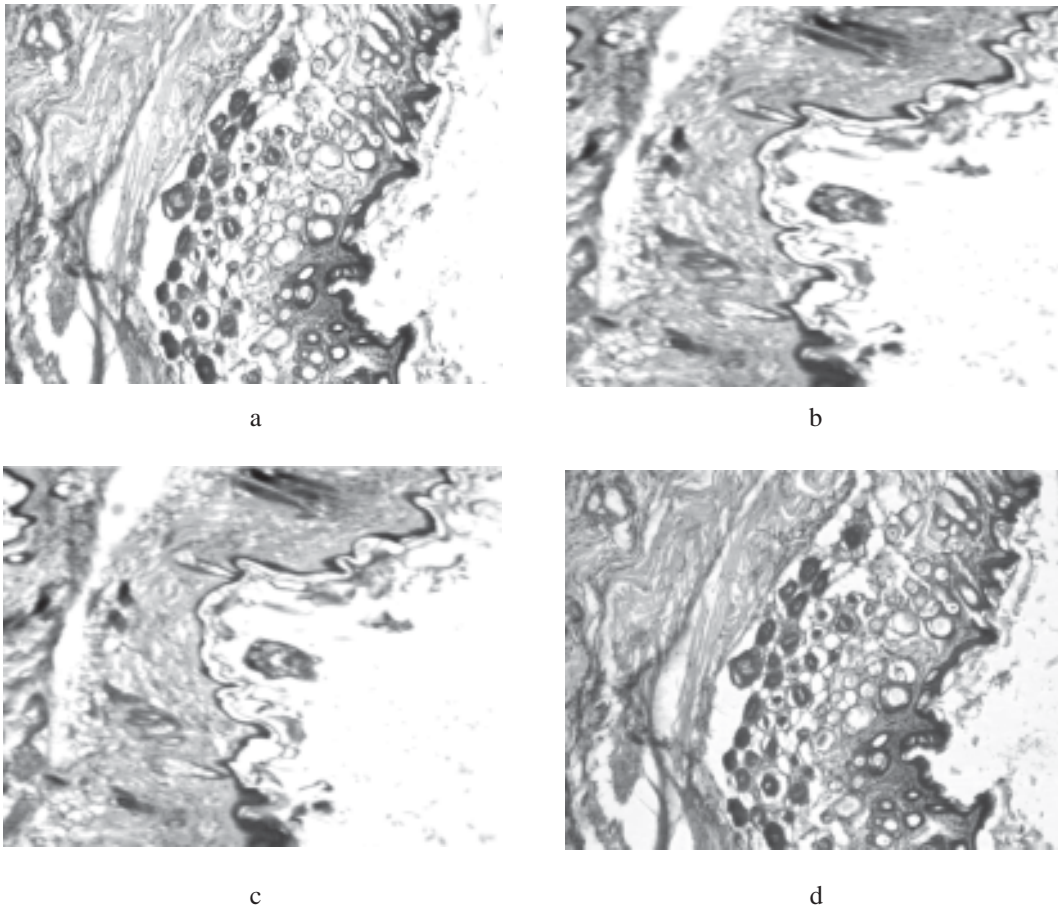


Fig. V. a-d: Histopathological observations
a. Abundant pylosebaceous unit (Group-I); b. Markedly decreased pylosebaceous unit (Group-II);
c. Markedly decreased pylosebaceous unit (Group-III); d. Abundant pylosebaceous unit (Group-IV)

TABLE 1
Intragroup comparison of weight (gm) in all the four groups at different time interval

Group	0 Vs 10 th day		0 Vs 30 th day		0 Vs 60 th day		0 Vs 90 th day		P
	Mean	't' value	Mean	't' value	Mean	't' value	Mean	't' value	
I	0.61±0.24	7.169	1.06±0.25	11.73	1.56±0.43	10.18	2.00±36	15.38	<0.001
II	1.50±0.82	5.16	2.82±1.37	5.81	2.84±0.84	8.92	3.24±0.85	10.02	<0.01
III	1.50±0.74	5.75	3.10±1.90	4.59	3.07±1.42	4.59	3.72±1.34	7.32	<0.01
IV	5.12±2.21	6.55*	5.70±0.43	22.65**	-		-		*<0.001 **<0.01

p - Highly significant; '-' absence of data as animals are either sacrificed or expired

TABLE 2
Effect on SGOT, SGPT, Serum Urea and Serum Creatinine in all the four groups

Group	Mean + SD			
	SGOT (K.U.)*	SGPT (K.U.)*	S.UREA (mg/dl)*	S.Creatinine (mg/dl)*
I	45.60 ± 5.09	42.30 ± 13.15	26.7 ± 2.40	1.25 ± 0.07
II	64.50 ± 12.02	52.00 ± 16.97	54.85 ± 1.20	1.35 ± 0.07
III	59.00 ± 5.66	48.00 ± 0.00	57.75 ± 3.89	1.50 ± 0.14
IV	390.00 ± 0.00	140.00 ± 28.28	9.70 ± 2.26	0.80 ± 0.14

* n=2

exhibited some organic changes. Liver tissue showed congestion and focal necrosis in Group II and III while ballooning and fatty infiltration was observed in Group IV (Fig. III a-e). Marked decrease in Pilosebaceous unit was found in skin tissue of Group II and Group III while no such changes were observed in Group I as well as in Group IV. (Fig. IV a-d)

During the study, one mice in Group II was expired on 38th day, while another mice in Group III expired on 45th day and six mice were expired in Group IV within 40th days.

Conclusion

Intake of ghee and honey in equal as well as unequal proportion showed adverse effects like irritability, dullness and lethargy, weight loss, congestion and necrosis of liver tissue, marked decrease in Pilosebaceous unit of skin and even

death on experimental mice. It corroborates the textual contraindication of this combination (viruddhāhāra).

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COMBINED EFFECT OF LAŚUNAGHRĪTA PĀNA AND LAŚUNA TAILA UTTARAVASTI IN ANOVULATION DUE TO PCOS - A STUDY

Aparna. S. Nair, N. Vijayakumar and S. Shahina Mole*

Abstract: Anovulation may be defined as the absence of ovulation. Anovulation is the cause of infertility in 25-40% of infertile women. An attempt was made to evaluate the combined effect of Laśunaghṛta pāna along with Laśunataila uttaravasti in anovulation. The study was conducted at Govt. Ayurveda College Hospital for Women and Children, Poojappura in 15 diagnosed cases of anovulatory infertility with normally developed ovary and uterus. The result showed that Laśunaghṛta pāna along with Laśunataila uttaravasti is effective in ovulation and also to increase the size of the follicles and in regularising the menstrual cycle.

Introduction

Currently, the term polycystic ovary syndrome refers to a multi-system reproductive-metabolic disorder that has evolved over decades, now designates as the most common endocrinopathy of reproductive age and stands to be further defined in years to come. National Institute of Health (1990) defined PCOS by ovulatory dysfunction plus clinical hyperandrogenism and/or hyper androgenemia without regard to ovarian sonographic appearance. In 2003 in Rotterdam, a consensus meeting the European Society of Human Reproduction and Embryology and the American Society for Reproductive medicine (ESHRE/ASRM) redefined PCOS. Affected individuals must have two out of the following three criteria: 1) Oligo and/or anovulation, 2) Clinical and/or biochemical signs of

hyperandrogenism and 3) Polycystic ovaries with the exclusion of related disorders.

The prevalence of PCOS is 4 to 12 percent in reproductive aged women. Several studies have addressed the prevalence of PCOS among first degree relatives, the likelihood of PCOS in sisters and mothers of affected women has been reported to be higher than those of normal controls. But data also suggested X- linked dominant inheritance. Paternal transmission also suggested by others. Autosomal dominant pattern of inheritance is also suggested by various studies in affected families. Dysregulation of CYP11A gene encoding the cholesterol side-chain cleavage enzyme, the enzyme that performs the rate-limiting step in steroid biosynthesis and the up regulation of other enzymes in the androgen biosynthetic pathway have been suggested on evidence

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basis. In addition, insulin receptor gene on chromosome 19p13.2 may be involved. The findings support a genetic basis for hyperandrogenemia, insulin resistance and impaired glucose tolerance which may account, at least in part, for the familial clustering of this disorder.

Anovulation in women with PCOS is characterized by inappropriate gonadotrophin secretion. Increased GnRH pulse frequency leads to increased production of LH and in turn, elevated LH:FSH ratio supported by the synergistic negative feedback of chronically elevated oestrogen levels and normal follicular inhibin. Increased free oestradiol due to reduced sex hormone binding globulin bears positive feedback relationship to LH. Obesity reflected by higher waist hip ratio and body mass index can have a synergistic effect on PCOS by worsening ovulatory dysfunction, hyperandrogenism and the appearance of *Acanthosis nigricans*. Approximately, 50 to 60 percent of PCOS patients demonstrate profound insulin resistance, which appears to be due to a post binding abnormality in insulin-receptor mediated signal transduction. Enlarged adipocytes from obese individuals overproduce tumour necrosis factor alpha (TNF alpha) and result in increased serine phosphorylation that has been shown to impair insulin receptor tyrosine kinase activity. Hyperinsulinaemia may also be due to decrease in the number of insulin receptors in target tissue due to mutation of insulin-receptor gene or due to auto antibodies to insulin receptors. Stress is often a main factor in the onset of insulin resistance and hyperandrogenemia. Hyperinsulinemia may lead to hyperplasia of the basal layers of the epidermis resulting in the development in *Acanthosis*

nigricans (hyper pigmented change of the crease areas of the skin). Hyperinsulinaemia itself causes hyperandrogenaemia by stimulating theca cells, inhibiting hepatic synthesis of SHBG and by more free IGF-1. The hyperandrogenemia in PCOS is due to the stimulation of cytochrome P450c17 α (the key enzyme in the biosynthesis of ovarian androgens) by insulin and also due to increased LH secretion, suppressed sex hormone binding globulin production and associated high prolactin levels. There is marked impairment of catecholamine-induced lipolysis also.

Prolactin levels may be slightly elevated. Observation says that leptin levels are significantly elevated in approximately 30 percent of lean and obese women with PCOS suggesting a role in its pathogenesis. Leptin, in presence of hyperinsulinaemia, may be responsible for the increased GnRH pulse frequency leading to increased pulse frequency of LH. Other findings that occur in women with PCOS include impaired fibrinolysis as shown by elevated circulating levels of plasminogen activator inhibitor.

Menstrual dysfunction in PCOS women ranges from amenorrhea to oligomenorrhea to episodic menometrorrhagia with anemia. Unopposed oestrogen cause endometrial hyperplasia. While physical constitution is considered, obesity is common even though lean patients are also seen. Obesity is found in over 50 percent of patients. *Acanthosis nigricans* and hyperandrogenism associated with insulin resistance is seen in many obese patients (HAIR-AN). Hirsutism, the presence of coarse, dark terminal hair distributed in male pattern by the conversion of testosterone into dihydrotestosterone by 5 α reductase enzyme

within the hair follicle. This condition refers particularly to midline hair, moustache, beard, chest or inter mammary hair and inner thigh and midline lower back hair entering the intergluteal area. The response of pilosebaceous unit to androgens in these androgen responsive areas transforms vellus hair (fine, nonpigmented, short) that is normally present into terminal hair (coarse, stiff, pigmented and long). Acne occurs as a result of over stimulation of pilosebaceous unit by androgens. Hyperandrogenaemia exerts opposite effects on hair follicles of scalp causing male pattern baldness. Due to low FSH level and androgenic follicular micro environment, follicular growth and maturation are arrested and ovulation cannot occur. Moreover, LH is tonically elevated without any surge. Anovulation would appear to be the primary defect responsible for the failure to achieve pregnancy. Women with PCOS who become pregnant are known to experience early miscarriage also.

Sonographic criteria for polycystic ovaries from the Rotterdam conference include >12 small cysts (2 to 9 mm in diameter) or an increased; ovarian volume (>10 ml) or both. Alterations in LH:FSH ratio, androgen levels, insulin, etc. affects the normal follicular development, ovulation and atresia.

There is no direct mentioning of the disease PCOS in āyurveda. Correlation can be given symptomatologically. Menstrual irregularities can be considered as ārtava vyāpat or yoni roga. For obesity and insulin resistance, sthauyacikitsa and pramehacikitsa can be taken. For symptoms like acne and baldness or mukhadūṣika and khalati, kṣudrarogacikitsa can be incorporated. Anovulation or amenorrhoea

is included under vandhyacikitsa. Naṣṭārtava or ārtavakṣaya is a common symptom in PCOS. This is due to the āvaraṇa of kapha and vāta to the srotas.^a

Puṣpaghni

Under the description of jātarāṇis, Kāśyapa has mentioned one puṣpaghni, the woman affected menstruates in regular interval but is unable to conceive. The other symptoms given are: she has corputent and hairy cheeks. The cause of initiation of Revati is adharma. The symptoms can be considered as the symptoms in PCOS.

So the vyādhikhaṭakas can be considered as follows:

Doṣa	- Kapha, vāta
Dhātu	- Rasa, rakta, meda, and strīśukra
Upadhātu	- Raja,
Mala	- Sveda, roma, etc.
Śrotas	- Rasavaha, ārtavavaha, medovaha and śukravaha.
Śrotoduṣṭi	- Saṅga
Adhiṣṭhāna	- Antarpkala
Mārga	- Ābhyanāra
Agni	- concept of āma - Jaṭharāgni and dhātvāgnimāndya (rasa, rakta, śukra)

Samprāpti

The samprāpti has not described in texts but can be understood in two ways: a) santarpanoṭthajanya and b) aptarpanoṭthajanya.

Santarpanoṭthajanya samprāpti:- Due to sevana of santarpanoṭthajanyanidāna, agni is affected and causing agnimāndhya. In such a condition, if a person takes guru-sniḡdhāhāra it leads to kapha, rasa and medo duṣṭi; the indigestion causes āma formation. This āma is assimilated

as annarasa and is taken into blood circulation and thereby causes śrotorodha. Due to kapha āvaraṇa vātaduṣṭi occurs. Rasaduṣṭi also causes its uttarottaradhātuduṣṭi i.e. raktaduṣṭi along with its updhātu i.e. ārtavaduṣṭi and its malakapha duṣṭi. Further, due to raktaduṣṭi, pitta is also vitiated. So, the over all result is tridoṣa duṣṭi. These dūṣita three doṣas get sthāna-samśraya into antargataphala (ovary). Here, their normal function is hampered resulting into avayavakāryahāni i.e. anovulation or PCO like appearance (abijārtava) and ultimately cause ārtavakṣaya and vandhyatva. (Chart I)

Aptarpaṇothajanya samprāpti:- Due to aptarpaṇotha āhāra-vihāra sevana, vātaduṣṭi occurs. Further, due to mānasikabhāva (cinta) causes rasaduṣṭi which leads to uttarottaradhātu duṣṭi i.e. raktaduṣṭi and also its maladuṣṭi i.e. kaphaduṣṭi. Further, raktaduṣṭi will add to pittaduṣṭi. So, the overall process results into

tridoṣaduṣṭi. As explained in santarpaṇothajanya samprāpti, dūṣita doṣa lodges in ovary (antarphala). Here their normal function is hampered resulting into avayavakāryahāni i.e. abija ārtava (anovulation and PCO like appearance) and ultimately leads to vandhyatva. (Chart II)

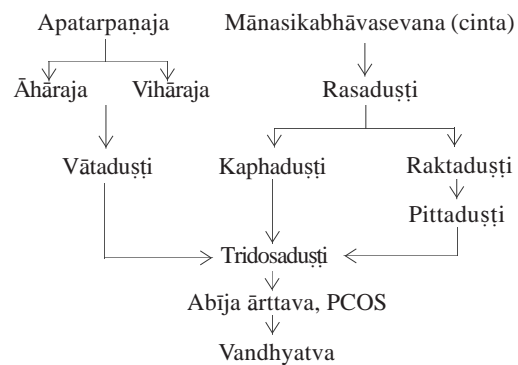


Chart II. Apatarpaṇothanidāna

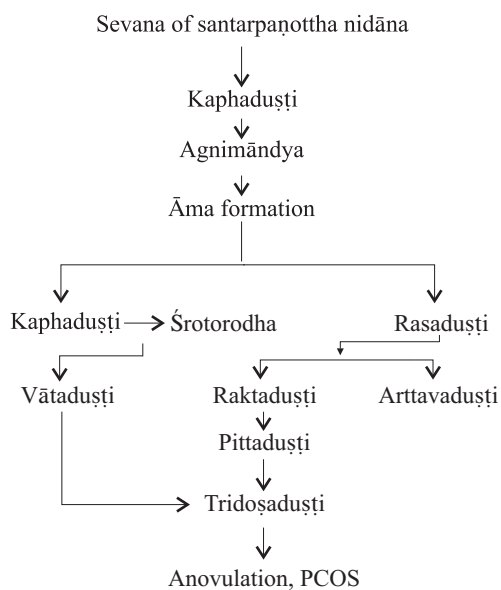


Chart I. Santarpaṇothanidāna

Aims and objectives

- To study the effect of Laśunaghrta pāna with Laśunataila uttaravasti in anovulation due to PCOS.
- To assess the effect in the size of the follicles.
- To assess the effect in regularising the menstrual cycle.
- To find out a treatment without any side effects.
- To develop an inexpensive treatment modality than that of modern technology.

Materials and methods

Selection of cases:- 15 married females who attended the department of Prasūti-strīroga, Govt. Ayurveda College Hospital for Women and Children, Poojappura, Thiruvananthapuram

between the age group of 20-40 diagnosed with anovulatory infertility due to PCOS and with normally developed ovary and uterus.

Research design:- Interventional study - pre and post.

Investigations: - Haematological examinations includes haemoglobin gm%, TC, DC, ESR, Blood group, Rh factor, CT, BT, Blood sugar, Blood cholesterol, Blood urea, VDRL were done. Any previous reports of hormonal assays like T3, T4, TSH, Prolactin, Oestrogen, Progesterone, LH, FSH if available were also considered.

USG of pelvis was done to confirm the anovulatory cycles. USG was repeated after each intervention to assess the status of follicles and ovulation

Selection of the drug:- The yoga explained in the Laśunsakalpa adhyāya in Kāśyapasamhita for the treatment of vandhyatva.

Preparation of the drug:- Laśunaghṛta and taila were prepared as referred to in the Kāśyapasamhita. It was prepared according to snehapākakalpana postulated in āyurveda classics. 1 kg of ghṛta contains the following ingredients:

Ghṛta - 1 kg
Milk - 1 litre
Kvātha - 1.5 kg laśuna with 20 litre water made into 4 litre
Kalka - 1.5 kg laśuna
Avapam - 4 gm daśamūlam

1 litre Laśunataila contains the same ingredients of Laśunaghṛta; except that instead of ghṛta, taila is added. Ghṛta and taila were prepared according to snehapāna vidhi. For pāna and vasti, cikkaṇapāka was used.

Procedure:- The patients satisfied the inclusion criteria were admitted in the hospital after the

date of last menstrual period and after the USG investigation, the medicine was administered. Each patient then was given 3 days udvartana followed by snehapana and continued till the samyaksnigdhalakṣaṇa.

After this, one day svedana and one day utkleśana were done. On the next day vamaṇa was done using vaca, madanaphala, yaṣṭi and saindhava. After the samsarjanakrama, Laśunaghṛta was given in śamanamātra for 7 days followed by mṛdivirecana using Hiṅgutriguṇataila. After 10 days, three āsthāpanavasti with Eraṇḍamūlakvātha followed by uttaravasti with Laśunatailam were done. The uttaravasti was repeated in the subsequent two cycles after stoppage of bleeding. The follicular study was conducted after each uttaravasti at 12th, 14th and 16th days of menstruation. According to the status of follicles the follicular study is repeated till the confirmation of ovulation.

Exclusion criteria:- Known case of genetic abnormality; those who cannot be subjected to the treatment procedures - snehapāna, vamaṇa and uttaravasti; known case of chronic systemic illness; and those who are not co-operative to the study.

Results and discussion

Analysis of amount of bleeding revealed that 73.3% had scanty menstruation and 26.7% had menorrhagia. None of them had moderate bleeding. After the 1st course of treatment 86.7% had moderate bleeding and 6.7% had scanty menstruation and 6.7% had menorrhagia. After the 2nd uttaravasti 13.3% had scanty menstruation and 86.7% had moderate bleeding and after the 3rd uttaravasti all the patient had moderate bleeding for 3-5 days. The effect of treatment in the amount of

bleeding is statistically significant as $p < 0.01$ after each follow up. Laśuna is ārttava-pravartaka and vamaṇa also help in the expulsion of pravṛdha kaphadoṣa. Uttaravasti helps vātanulamana. This could be the reason by which hypomenorrhoea was corrected. Virecana helps in the expulsion of vitiated pitta. Vamaṇa also helps to maintain the normalcy of pitta. That is the reason by which menorrhagia was corrected.

Observation on duration of bleeding showed that 13.3% had 3-7 days of bleeding and 46.7% had 1-2 days of bleeding and 40% had more than 7 days of bleeding before the treatment and after 1st follow up 80% had 3-7 days of bleeding and 20% had more than 7 days of bleeding. After 2nd uttaravasti 73.3 % had 3-7 days of bleeding and 20% had 1-2 days of bleeding and 6.7 % had more than 7 days of bleeding. After 3rd follow up 93.3% had 3-7 days of bleeding and 6.7 % had greater than 7 days of bleeding. The effect of treatment is statistically significant as $p < 0.01$ after each follow up.

While assessing the spontaneous onset of bleeding 20% had menstruation only on induction. 80% had menstrual cycle in more than 35 days. No one had normal duration of 25-35 days. After 1st follow up 33.3% had menstrual cycle at the interval of 25-35 days and 13.3% had only after induction and 53.3% had after 35 days. After 2nd uttaravasti 80% had the interval of 25-35 days and 20% had greater than 35 days. After the 3rd uttaravasti 93.3% had the interval between 25-35 days and 6.7% had their interval more than 35 days. In three patients, menstruation had been coming only on induction; otherwise the interval lasted for

even more than one year. In one patient menstruation had occurred in the 1st follow up itself and in the other two patients menstruation occurred after the 2nd follow up. But in these two patients the interval lengthened upto 3 months after the 2nd follow up. The response on interval of menstrual cycle is statistically significant as $p < 0.05$ after 1st follow up and $p < 0.01$ after 2nd and 3rd follow ups.

66.7% had dyspareunia before the study and it was reduced to 20% after the 1st course of treatment and all the patients were relieved from dyspareunia after the 2nd course of treatment itself. The treatment modality is statistically significant in correcting dyspareunia as $p < 0.01$. This may be due to the vātasamanatva or due to the correction of hormone status.

Before study all the patients had multiple tiny follicles of less than 7 mm. After the 1st course of treatment 33.3% had the follicles of size 8-12 mm and 53.3% had attained the size of 12-20mm. After the second course of treatment 20% had follicular size between 8-12mm and 80% had follicular size 12-20 mm. After the 3rd uttaravasti 20% had the follicular size between 8-12 and 80% 12-20 mm.. The efficacy of treatment in follicular size is statistically significant after the 1st follow up considering $p < 0.01$, after the 2nd follow up considering $p < 0.01$ and after the 3rd follow up as $p < 0.01$.

While assessing the ovulation all the patients had anovulatory cycles on the previous 3 USG scan. After the first course of treatment 13.3% had ovulatory cycle and after 2nd course 80% patients had ovulatory cycle and after 3rd uttaravasti 80% had ovulatory cycle again. One

patient had conceived after the treatment. The study on ovulation was not statistically significant after the 1st course of treatment but it was significant after the 2nd and 3rd course of treatment as $p < 0.01$.

Body mass index distribution showed that only 6.7% of patients come under the group of BMI 19-25 kg/m². 93.3% of patients were in the group of BMI > 25. Anovulation and subfertility are commonly observed in women above or below their ideal body weight. After the 1st follow up 66.7% had their BMI between 19-25. After 2nd follow up 80% had their BMI between 19-25 and after 3rd follow up all the patients had their BMI between 19-25. The study was statistically significant after 1st follow up as $p < 0.05$, after 2nd follow up as $p < 0.01$ and after 3rd follow up as $p < 0.01$. The udvartana, snehapāna, vamana and diet restriction improved the body mass index.

Before treatment all the patients had painless bleeding. After the 1st uttaravasti 13.3% had painful menstruation and after 2nd uttaravasti 53.3% had painful menstruation and after 3rd uttaravasti 73.3% had painful menstruation. The effect of study on painless menstruation was not statistically significant after the 1st follow up but it was significant after the 2nd and 3rd follow ups as $p < 0.01$.

Before study 80% had their waist-hip ratio above normal and in 20% it was normal. After the first course of treatment 53.3% come to normal and after 2nd uttaravasti 73.3% returned to normal and after 3rd uttaravasti 80% returned to normal. The effect was statistically significant after the 1st course as $p < 0.05$ and after the 2nd and 3rd uttaravasti as $p < 0.01$.

66.7% of the patients had *Acanthosis nigricans* before treatment and it got reduced

in 60% of patients after 3rd follow up. *Acanthosis nigricans* is a feature of hyper insulinaemia. The vātahara property of laśuna might have helped it to set it right to a certain extent. Udvartana is tvakprasādāna and helps in weight reduction. A well balanced hypocaloric diet offers the most benefit in treating obese women with PCOS. The response in *Acanthosis nigricans* in the study is statistically significant as $p < 0.05$ after 2nd and 3rd follow ups.

The serum cholesterol was elevated in 80% patients. After 1st course of treatment 93.3% patients had their serum cholesterol less than 200 and after 2nd uttaravasti 86.7% returned to serum cholesterol less than 200 and after 3rd uttaravasti 80% had their cholesterol less than 200. This proves the medohara effect of laśuna.

Laśuna which is rasāyana in nature, promoting the positive health of women, restores bala, svara, varṇa, etc. Since laśuna is used in Unmādacikitsa in Carakasamhita it emphasizes the action on neurons and hypothalamus also. Ārttavarodha, the common manifestation of PCOS is resulted from vātakaphakopa which causes obstruction to srotas. Pitta's normalcy especially in quality is necessary for the maintenance or ārttava. In short it is clear that the pathogenesis include vātakaphakopa and pittakṣaya. So the basic principle in the management of anovulation due to PCOS is to vātakaphaśamana and pittavardhaka. In the present study laśuna is the main drug of action. It is vātakaphaśamana and pittavardhana. "Pittaraktavinirmuktasamastāvaraṇam laśuna" is best; and laśunām prabhāñjānānām. Laśuna is agrauśadha for vāta according to Vāgbhaṭa. But raktapittakara is an adverse effect of laśuna. Since Laśunaghṛta and taila contain milk and as dravadravaya laśuna is taken as kaṣāya form

and as the anupāna of Laśunaghṛta is śarkara and madhu, it did not cause rakta pitta in the present study. Laśuna is considered as amṛta as it is believed to be originated from amṛt (nectar).

Conclusion

The treatment modality including Laśunaghṛta pāna and Laśunataila uttaravasti is found to have a significant effect in regularising the menstrual cycle. It was found effective in achieving a significant increase in the size of follicles and ovulation. One out of fifteen patients was conceived. Study was found effective in attaining a significant reduction in increased BMI, waist hip ratio and reducing *Acanthosis nigricans*. Study has not reported side effects. It should exploit the infinite possibilities of āyurveda for challenging vandhyatva, the multi system disease especially due to PCOS.

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Atra doṣa kaphovayu vaata kaphaisca .”
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PRAMĀṆAŚARĪRA WITH SPECIAL REFERENCE TO DETERMINATION OF STATURE FROM ŚIRAS (HEAD) - A COMPREHENSIVE STUDY

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Abstract: The concept of pramāṇaśarīra based on sva-aṅgula pramāṇa has been given importance in our classics due to the fact that it not only helps in measuring different parts of the body but also helps in assessing the life span, strength, etc. of the ātura and also the svasthapuruṣa. In forensic science, the dimensions of different parts of the human body and skeleton is done with the help of Anthropometry; and is utilized for establishing the identity of a person as well as estimation of stature, age, sex, race, etc. from the body parts. Śiras is said to be the first part of the body to develop in the foetus. The pariṇāha (circumference) of śiras is said to be 32 aṅgulas and utsedha (height) to be 6 aṅgula. A study was conducted on 100 male volunteers between the age group of 25-45 years to determine the stature with aṅgulīpramāṇa of śiras, a comprehensive study of pramāṇaśarīra and to evaluate the relevance of sva-aṅgula pramāṇa in context with Anthropometry. The results showed that there is definite correlation between the stature of an individual and the head measurements.

Introduction

In āyurveda, understanding the functional and structural constitution of the body is imperative. and pramāṇaśarīra can be of help to understand the same. Its importance in anatomical and physiological point of view is well known in āyurvedic as well as modern parlance. Pramāṇaśarīra is explained to play a major role in determination of life span of a person. It is mentioned that the person having appropriate measurements will attain long and healthy life.^{1a,2a} The concept of pramāṇaśarīra has explained by Caraka and Suśruta and later by Vāgbhaṭa. The ācāryas have explained the

pramāṇa of different aṅga-pratyāṅgas of the body.^{1a, 2b, 3}

Pramāṇaśarīra is explained to be utilized in the examinations of a patient.^{1b} It is said that the vaidya must examine the patient's aṅga-pratyāṅgapramāṇa to assess the life span to decide whether the treatment proposed would be fruitful or not.^{2c} Aṅguli is the unit measurement of the different aṅga-pratyāṅgas of the body.^{1a,2a,3} In modern science pramāṇaśarīra is correlated with anthropometry which is useful only for physical measurement in order to assess height, age, sex, etc.^{4a,5} It is an integral part of Forensic science as it helps

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identifying the individual.^{4b} Whereas in āyurvedic concept it provides valuable information regarding life span, strength, etc. of the person.^{1b,2a} In the classics aṅgula pramāṇa of different parts of the body is categorically mentioned but their relation amongst each other has not been widely dealt with. There is a reference in Aṣṭāṅgharḍaya which quotes the relation of the hasta and āyāma of the śarīra.⁶ A few works have already been carried out in this regard but the relation of the head measurements mentioned in our classics with the stature of a person still needed to be explored. Hence the study was under taken.

Objectives: - a) Determination of stature with aṅguli pramāṇa of śiras, b) comprehensive study of pramāṇaśarīra and c) to evaluate the relevance of sva-aṅgula pramāṇa of āyurveda in context with modern anthropometry.

Materials and methods

Subjects:- 100 apparently healthy male individuals in and around of the S.D.M.C.A. & H. Campus were selected for the study.

Instruments:- Measuring tape, measuring calipers

Assessment criteria

Aṅgulapramāṇa:- a) Width of madhyamaparva of madhyama aṅguli or width of proximal Interphalangeal joint of middle finger; b) Width of the palm at the level of metacarpophalangeal joints (2nd - 5th) and dividing it by four; c) Length of the middle finger and dividing it by five.

Inclusion criteria

Healthy individuals ranging from 25-45 years.

Exclusion criteria

Individuals with congenital deformities, history of fractures, pathologies pertaining to bones and metabolic disorders.

Measurements

Stature:- a) It is measured from heel to the vertex. The subject stands erect, keeping heels together, with head oriented in ear-eye plane (Frankfurt plane). Measurement is taken at vertex with hair compressed; b) It is measured from the tip of the toe to the tip of the middle finger, when the person stands on his toes and arms are raised.

Arm span:- It is measured between tips of the two middle fingers when arms are stretched.

Head: - a) Circumference - It is measured by measuring tape by encircling it around the head covering glabella and opisthocranium; b) Head height - It is measured between the vertex and tragon.

Methodology:- The stature, stature with arms raised, arm span and the head measurements were taken in the morning. The measurements were taken in centimeters for standardization as per metric system and then converted into aṅguli pramāṇa based on sva-aṅguli pramāṇa according to three direct and indirect references mentioned in the classics i.e. pramāṇa of one aṅgula was obtained by a) measuring the width of madhyamaparva of middle finger, b) by measuring the width of the palm and dividing it by four and c) by measuring the length of the middle finger and dividing it by five. (Tables 1-4)

Observations

Linear regression equations for determining the stature from head measurements and their conversions are shown in Tables 1-4.

Discussion

According to Suśruta the male attains vitality and maturity at the age of 25 years and female at the age of 16 years. In modern anthropometry

TABLE 1
Linear regression equations for determining the stature from head measurements - Right & Left hands

Assessment Criteria	Stature (heel to the vertex) in aṅgula pramāṇa (Y)		Stature (tip of the toe to the tip of the middle finger, when the person stands on his toes & arms are raised) in aṅgula pramāṇa (Y)	
	HC* in aṅgula pramāṇa (X)	HH* in aṅgula pramāṇa (X)	HC* in aṅgula pramāṇa (X)	HH* in aṅgula pramāṇa (X)
1. Width of proximal inter-phalangeal joint of middle finger:				
a. Right hand	$Y = 55.601 + (0.907 \times X)$	$Y = 41.928 + (7.039 \times X)$	$Y = 71.085 + (1.536 \times X)$	$Y = 101.781 + (3.001 \times X)$
b. Left hand	$Y = 60.196 + (0.775 \times X)$	$Y = 42.053 + (7.066 \times X)$	$Y = 74.924 + (1.432 \times X)$	$Y = 100.686 + (3.291 \times X)$
2. Width of the palm at the level of Metacarpo-phalangeal joints (2 nd -5 th) and dividing by 4				
a. Right hand	$Y = 43.611 + (1.203 \times X)$	$Y = 34.950 + (7.840 \times X)$	$Y = 42.765 + (2.354 \times X)$	$Y = 72.309 + (7.217 \times X)$
b. Left hand	$Y = 40.779 + (1.303 \times X)$	$Y = 35.328 + (7.821 \times X)$	$Y = 42.572 + (2.371 \times X)$	$Y = 68.656 + (7.971 \times X)$
3. Length of the middle finger and dividing it by five				
a. Right hand	$Y = 14.851 + (2.213 \times X)$	$Y = 22.162 + (10.418 \times X)$	$Y = 4.642 + (3.610 \times X)$	$Y = 31.957 + (14.510 \times X)$
b. Left hand	$Y = 14.132 + (2.237 \times X)$	$Y = 421.817 + (10.490 \times X)$	$Y = 18.343 + (3.223 \times X)$	$Y = 43.269 + (12.887 \times X)$

*HC - Head Circumference; HH - Head height

TABLE 2
Conversion of centimeter to aṅguli - Right & Left hands

Stature	A	B	C
Aṅguli			
a. Right hand	1.963cm & SD 0.104 cm	2.076 cm & SD 0.128 cm	1.927 cm & SD 0.195 cm
b. Left hand	1.951cm & SD 0.105 cm	2.062 cm & SD 0.127 cm	1.920 cm & SD 0.196 cm
Standing			
a. Right hand	84.431 & SD 3.690	79.785 & SD 4.308	86.742 & SD 7.850
b. Left hand	84.928 & SD 3.801	80.325 & SD 4.269	87.043 & SD 7.959
Standing with arm raised			
a. Right hand	119.902 & SD 3.311	113.582 & SD 5.748	122.909 & SD 15.228
b. Left hand	120.654 & SD 3.370	114.511 & SD 5.652	123.399 & SD 10.508
Arm span (stretched)			
a. Right hand	85.520 & SD 4.244	80.866 & SD 4.777	87.965 & SD 8.531
b. Left hand	86.044 & SD 4.317	81.395 & SD 4.707	88.271 & SD 8.634

TABLE 3
Conversion of centimeter to aṅguli - Right & Left hands

Parts of the body	A	B	C
Head circumference			
a. Right hand	31.775 & SD 1.332	30.079 & SD 2.035	32.485 & SD 3.006
b. Left hand	31.929 & SD 1.291	30.346 & SD 1.968	32.595 & SD 3.044
Head height (vertex- tracion)			
a. Right hand	6.039 & SD 0.401	5.719 & SD 0.428	6.199 & SD 0.693
b. Left hand	6.068 & SD 0.418	5.753 & SD 0.433	6.218 & SD 0.700

TABLE 4
Ranges of aṅgulapramāṇa by all the three parameters - right and left side

Description	Range of aṅgulapramāṇa (in aṅgula)		SD between (in aṅgula)	
	Right	Left	Right	Left
1. Height	72.341 - 102.320	72.636 - 102.320	3.690 - 7.850	03.801 - 7.959
2. Height with standing on toes with arms raised	101.395 - 146.271	105.454 - 146.271	3.311 - 15.228	3.370 - 10.508
3. Arm span	72.390 - 112.050	74.272 - 112.050	4.244 - 8.531	4.707 - 8.634
4. Head circumference	26.325 - 38.032	26.729 - 38.032	1.332 - 3.006	1.291 - 3.044
5. Head height	5.117 - 8.055	4.980 - 8.055	0.401 - 0.693	0.433 - 0.700

also the sample is selected between 25-50 years of age. This verifies the viability of Suśruta's opinion. There is a slight decrease in the stature as the age progresses. The decrease is generally regarded to be approximately 6 mm per decade after the age of 30 years because the elasticity of the intervertebral discs and cartilages and muscle tone decreases with age. Then there is tendency of the stature to reduce during the period of getting up to going to bed. This decrease is also due to reduced elasticity and compression of the intervertebral discs and joint cartilage. Generally the reduction is 1.5-2 cm. But it may be up to 10 cm also if heavy loads are carried, usually seen in labourers. So, all the measurements were taken in the morning. Of the three parameters used for measuring the

aṅgula pramāṇa, the aṅgula pramāṇa of right side ranges from 2.34 -1.56 with SD 0.104 - 0.195 cm and left side ranges from 2.34 - 1.56 with SD 0.105- 0.196 cm. Measurement taken with aṅgula pramāṇa measured from the width of the proximal interphalangeal joint was found to be more accurate of the three in all the parameters. The ranges of aṅgulas of height, height with standing on toes with arms raised, arm span and head height of all the three parameters are shown in Table 4.

Conclusion

Of 100 volunteers selected, the maximum was between the age group of 25-30 years. The pramāṇa of an aṅgula calculated by three methods was found to be different in each but not much different between the hands. For the

right hand, the range of aṅgula pramāṇa by first method found between 1.7-2.1 cm with a standard deviation of 0.104 cm., by second method, it found between 1.7-2.325 cm with a standard deviation of 0.128 cm. and by third method, the range was from 1.56-2.34 cm with a standard deviation of 0.195 cm. For the left hand, the range by first method found from 1.7-2.1 cm with a standard deviation of 0.105cm., by second method from 1.7- 2.3 cm with a standard deviation of 0.127 cm. and by third one, from 1.56-2.34 cm with a standard deviation of 0.196 cm. The measurements taken with the help of aṅgula pramāṇa by using the first method was found to be more accurate than the other parameters. The result of the study, to a greater extent, proves the viability of the concept of sva-aṅgula pramāṇa śarīra. There is a definite relation between the head measurements and stature. The measurements of the head viz. the circumference of the head and the height of the head can be used to determine the stature by using the equations in the observation.

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ROLE OF ĀYURVEDA IN CORONARY HEART DISEASES

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Abstract: Coronary Heart Disease (CHD) stands as the prime one among CVDs caused by occlusion of coronary arteries, supplying blood to the cardiac muscles. The samprāpti of hṛdroga explained in āyurvedic classics well describes the CHD pathogenesis. This paper briefly discusses the role of ayurveda in coronary heart diseases.

Cardiovascular disease (CVD) is the number one cause of death worldwide¹ and it covers a wide array of disorders, including diseases of the cardiac muscle and of the vascular system supplying the heart, brain, and other vital organs.³ It is predicted that CVD will be the leading cause of death and disability worldwide by 2020 mainly because it will increase in low- and middle-income countries.¹ By 2001, CVD had become the leading cause of death in the developing world, as it has been in the developed world since the mid 1900s.¹ Nearly 50 percent of all deaths in high-income countries and about 28 percent of deaths in low and middle-income countries are the result of CVD.¹

Coronary Heart Disease (CHD) stands as the prime one among CVDs,³ which results due to the occlusion of coronary arteries, supplying blood to the cardiac muscles.³ The samprāpti of hṛdroga explained in āyurveda classics well describes CHD pathogenesis, in which vitiated doṣas get localise in hṛdaya and vitiates rasa which eventually results in hṛdroga.⁵

All the causes that results in doṣa-dhātu duṣṭi and their sthānasamśraya in hṛdaya can be grouped under the nidāna of hṛdroga. These nidānas include modifiable and non modifiable causes.⁴ Vegadhāraṇa (suppression of urges) is described as one important nidāna among them and in vātavaiguṇya due to vegadhāraṇa more manifestations of hṛdroga results as compared to other nidānas of vātaduṣṭi.⁶

CHD in āyurvedic perspective

As cikitsa is nothing but samprāptivighaṭana, exploring the pathogenesis of CHD through āyurveda is mandatory. The samprāpti explained by Suśrutācārya regarding hṛdroga is very applicable to the present understanding of pathogenesis of CHD. In the pathogenesis of CHD, the predominance of vāta, pitta and kapha doṣas is seen at successive levels. The first stage of 'fatty streak' in blood vessels can be treated as a stage with kapha predominance as kaphaja āharavihāra is the main cause for initiation of atherosclerosis or dhamanī-praticaya. These early lesions most often seem

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to arise from focal increases in the content of lipoproteins within regions of the intima. Due to the over-indulgence of kaphakara āhara vihāra there will be vitiation of kaphadoṣa. This kapha vitiation reduces the jaṭharāgni and which will result in āma formation and reduction of dhātuvāgni. This will cause samarasa and which ultimately gives rise to sama-medodhātu. The formation of samarasa will result in rasavaha śrotoduṣṭi and since hṛdaya and rasavahi dhamanis or daśadhmanis are the root (mūla) of rasavahaśrotas,^{5,6} samarasa and sama medodhātu ultimately vitiates hṛdaya and hṛdgatadhmanis. In the later stages of dhamanīpraticaya due to the sustained use of nidānas, formation of samarasa, malarūpa kapha and sama-medodhātu continue. This makes gradual accumulation of fatty streak and formation of early atherosclerotic lesions (dhamanīpraticaya). The dhamanīpraticaya in hṛddhamanis (coronary arteries) results in hṛddhamanīpraticaya (coronary atherosclerosis). Hṛddhamanīpraticaya causes hṛddhamani saṅga. Since vyāna is situated in hṛdaya, this causes vyānamārgarodha or vyāna mārgāvaraṇa. Hṛddhamanīsaṅga and vyānamārgarodha results in disturbed hṛtpeśiṣaṅga. Due to any triggering physical or mental stress acute vyānavāyukopa happens and it results in thrombi or emboli formation ensuing in Dhātupākam due to diminished nutrition to cardiac muscles. In this stage, since there is signs of disseminated inflammation, we can see the predominance of pittaduṣṭi. In the later stage dhātunāśa happens (due to miocardial infarction, left ventricular dysfunction, etc.) and this stage is with a predominance of vātadoṣa.

Āyurvedic management and prevention

As far as management of CHD is considered,

āyurveda has much role to play in preventive and curative aspects as compared to acute management, since acute management is well established in conventional system with very sophisticated methods like defibrillation, etc. Among the śodhana and śamana type of managements it is more śamanasādhya. Among the śodhana procedures vama is contraindicated in hṛdroga due to the nature of the disease itself.⁷ In hṛdroga, vāta is in pratilomagati and vama is a pratilomaśodhana process. Apart from this, hṛdaya is considered as one among the sites where svedana is contraindicated or mṛdusvedana only is indicated.⁶ Since svedana is essential for dravikaraṇa of kapha,⁷ the inability to perform svedana as a pūrvakarma also may make hṛdroga as a disease not suitable for vama. There is additional reference that, performing vama in vamanānarha persons, will lead to hṛdroga.⁷ Considering the utility of other śodhana procedures also, we can find that they also will not be good for a patient having fully manifested hṛdroga.⁸ Caraka explains that the medicines for curing hṛdaya related diseases should be hṛdyā, śrotośodhana, manaprasādana and aujaṣya.⁶ A number of drugs like arjuna, sarpagandha, laśuna, guggulu, sthirā, puṣkaramūla, punarnava, śuṅṭhi, triphala, guḍūci, kaidarya, citraka, marica, pippali, haridra, śigru, gokṣura, uṣamalari, amaḷvetaśa, viḍaṅga, palāṅḍu, putina, cakramarda, kāsamarda, śaṅkhapuṣpī, jaṭāmāmsi, brāhmi, etc. are very much beneficial for treating CHD as they possess cardio protective properties. Among these drugs like laśuna (*Allium sativum*) possess fibrinolytic, antithrombotic actions; inhibits platelet aggregation, reduces release of arachidonic acid, reduces thromboxane

production, prolongs bleeding time, hypolipidemic, hypoglycemic, diuretic and antioxidant action.⁸

The drugs having pramādhī guṇa, also may play a vital role since they clear the sūkṣmasrotases by virtue of their property. The action of pramādhī dravyas should be interpreted in a way that along with preventing malasañcaya in raktavaha srotas, they will be checking the inflammatory processes happening in them and thereby preventing thrombi formation from plaques.

Prevention of CHD

The preventive measures in CHD include nidāna parivarjana, proper dinacarya and ṛtcarya, rasāyana seva, antenatal care, childhood care and yoga therapy. Following proper dinacarya, ṛtcarya and svasthavṛtta explained in āyurvedic classics works as an aiding tool in CHD prevention and management. The rasāyanas like śilājatu, Brāhma rasāyana, Āmalaka leha (Cyavanaprāśa) and Agastyarasāyana can be beneficially employed in hṛdroga or CHD treatment.⁷ Since in most of the CVD, associated respiratory complaints are evident, Agastyarasāyana is an excellent drug of choice as it is indicated in kāsaprakaraṇa itself. The possibilities of constructive utilisation of garbhiṇīcarya (antenatal care) also should be researched properly in this aspect. In the garbhiṇīcarya, sthīrāsīdha kṣīra is explained to be given in the third month of pregnancy.⁹ From the classics, it is understood that the origin of hṛdaya takes place in foetus at this period only.⁶ In view of the fact that sthīrā is a drug of choice in cardiac diseases, which is explained in the management of hṛdgata-vātakopa,⁷ this garbhiṇīcarya should have a definite role in preventing congenital anomalies of heart or cardiovascular system.

Every care should be taken to prevent excess intake of fatty foods in children. As the initiation of formation of atherosclerosis take place in around 10th year of child hood itself,⁴ the guardian should be careful in the āhara and vihāra of their children. Appropriate use of medicines like Rajanyādi cūrṇa will reduce the risk as it is grahaṇīdīpana and māruta anulomana.⁷

Yogāsana and prāṇāyāma have got a key role in CHD management. In day-to-day life keep self relaxed and free from anxiety, nervousness, tension and restlessness. Yoga helps coping with stress so that no need of depending on smoking or eating unhealthy food stuff. It also help to contempt from within. Smoking should be completely stopped as it constricts the arteries. Meditation and prāṇāyāma has been scientifically proven to be beneficial for hypertensive people. If the blood pressure rises very high, ujjayi prāṇāyāma can be done while lying for about 3-4 minutes, nāḍīśodhaka prāṇāyāma, ditali prāṇāyāma and bhrāmari prāṇāyāma can also be beneficial. Along with these loosening exercises and breathing practices also will be helpful

Recommended āsanas:

- Sūryanamaskāra (Sun salutation) - activates the whole body.
- Pavanamuktāsana (Relieving the flatus) - wind reliever, corrects malfunctioning of the abdomen. Make 4-6 rounds.
- Uttānapādāsana (Raising the legs) - Helps reduce fat.
- Śāvāsana (Corpse pose) - should be done twice or thrice daily as it normalizes the blood pressure.¹⁰

Conclusion

- Cardiovascular disease (CVD) is the

number one cause of death worldwide and CHD is prime among them

- Hṛdrogasamprāpti well explains CHD pathogenesis
- Predominance of kapha, pitta and vāta can be seen at successive levels of CHD pathogenesis
- Āyurveda has chief role to play in preventive and curative aspects of CHD
- The auśadha should be hṛdyā, srotośodhaka, manaprasādaka and aujaśya
- The preventive measures are more significant

As mentioned in the Vaidyakīya Subhāṣita Sāhitya, pariśrama (exercise) and mitāhāra (healthy food habit) has got key role in the prevention and management of coronary heart disease.^b

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- b. परिश्रमो मितहारो भूगतावश्चिनी सुतौ तावनादृत्य नैवाहं वैद्यमन्यं समाश्रयेत् ।
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DOCTOR-PATIENT RELATIONSHIPS IN ANCIENT INDIAN VETERINARY LITERATURE

K.G. Sheshadri*

Abstract: Ancient Indian veterinary literature is replete with descriptions of treatment of diseases of animals and birds as well as their characteristics. The veterinary physicians who treated them have been kind in treating these animals for their diseases and healing their wounds. In this regard, they maintained a close relationship with the animals that glimpses of such doctor-animal patient relations have been gleaned from ancient texts related to cows, elephants, horses, birds and so on. Instances of treating them by close examination of eye diseases, those related to pre-natal and pregnancy care, war wounds and so on are discussed. Modern day veterinarians owe much to the intricate details given by these ancient texts in the treatment of various animals that still further research on such relations had with animals by these practitioners needs to be gleaned from untapped sources.

Introduction

Ancient Indian sages are credited with their remarkable observations and vision of nature that have been recorded in their literature. They lived harmoniously with the creepers, plants, animals and birds in their sacred hermitages. Ancient Indian veterinary texts deal much about the diseases, diagnosis and treatment of several animals like cows, elephants, horses and birds. The present paper tries to explore the relationships of these ancient veterinarian doctors and practitioners with the animals they cured and treated.

Doctor-animal relations in Vedas, Epics and Purānas

Several hymns of the Vedic texts are related to the behaviour of animals and birds. Cattle were

the most prized possession and hence were regarded sacred. They were revered in several hymns of the Vedic texts with some dealing on the diseases of cow. In this regard the Ṛgveda (RV)¹ gives prayers to Lord Rudra for sparing people, domestic cows and horses [I.114.8]. Agnihotra should also be performed for sanitizing the atmosphere. RV [10.169.1] advocates that cows should enjoy salubrious pastures where pleasant breeze is flowing and peacocks are dancing. One must allow cows to feed themselves on rations that provide energy to body. Drinking water should ensure supply of good quality to cows that even humans would gratefully consume. RV [6.53.9] states that the divine physicians are well versed in Veterinary Science and should be honoured.

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Owing to their knowledge animals such as cattle can be well fed and thus grow well. The Atharvavedasamhita² [12.4.20-25] in several verses stresses that community should take the veterinarian's offer for helping to care for cows. By not taking their services even cows are put to great discomfort. These hymns thus show how great were the ancient cow-veterinarians and sages as they state that those who ignore the advice of such practitioners seriously suffer the ill effects on their cattle wealth. Sage Vasiṣṭha himself revered the divine cow Kāmadhenu. Sage Tvaṣṭā Garbhakartā of RV [10.184] is said to have caused pregnancy in animals according to the Taittirīya Brāhmaṇa suggesting that may be he was a veterinary physician.

The Gobhila Gṛhyasūtra³ [III.6] says that goyajña and asvayajña were performed for prosperity of animals. The Jaiminīya Brāhmaṇa⁴ [III. 193-94] mentions how Indra was praised by śiśumāra [a dolphin]. The Taittirīyasamhita⁵ [Kaṇḍa 5.3.11.12] states that the expert dissects the body carefully with sword-like sharp instruments, separates different organs, keeps them (on the table) unutilated for study and use.^a

However, many details on the doctor-animal relations cannot be gleaned from Vedic literature except for these hymns wherein one has to glean the visions of these sages to have such intimate relation with fauna.

The Rāmāyaṇa⁶ has several instances of sages nursing animals and birds. In the Kiṣkindākāṇḍa [LX 15 – 20], the text speaks of great sage Niśākara wherein all animals came to visit his hermitage - 'Bears, śmarā (a species of deer), tigers, lions, serpents of various kinds surrounded him on all sides as living beings would follow a giver'.^b

Then, finding the sage having reached the hermitage, the animals left for their dens. Sampāti, Jaṭāyu's brother had been treated by the sage. The text also speaks of the āyurvedic knowledge possessed extensively by aged vānara physician Suśeṇa.

The Mahābhārata⁷ also is vast in its description of such sages who looked after animals. The Ādi Parva [Khāṇḍavadāha Parva, CCXXXI. 15 -17] mentions about sage Mandapāla who became a Sārṅgaka bird and married Jarita begetting 4 sons namely Jaritāri, Sahasrikka, Stamvamitra and Droṇa. The Śanti Parva [CCLXI – CCLXIV] of same text narrates in detail about sage Jājali who meditated without giving any disturbance to the young ones of Kulīṅga birds that had hatched in the nest constructed by the birds in his matted locks. The text also mentions as to how the various veterinary practitioners carefully treated the horses and elephants that took part in the Kurukṣetra war.

These military veterinarians had to be cognizant of the common causative agents of wounds and foreign bodies like weapons (arrows, spears, swords and so on), missiles, trees, metals, poisonous chemicals that were in use during the great war. Locating the signs of inflammation, they had to examine the skin, viscera, bone, arteries and other organs of the wounded animals and extract the foreign bodies by various veterinary surgical instruments like simhamukha, makaramukha, karkaṭamukha, bhṛṅgamukha, kaṅkamukha and so on.⁸ Extracting highly penetrated weapons from the bodies of these horses and elephants would be tough as the practitioner had to bind their legs, slightly make them unconscious for giving treatment and then treat the wounds by extracting these foreign bodies. The

Mārkaṇḍeya Purāṇa⁹ [I.21-22] mentions about the 4 sons named Piṅgākṣa, Vibodha, Suputra, Sumukha of a great bird Droṇa who were well versed in Vedas and dwelled in the Vindhya Mountains. They were well nursed in their young age by sage Śamika [III.43].

The Skandha Purāṇa¹⁰ [IV. ii.79.1–12] mentions as to how Lord Śambhu called the young ones of the parrot whose mother passed away during delivery and father eaten away by a hawk. These details reflect as to how in the Puranic age, animals were taken care of by society. The Bhāgavata Purāṇa¹¹ [Skandha X] mentions about sage Saubhari who resorted to a severe penance of 12 years immersed in the waters of the river protecting the fishes by his spiritual practices when Garuḍa caught hold of the large leader of the fishes, he cursed him.

Doctor - animal relations in post-Vedic texts

Several Post-Vedic texts reflect on the relationships between ancient veterinarians and the animals treated by them. Hungry, thirsty, tired, deformed or diseased cattle should never be yoked and used for ploughing according to sages Atri and Parāśara.¹² Kauṭilya's Arthaśāstra¹³ states that cattle should be grouped into herds and herdsmen were expected to have full knowledge of common ailments and remedies. He mentions the functions of veterinary doctors for elephants, horses, cattle; the functions of superintendents of these animals. Veterinary surgeons had to examine these animals and supervise their treatment including their bath, feeding, diet, health care and so on.

The king Aśoka had set up well equipped veterinary hospitals, and one of his Edicts commands that, wherever there were no healing

herbs, be brought from elsewhere and planted near them so that the animal could be treated with all due care.¹⁴ Kālidāsa's Ābhijñāna-śākuntalam¹⁵ describes as to how sage Kaṇva protected several deer, rabbits, and other fauna that frolicked his hermitage.

Although such information is dealt in the above literature, the true picture of the doctor-animal relationships is revealed in ancient Indian veterinary texts. One among such texts is the Hastyāyurveda¹⁶ of Maharṣi Pālakāpya that deals on elephants' diseases and their remedies. It is in the form of a discourse between king Romapāda and sage Pālakāpya and divided into four sections named Mahārogasthāna, Kṣudrarogasthāna, Śalyasthāna and Uttarasthāna. In various parts of the text the sage advocates nursing of elephants during the six seasons as in the Ṛtucaryādhyāya [Chap XV]. These have been dealt in literature earlier.¹⁷

The Akṣirogādhyāya [Mahārogasthāna, XVIII] gives great details about the causes and diagnosis of several eye diseases.¹⁸ Regarding the cure of eye diseases, the text states that the practitioner should tie the tusks, bind the eyes of elephant followed by application of a mixture of decoctions of various medicinal herbs, salts, honey or by applying collyrium (añjana) after surgery if needed. Even more interesting is the mention of netratarpaṇa (medicated oils applied to cure the eyes) or netravasti (administering enemas). In some cases, elephants under pregnancy suffer from a condition of a dead foetus remaining within the uterus. The animal struggles due to this difficult labour and thus removal of foetus by instruments without affecting the mother elephant involves severe problems.

In the chapter titled Mūḍhagarbhāpanayanam, the text deals on such a case of dead foetus and its removal.¹⁹ It states “using a decoction of clarified butter, śāli rice, dhanvana [*Grevia tilifolia* Vahl], one must worship the right portion of trunk and also genital openings, slowly instilling confidence in elephant and slowly injecting one’s hand into the womb of elephant one must pull out the dead foetus. If it cannot be removed from the normal way, one must use instruments, slowly allowing the excision of obstructing parts, impotent, cruelly or hurriedly one must stitch the parts to protect it and removing the others.^c

The Kṣudrarogasthāna [Chp.43] of the text devotes an entire chapter to the treatment of old age of elephants and their daily regimen. Details of anointing its head with medicated oils, making its sleeping place soft with spread of darbha (*Imperata cylindrica*) or other grasses deserve mention in this context.

The Uttarasthāna (Bastidānakathana, Chp.5) describes about 9 kinds of enemas to be administered that increase digestive fire, strength, rasa, blood, flesh, fat, bones, marrow and semen.²⁰ The yantra used for administering them is described. Even more interesting is the treatment of elephant for doṣas of the belly, or if it does not pass faeces. The section on Dantoddhāraṇa [Chap. 34] describes extraction of tooth/tusks of elephants interestingly by means of needles and other yantras. The chapter 30 discusses elephant surgical instruments in detail while Chapters 22 - 23 describe wound treatment of the 108 vital parts of the elephants. Although, all these go to show the intricate degree to which ancient elephant veterinarians knew about the elephants they do also show us as to how close they must have had a

relationship with the animal so as to know all aspects of its details. This is evident from the Mātaṅgalīla²¹ of Nīlakaṇṭha which endorses the hospitality of the great sage Pālakāpya who played with the elephants, roamed with them through rivers, mountains learning their behaviour [I.19].

The Aśvavaidyaka²² of Jayadatta dated to 15th c. A.D., a text devoted to treatment of horses, gives details of nursing of new born colts and the mother horse in chapter titled Sūtikopacāra. The details of cleaning the uterus, removal of placenta, cleaning the bowels by giving pratipāna (counter drench), pacifying vāta doṣas in the abdominal cavity by administering ghee [X. 6-10] all deserve extreme mention in this aspect.

Sage Śālihotra’s Aśvaśāstra deals on clear examination of eye diseases in horse giving various characteristics that tell us as to how ancient eye specialists and Ophthalmologists treated eyes of horses.²³

The Aśvaśāstra of Abhinavacandra, another text on horses states that veterinary practitioners should not impart the horse lore to wicked people or those who did not look after horses affectionately [X.1].²⁴ Likewise it states that a king ought to punish a veterinary practitioner who does not treat the diseases of horses properly [X.5].

Another Kannada text namely the Lokopakāra²⁵ of Chāvuṇḍarāya II dated to 1025 c. A.D., mentions about the removal of dead foetus in cattle and buffaloes as well as remedies for the easy removal of placenta after delivery of calf. Kumāravayāsa in his Bhārata²⁶ [Bhīṣma Parva 5.40] gives details as to how ancient doctors treated war wounds removing all inflammation. Though he does not explicitly mention about

animals, it can be inferred that similar treatment was given to cure the war wounds of animals like horses and elephants.

Another veterinary text namely the Śyainika Sāstra²⁷ of King Rudradeva of Kumaon discusses on diseases relating to hawks and falcons. The treatment of diseases of falcons and hawks based on examination of their eyes is worth mentioning in this context [V. 53-59]. Interestingly the treatment of cataract of eyes of falcons giving details of the medicinal decoctions that had to be applied in eyes and bandaged for 3 days is given by the Pakṣīśāstra²⁸ by Tanjore king Serfoji.

It may also be interesting to note that ancient veterinarians offered similar ayurvedic therapies such as nasyakarma, svedana and so on to animals also. Such a treatment of steam bath for a cheetah is described in the Yujanāma,²⁹ a medieval text. The text is a Marathi translation of a work gathered by the king Serfoji of Tanjore. It states that the cheetah should be seated on the cot and steam kept under it with full screening on all 4 sides. Thereafter one must apply oil over its body with a boiled herbal decoction applied over its feet and so on.

Treatment of old age in animals and birds was also a part of these ancient veterinarians that has been treated in literature.³⁰ All these texts go to show how widely ancient Indian veterinarians cared for the animals with an intimate relationship so as to cure them.

Conclusions

Ancient Indian literature is rich in the descriptions of animal diseases and their treatment. It is astounding to find vivid descriptions of sages nursing these animals and attending to their needs by good veterinarians.

Modern day veterinarians owe much to the intricate details given by these texts in the treatment of various animals that need protection. There are several orphanages and Veterinary hospitals for disabled, handicapped, wounded, orphaned, diseased elephants, horses, birds and so on in the world. An interdisciplinary research into modern day doctor-animal relationships with that of ancient Indian texts as well supported by case studies would be fruitful in this regard.

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- तमृक्षाः सृमराः व्याघ्राः सिंहा नानासरीसृपाः। परिवार्योपगच्छन्ति वै युयुः।।
- सर्पिषा कल्कमिश्रेण शाल्मल्या धन्वनस्य च। दक्षिणं करमभ्यर्च्य योनिद्वारं च सर्वशः। विश्वासयित्वा सर्वस्वं यन्त्रयित्वा च हस्तिनीम्। प्रवेश्य हस्तं योनौ तु गर्भमार्गेण वा हरेत्।। ऋजुमार्गेण नाऽगच्छेतं तु शस्त्रेण निर्हेत।। छित्त्वा तथाऽऽनु-पूर्व्यण तस्याङ्गानि पृथक् पृथक्। अक्लीबो दारुणो भूत्वा त्वरमाणो जितेन्द्रियः।। सूतिकाक्षणार्थं तु निःशेषं निर्हेत्तु तं ।।

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CONTEMPORARY INFECTIOUS FEVERS

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The recent resurgence of infectious disease mortality marks a third epidemiologic transition characterized by newly emerging, re-emerging, and anti-biotic-resistant pathogens in the context of an accelerated globalization of human disease ecologies. The changes in the landscape of human infectious diseases are a consequence of the continuing interplay of co-evolution between microbes and man. The cardinal difference between Allopathy and Ayurveda would be the almost absolute focus on the soil in contrast to the accepted western approach of focusing more on the microbes. This book contains papers presented at the 50th Ayurveda Seminar on 'Contemporary infectious fevers', held at Kottakkal on October 2013.

EXPLORING MUSCULAR DYSTROPHY IN ĀYURVEDA

Ravishankar K* and Yogeeshha Acharya**

Abstract: Muscular dystrophy appears in infancy or childhood causing weakness of muscles and poor ability in motor functions. The types can vary depending on age, muscles affected and clinical manifestation. All forms of muscular dystrophy are progressive as the muscles get weaker and eventually lose the ability to walk. Āyurveda doesn't explain directly about this clinical manifestation. There is need of exploring the details scattered to understand the pathophysiology. Muscular dystrophy is treated in āyurveda based on the concepts of kārṣya, māmsadhātu, bṛmhaṇa and rasāyana. This paper briefly discusses muscular dystrophy in āyurvedic perspective.

Introduction

The term dystrophy indicates abnormal growth. The word is derived from the Greek 'trophe' which means nourishment. Muscular Dystrophy is distinguished from neuro-muscular diseases by four criteria: primary myopathy, genetic basis, progressive and degeneration of muscle fibre.^{1a}

Muscular dystrophy is a group of inherited diseases which are progressive in nature.^{2a} They all cause muscle weakness and muscle loss. Some forms of muscular dystrophy appear in infancy or childhood. Others may not appear until middle age or later. The types can vary depending on persons, muscles affected and the symptoms manifested. All forms of muscular dystrophy grow worse as the person's muscles get weaker. Most people with muscular dystrophy eventually lose the ability to walk.

In Duchenne muscular dystrophy, young boys start walking very late and find difficulties to

get up from the floor (Gower's sign).^{2b} Gower's sign is often evident by the age of 3 years and is fully expressed by the age 5 years or 6 years. Intellectual impairment may also be present. In Becker muscular dystrophy, weakness may be limited to the quadriceps (muscles in the front of the thigh). Infants with myotonic dystrophy can have severe trouble in breathing and swallowing and may not survive the neonatal (newborn) period. The blood level of creatine kinase^{1b} (a protein released with muscle breakdown) is abnormally high early in Duchenne muscular dystrophy. As the disease progresses and muscle mass decreases, the level of creatine kinase decreases.³

Duchenne muscular dystrophy is characterized by muscle damage and progressive loss of muscle function in male children⁴ and is caused by lack of a single muscle protein *Dystrophin* (1 of 3000 muscle proteins).⁵ Most clinical studies on Duchenne muscular dystrophy

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utilise a standard protocol for measurement exploring pathophysiology, muscle strength and timed tasks. Children with Duchenne muscular dystrophy often require a wheelchair by their teenage years, as do children with Becker muscular dystrophy in their late adolescence.

Although there is no complete cure, the treatments can help managing the symptoms, delaying the progression and preventing the complications.^{1c} The treatments include physical and speech therapy, orthopedic devices, surgery, and medications.^{6a}

Muscular dystrophy

Muscular dystrophies are a heterogeneous group of inherited disorders characterised by progressively severe muscular weakness and wasting, often beginning in childhood.^{7a}

The two most common forms of muscular dystrophy are 'X' linked Duchenne muscular dystrophy (DMD) and Becker's muscular dystrophy (BMD). Duchenne muscular dystrophy is the most severe of the dystrophies with an incidence of about 1 per 10,000 males.⁸ French neurologist Guillaume Duchenne has given a comprehensive explanation with common features and severe forms of the disease, which now carries his name Duchenne Muscular Dystrophy. The clinical manifestation starts by the age of 5 years with weakness leading to a wheelchair-dependent by 10-12 years of age. The disease progresses relentlessly until death by the 20s. DMD children will be normal at birth and early motor milestones are met on time but walking will be delayed.

The histopathologically changes^{7b} observed are:

- Variation of fiber size.

- Increased number of internalized nuclei
- Degeneration, necrosis and phagocytosis of muscle fibers
- Proliferation of endomysial connective tissue.

Most common clinical findings of a myopathy are proximal, symmetric limb weakness with preserved reflexes and sensation.^{9a} Muscle tissue is replaced by fat and connective tissue. But size of muscle is usually not affected. However, in many limb girdle muscular dystrophies enlarged calf muscles are typical. The enlargement represents true hypertrophy, thus the term pseudohypertrophy should be avoided when referring to the patients. The calf muscle remains very strong even late in the course of the disorders.^{9b}

The main forms of muscular dystrophies are Duchenne muscular dystrophy, Becker, limb girdle, congenital, facioscapulohumeral, myotonic, oculopharyngeal, distal and Emery Dreifuss muscular dystrophy.¹⁰

Materials and methods

The āyurvedic texts viz. Carakasamhita, Suśrutasamhita and Bhāvaprakāśa were screened for the concepts of māmsadhātu, śrotoduṣṭi, kārśya, bījadoṣa, rasāyana and bṛmhaṇa. Nelson's Textbook of Pediatrics, IAP textbook of Pediatrics, Short textbook of Pediatrics, Essential Pediatrics, Harrison's textbook of Medicine, Robin's Pathology etc., were reviewed for understanding the disease and patho-physiology of dystrophy. The concepts are interpreted and probable explanation is derived in āyurvedic perspective.

Discussion

Samamāmsapramāṇa, samasamhanana, samamāmsa-upacaya are the lakṣaṇa of praśasta-puruṣa.^{6a} Deviating from these characters is

considered as aprāṣṭapuruṣa or ninditapuruṣa.

शुष्कस्फिकृग्दोदर ग्रीवोधमनीजालसन्ततः।

त्वगस्थिशोषो अतिकृशःस्थूलपर्वानरोमतः।

(च.सू. २१/१५)

अतिकृशइति अनेन उपचयलक्षणबलाभावोदर्शितः॥

(डल्हण सु.सू. १५/३३)

Emaciation of buttocks, abdomen, neck area, presence of networks of dhamani, predominant joint and the persons seems to have only tvak and asthi are diagnosed as kṛśa.^{6b} This is due to improper production of the rasādihātu. The process of formation of rasādihātu is termed as upacaya. Dalhaṇa has termed this upacaya as a variant of bala and mentioned that kṛśa does not have the Upacayarūpibala (bala abhāva).^{11a} All the above mentioned features are considered to be the physical stature of kṛśa.

साऽतिकृशः क्षुत्पिपासाशीतोष्णवातवर्षभारादानेष्व-
सहिष्णुर्वारोगप्रायोऽल्पप्राणश्चक्रियासु भवति॥

(सु.सू. १५/३३)

कायवाक्मानसीषुक्रियासुविषयेऽल्पशक्तिः भवतिऐते-
नशक्तिलक्षणबलाभाव उक्तः। (डल्हण)

Suśrutasaṃhita explains atikṛśa, which is a variant of kṛśa. 'Alpapraṇāśca kriyāsu bhavati' is considered to be the cardinal feature of kṛśa. On elaborating this feature it can be said that the person who has minimal capacity in function of kāya (physical), vāk (verbal) and manas (psychological) also termed as kṛśa. Normal capacity of kāya, vāk and manas termed as śakti lakṣaṇabala. The kṛśa does not show the śakti lakṣaṇabala (śakti lakṣaṇa-balābhāva).^{11a}

These 3 characters that are abnormal function of kāya, vāk and manas, also observed in muscular dystrophy. They are having difficulty to do the daily routine work such as walking

standing, running, movements of body part, etc., all are explained under the title of Kāyakriyāsu alpaśakti. They also have difficulty in speech, which expressed under Vākkriyā-svalpaśakti. Same way, the person suffering with dystrophy condition shows mental disability or abnormal psychological function is termed under manasakriyā-svalpaśakti.

बलस्यतुभारहरणादिशक्तिगम्यस्य।

(डल्हण, सु.सू. १५/१९)

तत्रबलयो उपचयशक्तिलक्षणयोव्यभिचारं आह।

(डल्हण सु. सू. ३५/३६)

Even though bala is referred to as bhāra-haraṇaśakti^{11b} (weight caring capacity) in the literature, the bala is divided into 2 different categories viz. upacayabala and śaktibala. Here upacayabala is due to the sarvadhātu upacaya. Śaktibala is refers to as the capacity of doing the function, in the form of karmasāmarthya (व्यायामशक्तिरपि कर्मशक्त्यापरीक्षयाकर्मशक्त्याहि अनुमीयते). It can be considered that upacayabala refers to māmsa-medādi upacaya which is absent in kṛśa and śakti bala refers to as krmāsāmarthya which is absent in variant of kṛśa.^{11c}

आधानसमये यस्य शुक्रभागोऽधिकोभवेत्।

मेदोभागस्तु हीनः स्यात्सकृशोऽपिमहाबलः॥

(भा.प्र. ४०/५)

Bhāvaprakāśa explains kārśya by giving emphasis on the concept of śukra during the ādhānasamaya^{12a} (fertilization period). If the śukrabhāga is adhika and medobhāga hīna, produce a progeny of atikṛśa to look but has maximum bala (strength). This signifies the role of śukra in the concept of bala.

मेदसस्त्वाधिको यस्य शुक्रभागोऽल्पको भवेत्।

स स्निग्धोऽपि पुष्टोऽपि बलहीनो विलोक्यते॥

(भा.प्र. ४०/६)

If medas is adhika and śukrabhāga is alpa then progeny will be snigha and puṣṭa (well built) but will not be having bala.^{12b} This concept is more relevant as similar to muscular dystrophy. Dystrophy person may looks well built, hypertrophied muscles simulates with snigdha sapuṣṭa condition; but they do not possess the strength to do any work which is simulates with the balahīna/daurbalya concept of kārśya. As the disorder is related with the genetic factor, it simulates with influence of śukra over the bala.

Suśruta has explained that śukra is responsible for dehabala, māmsa for śarīrapuṣṭi and meda for ḍṛḍhatva of the body.^{11d} In view of the above factors, it can assure that muscular dystrophy simulates with karmakārśya. As there is involvement of śukra during the fertilisation, the term sahaja can be used and as the symptoms of kṛśa are observed in the condition so the term kārśya can be used.

सर्व चेष्टासु अप्रतिघात बाह्यानां आभ्यन्तराणां च कारणानां आत्मकार्यप्रतिपत्तिः भवति।

सर्व चेष्टासु अप्रतिघात- कायवाक्मनोव्यापारेषु- अप्रतिहतशक्ति।

कर्मेन्द्रिय, बुद्धीन्द्रिय स्वकीयकार्यऽवबोधोभवति।

(डल्हण, सु.सू. १५/२०)

The bala is responsible for the maintenance of normal function of bāhya and ābhyantra indriya; ^{11a} that includes karmendriya and buddhindriya. Bala is also needed for proper functioning of kāya, vāk and manas.^{11e} This situation of balābhāva in kāya, vāk and manas is possible in kārśya when the śukrabhāga is alpa during adhānakāla. So, that can be considered as karmakārśya.

In view of all these aspects, kārśya can be elaborated under two headings viz. dhātukṣaya-kārśya and karmakārśya. Considering the

symptomatology, karmakārśya can be correlated to muscular dystrophy condition.

दौर्बल्यं तु स्वभावदोषजरादिभिरवेक्षितव्यम्।

(सु.सू. ३५/३५)

स्वभावात् मातृपितृ शोणितशुक्रस्वभावादि इत्यर्थः।

(डल्हण सु.सू. ३५/३५)

प्रकृतिः देहजनकबीजम्। (च.सू. २१/१२)

The daurbalya is possible to develop by svabhāvata or prakṛtita. In both the occasion, the term refers to as involvement of dehanakabīja or mātr-pitr-śoṇitaśukra duṣṭi.^{11f} This indicates the genetic variation in daurbalya. As śukra is involved in the manifestation can be termed as sahaja. This is the condition in which a well-built person is unable to do the routine activities.

In muscular dystrophy genetic alteration is present during the birth itself and shows the symptoms after some duration. This explanation is almost similar with the concept of bījamahima in āyurveda.

यतोबीजमहिमाऽयंयत्स्वकाल एवकार्यं करोति ।

वथा अवनिपतितमपिशाल्यादिबीजंक्रतुप्राप्ता एव

अंकुरंजनयति; तच्चस्वभावउपालम्भं अर्हति।।

(चक्रपाणि, च. शा. ४/१४)

A sahajakārśya person having duṣṭi of śukra during birth itself needs not show the symptoms because of bījamahima. When the time comes, the symptoms will manifest. Literatures explain this concept with slimily that śālyādibīja will grow into plant only when it has a favorable condition otherwise it does not show its characters.^{6c}

यस्य यस्याहि अङ्गावयवस्य बीजे बीजभागो उपतप्तो- भवति तस्य तस्य अङ्गावयवस्यविकृतिःउपजायते।।

(चक्रपाणि, च. शा. ३/१७)

Another aspects related to dystrophy is involvement of different parts of the body. It may involve pelvic girdle or shoulder girdle or scapula or respiratory muscles individually or all regions. Āyurveda describes bīja, bījabhāga and bījabhāgāvayavaduṣṭi^{6d} in the production of the illness, which is more suitable to refer in the context.

प्लीहा कास क्षयः श्वासो गुल्मो अर्शास्युदराणि च।
कृशंप्रायो अभिधावन्तिरोगाश्चगहणीगताः॥
(च.स. २१/१४)

श्वासकासशोषप्लीहोदराग्निसादगुल्मरक्तपित्तानामन्य-
तममसाध्य मरणमुपयति। (सु.सू. १५/३३)

Kārśya shows affinity more towards the occurrence of śvāsa and kāsa^{6e} as the complication. The final outcome of kārśya is maraṇa.^{6f} The same prognosis is also possible in muscular dystrophy where involvement of respiratory muscles leading to difficulty in breathing and other respiratory symptoms are seen. On further worsening of the condition shows respiratory failure and death.

रूक्षान्नादि निमित्तेतुकृशोयुञ्जीतभेषजम् ।
बृह्मणं बलकृत्वृष्यं तथा वाजीकरञ्चयत् ॥
(भा.प्र. ४०/७)

रसायनानां वृष्याणां योगानां उपसेवनम्।
हत्वा अतिकार्ष्यं आधत्तेनृणां उपचयं परम्॥
(च. सू. २१/३३)

स्वभावात् अतिकार्ष्योः स्वभावादल्पपावकः।
स्वभावात् अबलो यश्च तस्यनास्ति चिकित्सम्॥
(भा.प्र. कार्ष्याधिकार)

In kārśya, as the person shows balahīna and involvement of śukra, the literatures indicates Brāmharasāyana and vṛṣya formulations.^{12c&6f} If the patient suffers svabhāvāt atikārśya and svabhāvāt durbala, the treatment is said to be difficult.^{12d} Administration of Testosterone in variant of muscular dystrophy is under the process of research.¹³ This signifies the vṛṣyacikista in āyurveda. (Table 1)

Conclusion

By considering the different aspects of daurbalya, karma kārśya, śukradhātu involvement, rasāyana concepts it can be concluded that muscular dystrophy in āyurveda can be considered under the title of Sahajakārśya. Symptomatically, the patient may be well-built but lacks the strength to do the routine activities. Rasāyanadravya and Vṛṣyacikitsa have to be adopted to increase the

TABLE 1
Similarities of muscular dystrophy and Ayurvedic references

Muscular dystrophy	Sahajakarsya	Reference
1. Hereditary	Bijadoṣa	Carakasamhita, Śārīrasthānam, 3/17
2. Different time period	Bijamahima	Carakasamhita, Śārīrasthānam, 4/14
3. Weakness	Balahīna	Bhāvaprakāśa, Kārśya, 40/6
4. Repeated fall	Gamana karma	Suśrutasmhita, Sūtrasthānam, 15/20
5. Mental retardation	Buddhindriyātmakāryāpratipatti	Suśrutasmhita, Sūtrasthānam, 15/20
6. Verbal disability	Vak-karma	Suśrutasmhita, Sūtrasthānam, 15/20
7. Respiratory insufficiency	Śvāsa, kāsa	Carakasamhita, Sūtrasthānam, 21/14
8. Death	Maraṇa	Suśrutasmhita, Sūtrasthānam, 15/33
9. Testosterone	Vṛṣya	Carakasamhita, Sūtrasthānam, 21/33

bala and to improve the quality of life.

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AGNIPARĪKṢA - A DIFFERENT APPROACH*

(Part I)

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Abstract: Agni is an important concept in āyurveda. Kāyacikitsa itself is considered as Agnicikitsa, which can be considered as an example to highlight the importance of agni in āyurveda. This paper discusses agniparīkṣa under three major headings viz. āturasamvedyalakṣaṇaparīkṣa (symptoms), vaidyasamvedyalakṣaṇaparīkṣa (signs) and parīkṣaśālīyāgniparīkṣa (laboratory investigations). Specific utilization of daśavidhparīkṣa and aṣṭasthānparīkṣa for agniparīkṣa is highlighted here. Effective application of laboratory investigations and its interpretation through āyurvedic principles are also being discussed.

Introduction

The word 'Agniparīkṣa' in clinical practice generally indicates the examination of koṣṭhāgni (digestive fire). But agni in clinical practice have a broader meaning which includes koṣṭhāgni, bhūtāgni and dhātuvāgni. Hence agniparīkṣa is the examination of all these three types of agni under three groups which are mandāgni, tīkṣṇāgni, viṣamāgni and samāgni. Acārya Caraka has mentioned 'Agnim jaraṇa śaktyā parīkṣetaḥ' but is practically not so simple as given in this line. Agniparīkṣa in a patient is really a challenging task for an āyurvedic physician. A physician who fails in assessing agni of a patient is failure in his practice.

Classification of Agniparīkṣa

Agniparīkṣa can be broadly classified into - a) āturasamvedyalakṣaṇaparīkṣa, b) vaidya samvedyalakṣaṇaparīkṣa and c) parīkṣaśālīya

agniparīkṣa (laboratory investigations)

Āturasamvedyalakṣaṇaparīkṣa

Mandāgni:- If the digestion process is prolonged or not proper, even the patient is taking normal food, that too in less quantity. Symptoms are heaviness of abdomen, heaviness of head, cough, breathing difficulties, etc. after intake of food. Increased salivation, nausea, vomiting, generalised weakness, etc are also the symptoms of mandāgni. Usually mandāgni is kaphapradhāna.

Tīkṣṇāgni:- In this condition, the food is getting digested very easily, even if the patient has taken very heavy meals. The person with tīkṣṇāgni will feel dryness of mouth, dryness of throat, burning sensation of body, etc. after the digestion of previous food. This tīkṣṇāgni is of pittapradhāna and if further increase, will lead to a disease condition called 'bhasmaka'.

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Viṣamāgni:- it is irregular digestive fire. Even if patient takes normal quantity food in proper way, it may not get digested. It may produce symptoms like adhmaṇa (distention), udarāśūla (abdominal colic), udarabhāra (heaviness of abdomen), atisāra (diarrhea), āntrakūjana (gurgling sound in intestine), etc. Viṣamāgni is predominantly of vāta.

Samāgni: It is the normal digestive fire which digests the food, if taken in normal quantity in proper time. Normal health is nothing but the maintenance of samāgni.

Vaidyasamvedyalakṣaṇaparīkṣa

It includes the findings and inferences of physician after examining the patient. We have enough resources of examination techniques. Aṣṭasthānaparīkṣa and daśavidhaparīkṣa are two among them. Each of them can be discussed in details with special modifications for agniparīkṣa.

Aṣṭasthānaparīkṣa

Nāḍīparīkṣa:- Tikṣṇanāḍī in tikṣṇāgni; kaṭhina, pūrita, jaḍanāḍī in mandāgni; and prasanna, sphuṭitanāḍī in samāgni. A physician who learned nāḍīśāstra under an eminent guru only can interpret nāḍī in the right way

Jihvāparīkṣa :- Jihva is the major directly visible organ in the digestive system. So, examination of jihva gives clue on the functioning of digestive system. Eg: Coated tongue is an indicator of āma (partially digested food). Cracked tongue indicates raktadhātukṣaya which might have caused due to rakta dhātvāgnimāndya.

Malaparīkṣa:- Durgandha (foul smelling), picchila (slimy), guru (heavy - which sinks in water) properties if present, indicates āma or agnimāndya. Drava (liquid) and asamhata (not

properly formed) mala indicates mandāgni, while piṇḍita (clustered) and śuṣka (dry) mala indicates tikṣṇāgni.

Mūtraparīkṣa:- Bahumūtrata (increased quantity/frequency of urine) is a symptom of āma. By examining urine, we can assume especially dhātvāgnimāndya. Eg: taṇḍulodaka sadṛśamūtra associated with asthivaha srotoduṣṭīlakṣaṇa clearly indicates asthidhātvāgnimāndya. Bahumūtrata in association with medovahasrotoduṣṭīlakṣaṇa indicates medodhātvāgnimāndya. Different presentation of mūtra indicates āma or agnimāndya in different level. Similarity in density and consistency of mūtra with specific dhātu indicate particular dhātvāgnimāndya. Eg: high density urine can be an indicative of rasa or medodhātvāgnimāndya.

Śabdaparīkṣa:- Voice of patient or sound produced in the body of patient can be considered here. Patient with kṣīṇasvara (weak voice) can be an indicator of mandāgni. Sounds such as āntrakūjana, ātopa, etc. produced in the body can be an indicative of jaṭharāgnimāndya.

Sparśaparīkṣa:- Here, āma in jaṭharāgni level expresses as śītasparśa (cold) and āma in dhātvāgni level expresses as uṣṇasparśa (warm/hot). Tenderness on body parts is also a lakṣaṇa of āma. Symptoms observed from sparśāneन्द्रiya are to be correlated with other symptoms to reach a finding.

Dr̥kparīkṣa :- Eye is one of the major sense organ which can reflect the internal physiological and pathological processes. Wet, oily and dull eyes indicate the presence of āma or agnimāndya.

Ākr̥tiparīkṣa:- Samhananam (built), chāya (complexion), varṇam (colour), etc can be considered while assessing ākr̥ti. Śoṭha

(oedema) is one of the symptoms if dhātugata āma. Dull complexion can be an indicative of dhātvāgnimāndya.

Daśavidhaparīkṣa

Prakṛti:- Prakṛti assessment is helpful in deciding the prevalence and prognosis of impairment of agni. Vātapradhānaprakṛti persons will be having viṣamāgni, pittapradhāna prakṛti will be having atyagni and kaphapradhāna prakṛti will be having mandāgni (in general).

Vikṛti:- i) Hetuvikṛti - excess intake of jala and pṛthvīmahābhūtā-predominant dravya (drug) produce mandāgni, while agni and vāyu mahābhūtā predominant dravya (drug) produce tīkṣṇāgni. ii) Doṣavikṛti - vāta, pitta and kapha, if vitiated, produce viṣamāgni, atyagni and mandāgni respectively. iii) Dūṣyavikṛti - dhātvāgnimāndya occurs in corresponding dhātu and srotoduṣṭi. iv) Deśavikṛti - jāṅgala, ānūpa and sādharmaṇa deśa cause tīkṣṇāgni, sāmāgni and mandāgni respectively. v) Kālavikṛti - hemanta and śīśira are the seasons which cause tīkṣṇāgni. Agni in this season can digest comparatively heavy food. If proper food intake is not happened, this agni will burn the tissues (dhātupākam). Vasanta and varṣa seasons will have viṣamāgni, dominantly of mandāgni. Grīṣma and śarat seasons will have reduced agni and increased pitta. This condition should be handled carefully by the physician. vi) Balavikṛti - tīkṣṇa, sama, manda agnis can be interpreted in prāvara, madhyama and āvara-bala persons.

Sāram:- Tvaksāra and raktasāra persons may have agni ranges from samāgni to tīkṣṇāgni, māmśa-medo-sāra persons samāgni to mandāgni, and śukra and satvasāra persons may have samāgni.

Samhananam (built):- Susamhata (well built) person may have samāgni or tīkṣṇāgni while asamhata (not well built) person may have atī-tīkṣṇāgni or atī-mandāgni.

Praṇānam:- In sthūlarogi (obese patient), pitta and vāta may increase and lead to increased jaṭharāgni but after the level of medodhātu, agni will not be sufficient enough to proceed the dhātupoṣaṇa (nourishment of tissues). The principle of treatment here is to reduce jaṭharāgni by controlling vāta and increasing dhātvāgni. Kṛśa (lean) patient usually have reduced agni and he may not be able to withstand appetite or over intake of food.

Sātmyam:- Sarvarasasātmya persons will have samāgni and it will help to lead a healthy metabolism. Madhura-tikta-kaṣāyārāsa śātmya persons may have mandāgni while kaṭu-amḷa-lavaṇa-sātmya persons may have tīkṣṇāgni. Persons habituated to non-vegetarian food, may have increased agni while in vegetarians it is decreased.

Satvam:- “Satvamucyate manaḥ”. Assessing the satva means assessing the strength of mind. In pravarasatva (strong mind) persons, agni will be pravara (strong) and they will be able to withstand hunger as well as food. Āvarasatva (weak mind) persons may have mandāgni, viṣamāgni or tīkṣṇāgni. Rasavahasrotas is directly related with agni in relation with cause of vitiation. Agni has role in diseases of mind also. Vāta-pitta unmāda persons will have increased agni while kaphaja unmāda persons will have reduced agni. Irregular eating habits in depression and generalized anxiety disorders indicate the relation between mind and agni.

Āhārasākti:- Āhārasākti is diagnosed by

quantity of intake and quality of digestion. If a person taking large quantity of food and is getting digested easily when compared to same age group person, it can be termed as tīkṣṇāgni. If a person taking small quantity of food and is getting digested very slowly when compared to same age group person, it can be termed as mandāgni. Timely appetite and regular bowel evacuation indicates samāgni. Alpamalapravṛtti (less or difficult evacuation of faeces) and increased frequency of appetite indicates atyagni. Ati-malapravṛtti, dravamalapravṛtti (increased or liquid form of stool) and loss of appetite are indicative of mandāgni.

Vyayāmaśakti:- Pravaravyāyāmaśakti (strong physical power) indicate samāgni. A person with tīkṣṇāgni may not have good physical strength. Reduced physical strength with loss of interest indicates mandāgni.

Vayas:- Age and agni are strongly related. Bālya (childhood) being kapha predominant age group, agni will be less. In this age group, light and easily digestible food should be advised. Middle age group is pitta dominant, hence tīkṣṇāgni or samāgni can be assumed. Old-age being the period of vāta, viṣamāgni can be assumed.

Prayogaśāliya agniparīkṣa

Mūtraparīkṣa (urine analysis): discoloration, foul smell, increased specific gravity (>1025), etc. indicates āma. Presence of bacteria, pus cells, bile salt, bile pigment, glucose, etc. in urine indicates āma or agnimāndya in different level of tissues (dhātvāgnimāndya).

Malaparīkṣa (stool analysis): foul smell, discoloration, ill formed, acidic or alkaline, etc. are indicatives of āma. Presence of blood, micro organism or other abnormal particles indicates agnimāndya.

Raktaparīkṣa (blood analysis): reduced haemoglobin concentration, reduced or increased blood cells, etc. are the signs of agnimāndya. Increased ESR level also indicative of dhātugata āma. Altered uric, RA factor, ASO titre values are also indicative of dhātugata āma. Increased bilirubin, SGOT, SGPT values indicates rakta-māmsa-medo dhātvāgnimāndya. Increased alkaline phosphatase, calcium levels in blood indicates asthi-dhātvāgnimāndya. Altered lipid level indicates impaired medo-majjadhātvāgni. Increased protein and glucose levels are indicative of medodhātvāgnimāndya.

(To be concluded)

SŪTIKĀPARICARYA

Jeena Aravind U.*

Abstract: Sūtikāparicarya has given due importance in āyurveda. It is all about being and becoming a healthy mother through specific medicines, dietetics and mode of life which would make it easy to replenish the dhātubala. These regimens focus on certain principles which aid as preventive aspect of puerperal disorders too. Postnatal care aims at maternal health and helps to step out of discomforts of puerperium along with a long term effect on overall maternal state of health.

Introduction

Motherhood is often a positive and fulfilling experience, but is associated with suffering, ill-health and even death. In the recent past, the issue of mounting infant mortality rate is gaining public attention. Reducing infant deaths often focuses on improving maternal health also. Maternal health refers to the health of women during pregnancy, childbirth and the postpartum period. Pregnancy is marked by intensive care and monitoring aimed at ensuring the birth of a healthy baby; but it has to continue after the process of delivery for maintaining the health of the mother and consequently her baby. The health and ill-health during the antenatal and intra-natal period are reflected on to a certain extent in the postnatal period also. Āyurveda gifts a treasure of antenatal and postnatal care. In Kerala, prasavarakṣa is an indispensable procedure in all families.

In āyurveda, after the delivery of child once the placenta is expelled, the woman is called as

sūtika. Sūtikāparicarya puts emphasis on key areas like garbhāśayaśodhanam, agnidīpanam, vātānulomanam, vedanāsthāpanam, bṛmhaṇam, sthanyajananam, etc. Puerperium is the period following childbirth during which the body tissues, specially the pelvic organs, revert back approximately to the pre-pregnant state both anatomically and physiologically. Some of these physiological changes may be simply bothersome for the new mother, although serious complications can also arise. Puerperal care aims at the restoration of maternal health to pre-pregnant state. It helps to prevent infection, motivation of breast feeding and contraception.

Our ācāryas have given a definite period of specific dietetics and management for sūtika which is called sūtikākāla and it is considered as 1½ months; she should be called sūtika till gets first menstruation after labour. Non-lactating mothers have resumption of menstruation by about 6-8 weeks. In nursing mothers, approximately 70% are amenorrhoeic

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until 4-6months. In normal delivery cases, 1½ months is a well accepted period of sūtikāvastha. Four months period of specific dietetics and mode of life is necessary in cases of prasūtivāpad or mūḍhagarbha. Pathya based on āhāra-vihāra can be considered up to six months. It is advisable to keep away from stanyaduṣṭi also.

Breast feeding

Exclusive breast feeding up to six months is recommended now. Breast milk is ideal for baby and baby should be fed on demand. For both mother and infant, the benefits of breast feeding are likely long term. It is an unequalled way of providing age-specific nutrients as well as immunological factors and essential for healthy growth and development of infants. Women who breast feed have a lower risk of breast cancer and their children have increased adult intelligence independent of a wide range of possible confounding factors. Moreover, women in the Nurses' Health study who reported breast feeding for at least two cumulative years had a 23 percent lower risk of coronary heart disease.¹

Importance of sūtikāparicarya

Nourishment to the developing fetus, exertion of labour, śithilata of dhāthus, expulsion of kḷeda and rakta results in śūnyata of śarīra. By following the sūtikāparicarya, she can regain her strength and returns to pre pregnant state. Dietetic regimens during the sūtikākāla enable her to meet the dual purpose - regaining strength and promotion of lactation. High calories, adequate protein, fat, minerals and vitamins are to be given. Fresh fruits and green leafy vegetables are mandatory to provide the necessary vitamins. Agnidīpana dravyas and thereafter bṛmhaṇīya dravyas are advisable. In

Suśrutasaṃhita, it is said that raktasrāva leads to be dhātuḥṣaya which results in mandāgni and vāyukopa.² Agnidīpti is needed for uttamasthanya also. For vātaśamana, snehana is indicated. Bṛmhaṇadravyas are advised for dhātupuṣṭi. Kṣīrabhojanam is beneficial especially for pittaprakṛti women. For vātaprakṛti, māmsarasa and for kaphaprakṛti, yūṣa are preferable. All these contribute to punarnavīkaraṇa in sūtika.

Āhāra

The dietary regimen allows time for the body to recuperate as well as it initiates the process of dhātuparipūrṇata. Improvement of abhyavaharaṇa and jāraṇaśakti helps for absorption of essential nutrients required for the replenishment of dhātus. Sūtikāparicarya can be in accordance with agni, constitution of sūtika, etc. Rice gruel (warm) medicated with pañcakola powder can be advised to begin with. Complaint of diuresis is pronounced for first few days. Light, carminative, nutritious, liquid diet enhances digestion and bowel movement. Further, above-said rice gruel with ghr̥ta is advisable. It is beneficial for agnidīpti, vātānulomana and vedanāsthāpana. Pañcakolasiddhayavāgu has showed effective in viṣamāgni as well as mandāgni. It is speculated that piperine, the main chemical component of pañcakola act as a so-called thermo nutrient and increase the absorption of certain nutritional substances from the gastrointestinal tract by producing a local thermogenic action.³ Several studies have shown immuno-stimulatory effects of pippali. Pippali and śuṅṭhi have rejuvenating property and therefore restore the cellular integrity.

Yūṣa can be prepared using kulattha which is advisable for up to first 2 weeks. Uṣṇajala using

jaggery or palm jaggery or water medicated with jīraka can be used. Jīraka/palāṇḍu/laśuṇa/haridra/marica powder fried with ghr̥ta can be taken with meals after sūtikāsnāna (single or combination) for even one month. These drugs help in proper garbhāśayaśodhana, vātānulomana, agnidīpana, stanyajanana, etc.

Rice gruel prepared using fenugreek/cumin/coconut milk is advised usually that helps in garbhāśayaśodhana and stanyajanana. Early in the puerperium, sloughing of decidual tissue results in a vaginal discharge of variable quantity. This discharge is termed locia. It persists for up to 4-8 weeks after delivery. Few women with delayed hemorrhage have retained placental fragments. The collection of blood and devitalised tissues provide a good medium for the growth of bacteria and favours infection. Hence vātānulomana and garbhāśayaśodhana should be given due importance in puerperial care.

Auśadha

Pañcakolāsavam can be taken twice daily. Daśamūlāriṣṭam, Jīrakāriṣṭam, Balāriṣṭam, Abhayāriṣṭam (single or combination) are advised thereafter. Kaṣāya prepared with śuṅṭhi, eraṇḍamūla, balāmūla along with taila and ghr̥ta are effective for koṣṭhāśodhana and vedanāsthāpana. Laghu pañcamūlasiddha-kvātha is advised for those who are unfit for snehapāna. Kaṣāya of bala and vilva with ghr̥ta, taila and guḍa can be taken up to 12 days which is good as amṛt to sūtika.⁴ Dhānvantaram guḷika is beneficial for vātānulomana. Kuriñjikuzhambu or Puḷileham is also recommended for few days.

With Dhānvantaram kaṣāya, Kṣīrabala 21 āvartti or Dhānvantaram 21 āvartti 10 drops can be given on second and third week. Indukāntam

kaṣāya is also useful. According to Kaśyapa, if it is a male child, the mother should use taila and if a female child, she should use ghr̥ta for consuming. After proper digestion, yavāgu processed with dīpanīya drugs are prescribed for 5-7 days followed by maṇḍa, etc. There are several factors which favour the likelihood of a large fetus; one of them is male fetus (male baby weigh > female). This may be the reason taila is preferable after delivery of male baby because taila is more vātāsamana than ghr̥ta. Vaśā and majjā are comparatively guru.

After agnidīpana, bṛmhaṇam is advisable. Lehas can be taken after ariṣṭas. Theññinpūkkulādi is beneficial if there is more raktasrāva. Pañcajīrakaguḍam is preferable in lean women and in stanyakṣaya also. This can be continued for one month. Lohasindūra should be taken for at least 3 months. Aśvagandhādi leham, Cyavanaprāśam, Ajamāmsarasāyanam, ghr̥ta preparations like Vidiāryādi ghr̥ta, Indukāntam ghr̥ta, Dāḍimādi ghr̥ta, etc. are advised from the 4th week onwards and can be continued for 3-4 weeks. These preparations help to replenish the dhātubala. In ānūpadeśa, vātāśleṣmaja rogas can occur, so sneha has to be avoided as there is chance of abhiṣyanda. In jāṅgaladeśa, there is predominance of vāta and pitta; so sneha should be used in good quantity. In sādharma deśa, sādharmaavidhi (neither sneha nor rūkṣa) is beneficial.

In caesarean section, vātāsamana, agnidīpana, vṛaṇaropaṇa, vedanāsthāpana, etc. have much relevance in paricarya. Powder of ajamoda, rāsna, hiṅgu, pañcakola, etc. can be taken with ghr̥ta or taila. Jīrakāriṣṭa, Daśmūlāriṣṭa, Drākṣāriṣṭa, Aśokāriṣṭa or Pañcakolāsavam are prescribed. Laśuṇakṣīra can be taken for 10 days. Other regimens have to be followed as in

paricarya after normal delivery. Māmsarasa should be taken later. Adequate rest is needed. Care should be taken for 3-4 months.

External:- After massaging with Dhānvantaram kuzhambu/Piṇḍataila/Balāśvagandhādi/Lākṣādi, snāna is advised with uṣṇajala medicated with daśamūlam/nālpāmara/sahacaram/eraṇḍapatra etc. Research by Kerris Samson has proved that the heat allows the blood vessels to become dilated and increase circulation of the blood around the body resulting in more oxygen being allowed to get to the parts of the body. Rhythmically massaging the abdomen increases circulation and tones internal organs to encourage waste elimination.⁵ As abhyaṅga and snāna acts as śramahara, vātahara and ūrjaskara, it relieves from pain, stress and strain of delivery. Elādi cūrṇam can be used for snāna. Śiro-abhyaṅga also should be done. For śirasnāna, water medicated with āmalaki is used. Long and broad cotton cloth can be used for binding. Krodha, āyāsa, maithuna, śītaseva should be avoided by sūtika. Śoka, krodha, laṅghana, āyasa can decrease the milk production. The milk ejection reflex is extremely sensitive to emotional stress, which may inhibit lactation.

A sūtika needs to keep physical and mental rest. Proper rest is advised especially for first 3-4 weeks. Early resumption of activities which greatly increase intra-abdominal pressure before tissues regain their tone may result in pelvic organ prolapse. Sleep is ensured providing adequate physical and emotional support. Room can be fumigated with kuṣṭha, agaru, guggulu, etc. This ensures antiseptic premises to both mother and baby. Hygiene should be maintained. She should look after personal cleanliness of the vulval region. Usually the patient is

instructed to clean the vulva from anterior to posterior aspect to minimize infection. Triphalākāṣāya is useful for kṣāḷaṇa. Before and after feeding, nipple should be cleaned with warm water.

Advice:- Maithuna is contraindicated for sūtika. Suśruta also says that maithuna is contraindicated for vraṇarogi. Avoidance of intercourse until lacerations or episiotomy wound is well healed has prescribed. Sitz bath with Daśmūla/Pañcavalkala kaṣāyas are proved good in relieving the pain and enhancing wound healing.⁶ Leg movements and breathing exercises are advisable. Āsanas like bhujāṅgāsana, pavanamuktāsana, trikoṇāsana etc. and prāṇāyāma are beneficial, but preferably after one month. She should be asked to do perineal muscle exercises by voluntarily contracting and relaxing the perineal muscles atleast 10times in a sitting position and repeated thrice daily.

Puerperal problems:- In the classics, sūtikavyādhis have mentioned as kṛcchrasādhyā as dhātus are in lethargic state leading to kṣaya of bala and agni. Kaśyapa has described sāmānyanidānas of some sūtikārogas such as rātrigamana, trāsana, irṣya, bhaya, śoka, krodha, vegadhāraṇam, divāsvapnam, ajīrṇam, adhyaśanam, etc. In the context of sūtikājvara, aṣṛgkṣaya, vyāyāma, atisevana of kaṭu, amla, uṣṇa rasas, purovāta, guru and abhiṣyandi bhojanam, stanyāgama, grahabādha, abnormal labour have also been included in nidānas. Due to non-congenial mode of life or abnormal labour, the lady can suffer from raktavidradhi which can be treated like pittavidradhi. Śīta and rūkṣa āhāras should be avoided. Vātānulomana and garbhāśaya-śodhana are needed here to expel out the duṣṭarakta.

Constipation is also common in puerperium. A diet containing sufficient roughage and fluids is enough to move the bowel. To reduce the abdominal girth after delivery, buttermilk with powder or paste of root of pippali can be used for 3 weeks. In makkallaśūla, yavakṣāra or hiṅgu with ghr̥ta and Daśmūlāriṣṭa with Jīrakāriṣṭam are also advisable. Most of the vyādhis in duṣprajāta can be given sneha. Kaśyapa says that vamaṇa, virecana, vasti and nasya should be avoided due to alpadoṣa.

Sanyakṣaya is a very frequent complaint among nursing mothers. The very act of breast feeding entails a lot of close handling of the baby by the mother. For stanyajanana, śatāvri is preferable. Yaṣṭimadhu is useful for stanyajanana and vṛṇaropaṇa. Drumstick leaves can be included in diet. Vidāryādi ghr̥ta or Vidāryādi kaṣāya can be advised. A well balanced diet with an extra 500kcal and 25g protein is recommended for the lactating mother. In stanyakṣaya, use of articles increasing śleṣma should be used. Stanyapravṛtti occurs even by sparśana, darśana, grahaṇa or even smarāṇa of the baby. Milk ejection reflex is initiated not only by suckling, but also by the mother handling the baby, hearing the cry or even thinking of feeding. Oxytocin helps in milk ejection and maximum release occurs in response to hearing the baby's cry before feeding. With adequate food intake along with frequent breast feeding often increases breast milk. Breast milk production will be better with the recommendation of intake of milk.

Full breasts are a reassuring sign of adequate milk production and the mother is prone to mastitis only if they do not soften significantly after a good feed. Frequent feeding is helpful in

this condition. Babies should be fed when they are hungry. To prevent soreness, application of a mixture of ghr̥ta and madhu is helpful. If a mother is in sitting position, she should be advised to sit with her back supported. Mild breast engorgement often occurs by the end of first week due to a sudden increase in production of milk. In stanyavṛdhi, the breasts become heavy and painful along with recurrent flow of milk. Appropriate samśodhana and samśamana measures (āhāra and ācāra) can be adopted but it should not produce its kṣaya. Due to ajīrṇa, asātmya, virudha and atyartha bhojana, vegadhāraṇa, etc., stanyaduṣṭi occurs which may produce several symptoms in child.

Mithyācāra is an important causative factor and nidānaparivarjana is the best line of cikitsa in cases of sūtikāroga. Vātaaharacikitsa is needed in sūtikāroga according to Bhāvaprakāśa. Daśāmūlakvātha or Indukāntam kaṣāya is useful. Saubhāgyaśuṅṭhī is beneficial in sūtikāvṛdhi according to Yogaratnākara. After normal deliveries, even patrapoṭala svedana using ciñcāpatra, nirguṇḍīpatra is advisable especially in cases of low back ache. In sūtikajvara, principles of management include doṣaśamana with prasādana of dhātus. Ṣaḍaṅga kaṣāya with jīraka is useful. Laghupañcamula, bala, musta, śuṅṭi, dhānyaka, etc. are likely to benefit them. Yaṣṭimadhu can be added to Ṣaḍaṅga in cases of tṛṣṇa. Lepam with Kaccūrādi or Rāsnādi cūrṇam is useful in headache.

Puerperium may be a time of intense anxiety for many women. Postpartum blues or maternity blues is a common mood disturbance that affects approximately up to 50% of women within 3-5 days of delivery. Symptoms include insomnia, unexplained weepiness,

depression, anxiety, fatigue, etc. It requires reassurance and emotional support, especially family support. Postpartum depression develops within 6 months of childbirth. Women with underlying psychiatric disorders are more at risk of postpartum psychosis. There is also a high chance of recurrence in the next pregnancy. Unmādacikitsa can be adopted. Ghṛta preparations like Kalyāṇakaghṛta, external measures like taḷam, etc. are useful in mild to moderate conditions of postpartum psychiatric problems. Suicidal or infanticidal conditions should be considered as emergency.

Conclusion

Postnatal care based on āyurveda brings dhātupuṣṭi and dehabala which helps in improving maternal health reflecting in infant's health also. It plays a major role in preventive aspect of puerperal disorders also. These lengthy cumbersome paricarya seems little absurd to new generation as it interferes with their career too; it is observed that those fast track females land up with multiple problems in their forties, fifties and seeking the medical aid. Practically, we can adopt the same

principles of sūtikāparicarya with utmost importance.

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DECODING LIFE

Anoop A.K.*

Abstract: Āyurveda is a science that comprehends life and the living phenomenon. A clear understanding of life requires a perfect knowledge about the concepts in āyurveda on the diverse reflections of life. Tridoṣasiddhānta is the preliminary basis of āyurvedic understanding of life. This is an attempt to assimilate and appreciate the construction and the content of tridoṣasiddhānta. It is evident that by comprehending the tridoṣasiddhānta, āyurveda is approaching the life and living phenomenon in a classical way.

Āyurveda can be summarized in the least possible terms as the sensibility of life. It is the explanation of the interactions of the living system to the diverse experiences around it and the consequent responses that are generated within. The āyurvedic attempt on comprehending the diverse phenomenon of life has been formulated on the solid foundations of tridoṣa siddhānta. Siddhānta is the sound conclusion of principles derived from repeated analysis and assimilation of the experiences. The commonly accepted classes of siddhānta are: 1) Sarvatantrasiddhānta, 2) Pratitantrasiddhānta, 3) Adhikaraṇasiddhānta and 4) Abhyupagamasiddhānta.

The pañcamahābhūtasiddhānta which is generally accepted by all the diverse streams of knowledge is Sarvatantrasiddhānta. On the other hand, the one that is prevalent or accepted to their own corresponding streams of

knowledge is Pratitantrasiddhānta. The tridoṣasiddhānta is a pratitantrasiddhānta accepted generally by the āyurvedic stream; because it is the fundamental basis of the āyurvedic appreciation of the world.

Āyurveda, being the science of life the world intended is essentially the living world. So tridoṣasiddhānta is the indispensable tool, with the help of which āyurveda approaches the life and the living phenomenon. It may be consided as the scientific explanation of life. The basic tenet of the siddhānta is vāta, pitta and kapha. The basic humors are the inherent cause of both health and ill-health. The important aspect is that it is the same causes modified under the influence of diverse associated factors that bring about the two states of life. Both are characterized by its own unique manifestations.

Health is the effect of normal states of doṣas,

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whereas ill health is the effect of vitiation. Tridoṣasiddhānta is essentially the understanding of life in terms of rules of causation. The doṣas in the state of normalcy are termed as prakṛti and those in vitiation are vaikṛta.

Doṣas are generally defined as factors that bring about vitiation. Often the terms force, energy, matter, power, etc. are used for denoting doṣas. The possible questions regarding tridoṣas have to be addressed. Whether they are dravya or adravya? Sacetana or acetana? Sūkṣma or sthūla? Mūrta or amūrta? Qualitative or quantitative?

Answering these questions in a logical and scientific way can help us attaining the intended clarity of concern. As the statement of pratijñā, we commence the presentation stating doṣas as sacetanadravya having sūkṣma and amūrta configuration and qualitative appreciation.

Doṣas constitute a specific guṇasamūha that execute corresponding functions within the body. They are more functionally perceived and not objectively appreciated. The existence of vāta, pitta and kapha in body are denoted by their functions reflected in their properties.

यत्राश्रिता कर्मगुणाः कारणं समवायिय तत्द्रव्यम्।

We can see that doṣas satisfying these descriptions. Therefore, it can be assumed that doṣas are indeed dravyas. More over it can be seen that doṣas are modified positively and negatively by ṣaḍrasas seated in dravyas. Accepting the fundamental principle

वृद्धिसमानैस्सर्वेषां विपरीतैर्विपर्ययः।

It can be concluded that dravya viśeṣatva common to the śarīkadoṣas and the pañcabautika auśadha or āhāra as a reason behind the same. Moreover this idea is further

reinforced by the similarity in the bhūta constitutions of āhara and auśadha dravyas.

The next question is regarding the configuration of prakṛta doṣas. Whether they are mūrta or amūrta?

Mūrta is defined as the state of well-defined configuration or nirmītasvarūpa-viśeṣatvam. Hence the dimensional status as to whether sūkṣma or sthūla have to be differentiated. A mūrta dravya needs not always be sthūla or sūkṣma. Mūrta refers to the structural arrangements of the components of a dravya, while sūkṣmatva and sthūlatva refers to the level of appreciation. So mūrta and amūrta refers to a specific aspect of a dravya while sūkṣmatva and sthūlatva pertains to its level of appreciation.

It can be concluded that doṣas are amūrta with the degree of amūrta becoming more established as we progress from kapha to vāta. If doṣas were mūrta, they would not have attained the diverse varieties as prāṇa, apāna to suitably accommodate the associated functions, site, upakrama, etc.

The next question is whether doṣas are sacetana or acetana?

The doṣas are indriya agocaram i.e. not directly perceived by the senses. They are appreciated in terms of their properties and functions. The functions assigned to the doṣas are the invariable markers of life. The functions of vāta, pitta and kapha represent the existence of life. These functions become absent in a dead body. Therefore it can be assumed that doṣas are sacetana as they are reflected only in living body. Moreover tridoṣas are the distinguishing elements between the pañcabautika dravyas of all classes both acetana and sacetana. Therefore,

doṣas can be concluded as sacetanadravya.

The next question is regarding the dimension of doṣas, whether they are sūkṣma or sthūla?

The entire body is comprised of elements having gross as well as subtle organisation. If doṣas are stated as sthūla they become inaccessible at the subtle level of body. However, the doṣas have been accepted as sarvaśarīravayāpta and vyāpi. This can be satisfied only if we accept a subtle level of organization for the doṣas in the body. Therefore, it can be concluded that doṣas are sūkṣma in organization.

Another question frequently encountered regarding the doṣas is its nature of appreciation, whether they are qualitative or quantitative?

Doṣas are essentially dravyas having a dynamic existence. They are constantly responding on sensitised by the surrounding stimuli generating corresponding responses. So doṣic system is essentially dynamic system and such dynamic system cannot attain static value as reflected by the quantitative appreciation. Ācārya Suśruta has clearly stated the point -

वैलक्ष्यण्यशरीराणामस्तयित्वा तथैव च
दोषधातुमलादीनां परिमाणं न तु दृश्यते।

The quantity mentioned as of the doṣas has to be understood as the malarūpabhāva born out of the metabolism of dhātus. Probably these materials that get eliminated in śodhana.

So doṣas can be summarised as sūkṣma, karmānumeyadravya having amūrta svabhāva and which are qualitatively perceived. In other terms, doṣajñāna can be understood as the understanding of life. This is because all living phenomenon both positive and negative are expressions in terms of doṣas itself.

यथाबलम्.....

Now arises the question regarding the doṣabhedas and sthāna. The doṣabheda reflects the subtle modifications of the same doṣas to accommodate the diverse functions and properties. This modification is driven by the influence of the adhiṣṭāna and therefore governs the design of upakrama also. The often cited example of pañcavātas as five kites flying at different levels of height with different nature held together by a single string at the bottom reflects the sense. This also explains the attainment of doṣasāmana in the individual level by the execution of upakrama at the root level. However, specificity in outcome definitely requires a specific intervention.

The prākṛtāvastha or the sāmāyāvastha is reflected in svāsthya while the vaikṛtāvastha produced by the kṣaya or vṛddhi are reflected in vikāras. It has to be understood both the avastha are governed by the corresponding causes or kāraṇas. Hence a proper understanding of kāraṇabhedas become essential. The kāraṇa has to be understood at three levels: 1) samavāyi (inherent cause), 2) asamavāyi (non inherent cause) and 3) nimittakāraṇa (instrumental cause)

Applying the knowledge in the domain of svāsthya and roga, we can see that samavāyī-kāraṇa for both svāsthya and roga are doṣa itself. The asamavāyīkāraṇa for svāsthya is doṣasāmāya and its nimittakāraṇa is samyogyoga of kāla, artha and karma, while hīna mithya and atiyoga of kāla, artha and karma are the nimittakāraṇa which brings about doṣavaiṣamya. Understanding this level of causation is essential for proper upakrama.

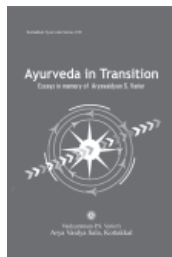
It is accepted that kāryanaśa (destruction of the

effect) occurs at the destruction of cause (kāraṇanāśa). Hence, the proper understanding of kāraṇabheda is essential. The understanding of asamavāyikāraṇa helps in understanding the samprāpti and thereby device the required upakrama. That is why cikitsa is defined as samprāptivighaṭana.

The understanding of nimittakāraṇa helps in devising the pathyāpathya nirṇaya. It also helps in attaining specificity in management. In this context cikitsa is defined as nidānaparivarjana. Though upakrama has been classified in diverse forms according to diverse criteria, it can be seen

that the ultimate aim of all these upādhis are connected at the level of doṣas. Upakrama is primarily determined by the suitability or avasthā yogyatva. The nutshell of upakramas can be summarised in terms of doṣas as the primary focus and other elements of samprāpti such as agni, dhātu, srotas, mala, upadhātu, etc. as the allied focus. It is also evident that when doṣas are connected, the other components get connected spontaneously; because it is only the doṣas among all other bodily elements that has the innate potential for maintenance and demolition.

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