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लाभानां श्रेय आरोग्यम्

Of all the gifts,
the most precious is health

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FROM THE PAGES OF VĀGBHAṬA - LXXXIII

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Abstract: General contemplation regarding the causative factors of all diseases (sarvaroganidāna) have narrated in the last chapter. Now each disease with specification is to be detailed. As all the scholars in the field of āyurveda regard, jvara is the pioneer one among the diseases. Here, Vāgbhaṭa too establishes this priority by commencing the disease-wise description with jvara as follows
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अथात: ज्वरनिदानं व्याख्यास्याम: ।
इति ह स्माहुरात्रेयादयो महर्षय: ।

(Athāta: jvaranidānam vyākhyāsyāma: ।
iti ha smāhurātreyādayo maharṣaya: ।)

Now the nidana of jvara is to be explained. Thus spoke the sages like Atreya.

ज्वरो रोगपति: पाप्मा मृत्युरोजोशनोऽन्तक: ।
क्रोधो दक्षाध्वरध्वंसी रुद्रोर्ध्वनयनोद्भव: ।। १ ।।
जन्मान्तयोर्मोहमय: सन्तापात्माऽपचारज: ।
विविधैर्नामभि: क्रूरो नानायोनिषु वर्तते ।। २ ।।

(Jvaro rogapati: pāpmā
mṛtyurojośanoऽntaka: ।
krodho dakṣādhvaradhvamsī
rudrordhvanayanodbhava: ।। 1 ।।
Janmāntayormohamaya:
santāpātmāऽpacāraja: ।
vividhairnāmabhi: krūro
nānāyoniṣu vartate ।। 2 ।।)

Jvara, the king of diseases, having sinful character, form of death and destroyer of ojus, doer of death, furious one that originated from the third eye of Lord Rudra and annihilated the rituals of Dakṣa, maker of illusion at the time of birth and death, burning in character, appears on account of misdeeds. This cruel creature with diverse names manifests in different beings.

Rogapati means the king of diseases. Here this specification is given to jvara due to its five peculiarities according to Vijayarakṣita, the author of Madhukośa commentary for Mādhavanidānam. These are: i) first one in origin among the physical diseases, ii) more strength, iii) heating nature of both body and mind, iv) inevitable presence at the time of birth and death and v) presence in all living beings in different forms.

Pāpma means sin and this synonym is given to jvara because it mainly occurs due to the misdeed of an individual who is negligent of dietary as well as physical regimens. Mṛtyu means the death, as jvara anchors one with death. Antaka is killer as it has intimate connection with death. Next three synonyms

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are in connection with the mythology of origin of this disease.

The story in Hindu epics and samhitas like Caraka and Suśruta goes like this: Dakṣa, the king of prajāpatis, conducted a big yāga (fire ritual), to which, he purposefully did not invite Lord Rudra, the husband of her daughter Devi Sati. Being insulted and irritated, Devi Sati did suicide at the yāgaśāla. Hearing this, Lord Rudra became furious and opened his third eye; from there originated a 'being' equal to fire, who was ordered by the Lord to demolish the yāga with Dakṣa. Complied the command, the 'being' approached the Lord and requested for his next duty. The Lord instructed him to afflict the persons who do misdeeds; and the being, jvara by name, started to afflict all the living beings where the misdeeds appear. Some treatises mention jvara with different names and nature. It is known as pākala in elephants, abhitapa in horses, gokarṇaka in cowherds, makara in birds, alarka in dogs, indramada in fishes, jyoti in herbs, cūrṇaka for grains, nīlika for water, cusa for land and jvara for human.

The synonym krodha (furiousness) indicates its origin from the anger of Lord in mythological perspective while it also points out the nature of it equal to fire. All types of āyurvedic measures emphasise not to agitate the pitta while treating any kind of fevers. This again indicates the priority of pittadoṣa in its origin. The synonym 'rudrorddhvanayanotbhava' hints the immortal nature of this disease. Immortals or Devas are usually pleased with pūja (worship) and thus some kinds of jvaras can be managed with daivavyapāśraya cikitsa giving more stress to the faith of an individual by conducting worships, sacrifices, etc.

It is the āyurvedic concept that a living being gets illusion at both the ends of his life i.e. death and birth; in the former condition becoming collapsed and in the latter condition forgetting all his deeds done in the previous life. Purāṇas (mythologies) support this by narrating that an individual can remember all his deeds even at the embryonic stage and it will pray the Almighty to show a good way of life at least in the coming life. But at the time of birth, when it starts to ascend to this world, it will be afflicted with a jvara and ignore everything. That is the moha (illusion) nature of jvara which is more dangerous than its usual character of heating nature (santāpatma). Some commentators establish that jvara can afflict one even without heating but with erasing his memory.

One question may be asked here that the origin of jvara is explained as the anger of the Lord, but in some places it is explained as originated from the misdeeds. How it is explained in two ways? Explanations are saying that jvara took origin from the third eye of the Lord in the first yuga. Then in the second yuga i.e. tretāyuga, the righteousness was lost and people became very selfish. This led them to a life of epicure and misdeeds; and consequently to be prey of various diseases led by jvara. Therefore, though the concept that jvara is originated from anger, the description regarding its origin from misdeeds, unwholesome diet and physical regimens seems more relevant in the present scenario.

Classification and pathogenesis

स जायतेऽष्टधा दोषैः पृथङ्मिश्रैः समागतैः ।
आगन्तुश्च मलास्तत्र स्वैः स्वैर्दुष्टाः प्रदूषणैः ।। ३ ।।
आमाशयं प्रविश्याममनुगम्य पिधाय च ।
स्रोतांसि पक्तिस्थानाच्च निरस्य ज्वलनं बहिः ।। ४ ।।
सह तेनाभिसर्पन्तस्तपन्तः सकलं वपुः ।

कुर्वन्तो गात्रमत्युष्णं ज्वरं निर्वर्तयन्ति ते ।। ५ ।।
स्रोतोविबन्धात्प्रायेण ततः स्वेदो न जायते ।

(Sa jāyateऽṣṭadhā doṣai:
pṛthaṅmiśrai: samāgatai: ।
āgantuśca malāstatra
svai: svairduṣṭā: pradūṣaṇai: ।। 3 ।।
Āmāśayam praviśyāma-
manugamya pidhāya ।
srotāmsi paktisthānācca
nirasya jvalanam bahi: ।। 4 ।।
Saha tenābhisarpanta-
stapanta: sakalam vapu: ।
kurvanto gātramatyuṣṇam
jvaram nirvartayanti te ।। 5 ।।
Srotovibandhātprāyeṇa
tata: svedo na jāyate ।)

Jvara occurs in eight ways: by vitiation of each doṣa, two doṣas, three dosas and as āgantu. In jvara, increased doṣa or doṣas, being vitiated by specific causes, enter into āmāśaya and accompany āma (ill-digested food material) and obstruct the channels. Then the doṣas expel the jaṭharāgni (digestive fire) from its location, and with it (the fire) circulate through the whole body making burning sensation and heat everywhere in the body. Perspiration is not formed usually in this condition as all the sweat channels are being closed.

Though jvara is eight-fold, its affliction is in two ways: nija i.e. occurring from inside the body and afflicting from outside. The first seven are nija in nature. Manifestation of āgantu is in separate way. Here the pathogenesis of nija-types is explained. Initially, single or combined doṣas are vitiated due to particular etiological factors (Nidāna sthānam 1/14-15, 16 and 17-18 for vāta, pitta and kapha respectively). The channels indicated here are rasavāhi śrotas according to commentaries; and no doubt, the agni mentioned is koṣṭhāgni as clarified by Mādhavanidānam.

Kapha doṣa, being originated by vitiation of madhura, amḷa, snigdha, etc., how can make the body heat? - it is a matter of question in this context. Vāta may heat the body due to the yogavāhi quality to pitta, no doubt about pitta for heating and the doubt is about kapha. Commentators discuss and answer this question by introducing the specificity of each disease i.e. vyādhi svabhāva viśeṣa - peculiar nature of disease. Here jvara originated by any means, though by kapha or otherwise, do its action of heating when the samprāpti of it is carried out inside. That makes the individuality of each disease and that is the difference between doṣa and vyādhi.

Describing the eight-fold regimen of food intake explained by ācārya Caraka with respect to the word mithyāhara, Vijayarakṣita elaborates the nidana in detail, which will parallel here *svai svai duṣṭa: pradūṣaṇai:*. Here, he also suggests that the samprāpti of jvara will be different according to the strength and variety of the causative factors to provoke the involved doṣa. In other words, the samprāpti of jvara, by the involvement of vātadosa, provoked with excessive tikta, will differ from that originated by the combination of excessive use of tikta and uṣṇa.

Here, in the samprapthi (of jvara), it is established that the causative doṣa first enters into the āmāśaya and mix with the undigested food particles. Then that mixture blocks the channel of rasavāhasrotas and thereby expels the jaṭharāgni out, and the parts of it causes increased temperature all over the body.

Prodromal symptoms

तस्य प्राग्रूपमालस्यमरतिर्गात्रगौरवम् ।। ६ ।।
आस्यवैरस्यमरुचिर्जृम्भा सास्राकुलाक्षिता ।
अङ्गमर्दोऽविपाकोऽल्पप्राणता बहुनिद्रता ।। ७ ।।
रोमहर्षो विनमनं पिण्डिकोद्वेष्टनं क्लमः ।
हितोपदेशेष्वक्षान्तिः प्रीतिरम्लपटूषणे ।। ८ ।।
द्वेषः स्वादुषु भक्ष्येषु तथा बालेषु तृड् भृशम् ।
शब्दाग्निशीतवाताम्बुच्छायोष्णेष्वनिमित्ततः ।। ९ ।।
इच्छा द्वेषश्च तदनु ज्वरस्य व्यक्तता भवेत् ।

(tasya prāgrūpamālasya-
maratirgātragauravam ।। 6 ।।
Āsyavairasyamaruci-
jṛmbhā sāsrākulākṣitā ।
aṅgamardoऽvipākoऽlpa-
prāṇatā bahunidratā ।। 7 ।।
romaharṣo vinamanam
piṇḍikodveṣṭanam kḷama: ।
hitopadeśeṣvakṣānti:
prītiramḷapaṭūṣaṇe ।। 8 ।।
Dveṣa: svāduṣu bhakṣyeṣu
tathā bāleṣu tṛḍa bhṛśam ।
śabdāgniśītavātāmbu-
cchāyoṣṇeṣvanimittata: ।। 9 ।।
Icchā dveṣaśca tadanu
jvarasya vyaktatā bhavet ।)

The prodromal symptoms (pūrvarūpa) of jvara are: lassitude (ālasyam), restlessness (arati), feeling of heaviness to body (gātragauravam), lack of interest to food (asyavairasyam), lack of taste (aruci), yawning (jṛmbha), lacrimation (sāsrākulākṣata), body pain (aṅgamarda), indigestion (avipāka), breathing slowly and intermittently (alpaprāṇata), excess sleeping (bahunidrata), horripilation (romaharṣa), spasmodic contraction (vinamanam), cramps of calf-muscle (piṇḍikodveṣṭanam), tiredness (kḷama), intolerance to good counseling (hitopadeśeṣu akṣānti), desire for sour, salty and acrid tastes (amḷapaṭūṣaṇe prīti), disinterest to sweat items; children and their plays; over thirst; ambivalent nature towards sounds, fire, cold, wind, water, shade and heat. Javara will manifest after these prodromal symptoms.

Usually pūrvarūpa is common for a disease and all the cardinal features are in a non-manifested condition. Therefore, the doṣa involvement cannot be detected in this condition. On the contrary, ācārya Suśruta gives certain specific characters even in the pūrvarūpa viz. yawning in several times indicate the involvement of vātadoṣa, burning sensation of both the eyes the pittadoṣa and loss of appetite the kapha at the time of pūrvarūpa.

Vātika jvara

आगमापगमक्षोभमृदुतावेदनोष्मणाम् ।। १० ।।
वैषम्यं तत्रतत्राङ्गे तास्ताः स्युर्वेदनाश्चलाः ।
पादयोः सुप्तता स्तम्भः पिण्डिकोद्वेष्टनं श्रमः ।। ११ ।।
विश्लेष इव सन्धीनां साद ऊर्वोः कटीग्रहः ।
पृष्ठं क्षोदमिवाप्नोति निष्पीड्यत इवोदरम् ।। १२ ।।
छिद्यन्त इव चास्थीनि पार्श्वगानि विशेषतः ।
हृदयस्य ग्रहस्तोदः प्राजनेनेव वक्षसः ।। १३ ।।
स्कन्धयोर्मथनं बाह्वोर्भेदः पीडनमंसयोः ।
अशक्तिर्भक्षणे हन्वोर्जृम्भणं कर्णयोः स्वनः ।। १४ ।।
निस्तोदः शङ्ख्योर्मूर्ध्नि वेदना विरसास्यता ।
कषायास्यत्वमथवा मलानामप्रवर्तनम् ।। १५ ।।
रूक्षारुणत्वगास्याक्षिनखमूत्रपुरीषता ।
प्रसेकारोचकाश्रद्धाविपाकास्वेदजागराः ।। १६ ।।
कण्ठौष्ठशोषस्तृट् शुष्कौ छर्दिकासौ विषादिता ।
हर्षो रोमाङ्गदन्तेषु वेपथुः क्षवथोर्ग्रहः ।। १७ ।।
भ्रमः प्रलापो घर्मेच्छा विनामश्चानिलज्वरे ।

(āgamāpagamakṣobha-
mṛdutāvedanoṣmaṇām ।। 10 ।।

Vaiṣamyam tatratatrāṅge
tāstā: syurvedanāścalā: ।
pādayo: suptatā stambha:
piṇḍikodveṣṭanam śrama: ।। 11 ।।
Viśḷeṣa iva sandhīnām
sāda ūrvo: kaṭīgraha: ।
pṛṣṭham kṣodamivāpnoti
niṣpīḍyata ivodaram ।। 12 ।।
chidyanta iva cāsthīni
pārśvagāni viśeṣata: ।
hṛdayasya grahastoda:
prājaneneva vakṣasa: ।। 13 ।।
Skandhayormathanam bāhvor-
bheda: pīḍanamamsayo: ।
aśaktirbhakṣaṇe hanvor-
jṛmbhaṇam karṇayo: svana: ।। 14 ।।
Nistoda: śaṅkhayormūdhni
vedanā virasāsyatā ।
kaṣāyāsyatvamathavā
malānāmapravartanam ।। 15 ।।
Rūkṣāruṇatvagāsyā-
kṣinakhamūtrapurīṣatā ।
prasekārocakāśraddhā-
vipākāsvedajāgarā: ।। 16 ।।
Kaṇṭhauṣṭhaśoṣastṛṭa śuṣkau
chardikāsau viṣāditā ।
harṣo romāṅgadanteṣu
vepathu: kṣavathorgraha: ।। 17 ।।
bhrama: pralāpo gharmecchā
vināmaścānilajvare ।)

Unstable nature in affliction and relief; unsteadiness in the degree of severity, mildness and varying nature of pain/temperature so caused; affliction of different types of pain in respective limbs intermittently - these are the general features of jvara occurring due to vitiation of vātadoṣa. The other discomforts are given below in detail:

Numbness of both the feet (pādasupti), stiffness of the feet (pādastambha), cramps in calf muscles (piṇḍikodveṣṭanam), tirdeness (śrama), feeling that all the joints are loosened (sandhiviśḷeṣa iva), debility of both the thighs (ūrusāda:), catch in the hip area (kaṭīgraha), breaking pain in the back (pṛṣṭham kṣoda iva), squeezing pain in the abdomen (udaram niṣpīḍyate iva), spliting pain in the bones (asthi chidyante iva), pulling pain in the heart region (hṛdaya graha), piercing pain in the chest by a pointed tool (vakṣasa: toda: prājanena iva), shaking pain in the neck (skandha madhanam), sharp pain in the arms (bāhu bheda:), compressing pain in the shoulders (amsapīḍa), chewing difficulty with jaw (hanu-bhakṣaṇe aśakti), yawning (jṛmbhaṇam), ringing in ears (karṇasvana), pain in the temple region (śaṅkha nistoda:), head ache (mūrdhavedana), bad taste (virasāsyata) or astringent taste in the mouth (kaṣāyāsyata), obstruction to faeces and urine (mala apravarttanam), roughness and redness to skin, mouth, eyes, nails, stool and urine (rūkṣa and aruṇa tvagādi), salivation (praseka:), loss of appetite (arocaka), indifference (aśraddha), indigestion (avipāka), non-sweating (asveda), wakefullness (jāgara), dryness of throat and lips (kaṇṭhoṣṭha śoṣa:), thirst (tṛṭ), scanty vomiting and dry-cough (śuṣka chardi and kāsa), melancholic (viṣādita), horripilation to hairs and benumbing the teeth (romāṅgadanta harṣa:), shivering (vepathu:), obstruction to sneezing (kṣavadhu graha:), giddiness (bhrama:), delirium (pralāpa), preference to heat (gharmeccha) and feeling of contraction in limbs (vinama:).

Pitta jvara

युगपद्व्याप्तिरङ्गानां प्रलाप: कटुवक्रता ।। १८ ।।
नासास्यपाक: शीतेच्छा भ्रमो मूर्च्छा मदोऽरति: ।
विट्स्रंस: पित्तवमनं रक्तष्ठीवनमम्ळक: १९ ।।

रक्तकोठोद्गम: पीतहरितत्वं त्वगादिषु ।
स्वेदो नि:श्वासवैगन्ध्यमतितृष्णा च पित्तजे ।। २० ।।

(yugapadvyāptiraṅgānām
pralāpa: kaṭuvakratā ।। 18 ।।
Nāsāsyapāka: śītecchā
bhramo mūrcchā madoऽrati: ।
viṭsramsa: pittavamanam
raktaṣṭhīvanamamḷaka: ।। 19 ।।
raktakoṭhodgama: pīta-
haritatvam tvagādiṣu ।
svedo ni:śvāsavaigandhya-
matitṛṣṇā ca pittaje ।। 20 ।।)

The signs and symptoms of pittajvara are: sudden onset of fever allover the body (yugapat vyāpti aṅgānām), delirium (pralāpa:), feeling of acrid taste in the mouth (kaṭuvaktrata), suppuration of nostrils and mouth (nāsāsyapāka), desire to take cold articles (śīteccha), giddiness (bhrama), stupor (mūrccha), being ill as if intoxicated (mada), restlessness (arati), loose stools (viṭśramsa), vomiting of bile (pitta vamanam), blood in the sputum (raktaṣṭīvanam), acidic eructation (amḷaka:), reddish dermatic erruptions (rakta koṭhotbhava), yellow or green coloration of skin, mouth, eyes, nails, stool and urine (tvagādiṣu pītaharitatvam), sweating (sveda), foul smell of exhalation (niśvāsa dourgandhyam) and morbid thirst (atitṛṣṇa)

Kapahaja jvara

विशेषादरुचिर्जाड्यं स्रोतोरोधोऽल्पवेगता ।
प्रसेको मुखमाधुर्यं हृल्लेपश्वासपीनसा: ।। २१ ।।
हृल्लासश्छर्दनं कास: स्तम्भ: श्वैत्यं त्वगादिषु ।
अङ्गेषु शीतपिटिकास्तन्द्रोदर्द: कफोद्भवे ।। २२ ।।

(Viśeṣādarucirjāḍyam
srotorodhoऽlpavegatā ।
praseko mukhamādhuryam
hṛllepaśvāsapīnasā: ।। 21 ।।
Hṛllāsaśchardanam kāsa:
stambha: śvaityam tvagādiṣu ।
aṅgeṣu śītapiṭikāstandro-
darda: kaphodbhave ।। 22 ।।)

Lack of appetite with particular nature (aruci viśeṣād), retarded activity (jāḍyam), blocking of channels (srotorodha), slow nature of onset, relief, getting severity, temperature, etc. (alpavegata), salivation (praseka:), feeling of sweet taste in the mouth (mukha mādhuryam), feeling of something coated in the mediastinum (hṛllepa), dyspnoea (śvāsa), common cold (pīnasa), feeling of something melts inside the mediasinum (hṛllāsa), vomiting (chardanam), cough (kāsa), stiffness of body parts (stambha), white colouration of the skin, mouth, eyes, nails, stool and urine (tvagādiṣu śvaityam), cold erruptions allover the body (aṅgeṣu śītapitakā), severe lassitude involving the nerve weakness (tandra) and urticarial spots (udarda) - these are the cardinal features of kapha jvara.

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PLUMBAGO ZEYLANICA L. AND *PLUMBAGO ROSEA* L. - A BRIEF REVIEW

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Abstract: *Plumbago zeylanica* and *Plumbago rosea,* belonging to the family Plumbaginaceae, are important plants commonly used in the traditional system of medicines. This review gives detailed information about these plants including their ethnomedical uses, phytochemicals present and biological activities.

Introduction

In recent years, focus on plant research has increased all over the world and 80% of world's population relies on herbal medicines[1]. In India, of the 17,000 species of higher plants, 7500 are known for medicinal uses. This is the highest proportion of medicinal plants known for their medical purposes in any country of the world for the existing flora of that respective country[2]. *Plumbago zeylanica* L. and *Plumbago rosea* L., belonging to Plumbaginaceae family are very common in various systems of medicines.

The Plumbaginales belong to the super order Malviflorae and comprises of two families, Plumbaginaceae and Limoniaceae[3]. Plumbaginaceae are a small group of caryophyllid flowering plants, which are closely related to Polygonaceae. It has 800 species in 24 genera found all over the world especially on salt steppes and sea cost. The plants belonging to this family are annual or perennial herbs, shrubs and climbers. The word Plumbaginaceae resembles the Latin word *Plumbum*, which means 'lead', and so it is commonly called the 'lead plant'. According to Paxtons Botanical Dictionary (published in London in 1868), the name actually is derived from the name of an eye disorder (plumbum), for which some of the species of Plumbago were believed to treat. The various genera included in this family are Acantholimon, Aegialitis, Armeria, Bamiana, Buciniczea, Cephalorhizum, Ceratostigma, Chaetolimon, Dicotyolimon, Dyerophytum, Eremolimon, Ghasnianthus, Goniolomon, Ikonnikovia, Limoniastrum, Limoniopsis, Limonium, Meullerolimon, Neogontscharovia, Plumbagella, Plumbago, Popoviolimon, Psylliostachys and Vassilczenkoa[4].

Three species of Plumbaginaceae are recorded in India of which two are medicinally important; they are *Plumbago zeylanica* and *Plumbago rosea*[5]. These two plants are very commonly used by the traditional medicinal practitioners of India in curing wide range of diseases[6]. Few

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practitioners use both the drugs in their preparations while others use them separately to treat different diseases. A minority also says that only one is medicinally active and a variation between practitioners in using the different parts of the plants is also observed. Hence an attempt is made by us to assemble all the information regarding both the plants.

***Plumbago rosea* L.**

It is a pretty subscandent perennial shrub with semi woody striate stem (Fig I). The stem is herbaceous erect, terete slightly striate, simple with flexible branches upwards. The leaves are large, simple, alternate oblong short - cuneate at the base passing into a very short amplexicaul exauriculate reddish petiole. The reddish flowers are 3-5 cm. long, forming very long terminal and axillary, lax spikes, which after flowering become 30 - 60 cm. Rhachis are quite glabrous, bracteoles ovate cuspidate subequal, 4 times shorter than the calyx almost pellucid. Calyx is red, short cylindrical with 5 short and acute dentate which appear along the ribs covered with stipititate, bifarious and subsessile glands. Corolla-tube are slender, 4 times longer than calyx, limb are wide, while the segments are ovate rotund cuspidate[7,8]. The stout roots are cylindrical, irregularly bent light yellowish brown with smooth surface having short transverse shallow fissures at the regions of the bents, which are 60-90 cm long and 1.3-2.0 cm thick. A lightly yellowish juice exudes from the fresh cut surfaces. A healthy plant may produce 18-20 stout roots and all parts of the plant are poisonous if ingested[8].

Fig. I
Plumbago rosea L.

Ethanomedical information

Charles *et al*[6] reported that *P. rosea* have long been used traditionally in Indian folk medicine to treat inflammatory disorders such as rheumatoid arthritis, laryngitis, and skin diseases like leucoderma, ringworm, scabies, leprosy, etc. A tablet made from equal amount of root of *P. rosea* along with some other medicinal herb is taken for 21 days to cure diseases like stomachache, acidity, bile, constipation and pain in the lower abdomen by the Kandhas of Kandhamal district of Orissa[9]. The Khamti tribe of Arunachal Pradesh use the paste made from the whole plant by applying externally for the treatment of bone pain[10]. According to Nath and Purkayastha[11] the roots are worn as garland to expel the embryo by the tribes in Assam. The flowers (petals) of *P. rosea* are crushed and socked in water and used as traditional dye by different ethnic groups of Manipur[12]. The dry root powder of *P. rosea* along with some herbs is taken by folk women for the first seven days of the menstrual cycle to prevent unwanted pregnancy[13]. It's used as abortifacient by Jani tribes of Orissa[14]. Kritikar and Basu[7] have listed out quite a few uses of roots like laxative,

expectorants, stomachic, tonic, abortifacient, alexipharmic, rubefacient and good appetizer. Also it is used in laryngitis, rheumatism, diseases of spleen, leucoderma, scorpion sting, ring worm, scabies, piles, anasarca, diarrhoea, skin disease, and externally applied in leprosy. Root bark is said to be antiperiodic and a powerful sudorific. Some other uses of the roots are as alternative, gastric stimulant, appetizer, locally it is a vasicant and has specific action on uterus. The roots are acrid, astringent, thermogenic, anthelmintic, constipating, expectorant, anti-inflammatory, abortifacient, alterant, antiperiodic, carminative, digestive, sudorific, narcotic, gastric and nerve stimulant and rejuvenating, and are used in dyspepsia, colic inflammation, cough, bronchitis, helminthiasis, haemorrhoids, elephantiasis, chronic and intermittent fever, hepatosplenomegaly, amenorrhoea, odantalgia, and anaemia[8].

Phytochemicals

An orange yellow pigment named Plumbagin (2-methyl, 5-hudroxy 1:4 naphthoquinone) is the active constituent present in the roots. Other constituents reported in the plant are sitosterol glycoside, a fatty alcohol, perhaps arachidyl alcohol, tannins and an amorphous brown pigment[5,15]

Biological activities

The ethanolic root extract of *P. rosea* was studied for its acute and subacute toxicity in mice and rats respectively. It was observed that the 24h LD_{50} values of the extract in mice for intraperitoneal and oral route were 239.88 mg and 1148.15 mg/kg body weight respectively. A higher dose of oral administration caused severe diarrhea. A dose of 50 mg/kg of extract when injected i.p for 30 days daily in male rats caused significant reduction in weight of liver, kidney, thymus, and testes while on the other hand the weight of the spleen increased in comparison with control. The same dose in female increased the weight of uterus and thymus but did not show any change in weight of liver and spleen. An increase in the values of the blood parameters (WBC, RBC, serum alkaline phosphate, alanine transaminase) were also observed in both the sex but DNA, RNA, and the total protein decreased[15].

The herbal preparation containing *P. rosea* induced biochemical changes in uterus of albino rat[17]. The ethanolic crude extract of *P. rosea* root along with other herb in composite form when given for 12 days induced morphological changes of endometerial surface epithelium in uterus of albino rats[13]. Tumor growth inhibitory and radiosensitizing effects of the alcoholic root extract of *P. rosea* was studied on mouse tumours and the extract exhibited only a weak anti tumour activity but it can be a good candidate to use with radiation to enhance the tumour killing effect[18].

The anti-atherogenic effect of Caps HT2, an ayurvedic medicine formulation, containing *P. rosea* as one of the ingredient was studied. The formulation was evaluated as antioxidant, anti-coagulant, platelet antiaggregatory, lipoprotein lipase releasing, antiinflammatory and antihypolipidaemic activities in rats. The antiinflammatory action of the formulation was significant with acute and chronic inflammation induced by carrageenan and formalin respectively in rats. The formulation also reduced cholesterol, and a significant decrease in the atherogenic index and body weight indicates the extract to be a powerful antihyperlipidaemic[19].

Plumbagin, a napthaquinone from the roots of

P. rosea when injected i.p., produced significant increase in the percentage of the S-phase as well as G2-M cells with a decrease in the G1 phase. This study was carried out by Devi *et al*[20] on the radiation induced cytogenetic and cell cycle changes in mouse Ehrlich ascites carcinoma invivo.

Plumbagin (5 µg/ml) when given alone or with radiation for 60 min, has significantly decreased the cell count on 3rd and the 4th day indicating the radiosensitizing effect on mouse melanoma cells grown invitro[21].

The antifertility and uterine activity of *P. rosea* in rats was reported by Lal *et al*[22] while Vohora *et al*[23] says that the petroleum ether, alcoholic and aqueous extracts were tested for its antifertilizing, antizygotic, blastocystotoxic, antiimplantation and early abortifacient activity and found that its roots did not show any antiimplantation activity.

***Plumbago zeylanica* L.**

It is a perennial herb found in shady place and subscandent (Fig II). Stems are 0.6-1.5 m long, slightly woody in nature, spreading, terete, striate and glaborous. Leaves are thin with 3.8-7.5 cm long and 2.2-3.8 cm wide, ovate subacute, entire, glaborous fairly glacous beneath. It has reticulate venation, shortly and abruptly attenuated into a short petiole. The flowers are white, elongated spikes, rachis glandular, striate with ovate bracteoles shorter than calyx. The calyx is 1-1.3 cm long narrowly tubular, persistent densely covered with stalked glands, teeth small with membranous margins. The corolla is white and slender tube which is 2-2.5cm long, lobes 8 mm long obovate - oblong, acute, apiculate. Filaments are as long as the corolla tube and the anthers are exerted just beyond the throat. Capsule is oblong and pointed. The pericarp is thin below, thick and hardened above. It is wildly available in Bengal, U.P, Southern India and Ceylon[7].

Ethanomedical information

The leafy branches of the plant are used as a process enhancer in the preparation of an Ayurvedic formulation (*Ranu dabai*)[24]. The Baiga and Gond tribes of Madhya Pradesh use *P. zeylanica* as an edible plant[25]. Rural population of Harayana uses root decoction in gynecological and other related problems[12]. The leaves and roots of the plant are used in gland tuberculosis and impotency while only the leaves are

Fig. II
Plumbago zeylanica L.

used in Malaria and bone tuberculosis by the Shinash, Agew-awi and Amhara people in northwest Ethiopia[26]. The different tribal and the non-tribal medicine men of Tripura state prescribe leaf juice in jaundice and apply the root paste externally for snake bite[27]. Dried powder mixed with goat milk is administered to arrest frequency of urinination by the ethnic group Thottianaickans of Semmalai hills, Tiruchirappalli dist, Tamil Nadu[28]. The root paste along with black pepper is taken orally to induce abortion by the Kandhas of Kandhamal daisrict of Orissa[9]. *P. zeylanica* is an ingredient in an Ayurvedic formulation (*Hriday Amrit*) which is used as a remedy for coronary heart disease and other cardiac disorders[29]. Root of the plant is listed among few other ethnomedicinal herbs which are used in general debility in the sacred groves of Meghalaya[30].

Charles *et al*[6], reports that *P. zeylanica* have long been used traditionally in Indian folk medicine to treat inflammatory disorders such as rheumatoid arthritis, laryngitis, and skin diseases like leucoderma, ringworm, scabies, leprosy etc. The root extract is taken with tea to cure headache, cold and cough by the Bhil tribe of Bibdod village of Ratlam Dist, MP[31]. The roots of this herb are extensively used in the Indian System of medicine and the Ayurvedic doctors recommend the root of this herb for dyspepsia, piles, diarrhea, skin disease, etc[32]. *P. zeylanica* is one among the various plants used in Africa to treat skin diseases based on the long time experience[33]. Powdered root is mixed with goat milk and taken for stomachache in Madurai District of T.N[34]. It is also reported that the women's of Assam use the root powder to induce sterilization[11]. In the Shekhawati region of Rajasthan, the root is mixed with Deshi ghee and given orally for the treatment of piles and chronic constipation, while a decoction of the root is used for dropsy, sprue, indigestion, piles, leucoderma and rheumatism[35]. Chandraprabha vati that has *P. zeylanica* as an ingredient is used in anaemia, indigestion and renal calculi[36]. Lohiya *et al* [37], have identified the use of *P. zeylanica* as lead plant for male fertility regulation as per the Ayurvedic and Unani texts. The study of this plant is restricted only to the level of spermatogenesis throughout histology anti fertility test in rats and mice. According to Wang *et al*[38], the whole plant and roots are been used in Taiwan as folk medicine for the treatment of rheumatic pain, dysmenorrhea, carbuncle, contusion of the extremites, ulcer and elimination of intestinal parasites. In his report he has also mentioned that in the southwestern Nigerian folk medicine it is used for parasitic diseases, scabies and ulcer. In Taiwan the plant is used as a folk medicine for the treatment of rheumatic pain, menostasis, carbuncle and injury due to bumping[39].

The Vietnamese traditional medicine uses this herb for the treatment of various diseases like rheumatic pain, sprain, scabies, skin diseases, wounds, ulcer, inflammations and cancer[40]. The report of Dai *et al*[41], says that roots and leaves of *P. zeylanica* are used widely as medicinal herb in India and China. In China it is used traditionally for dispersing stagnant blood and anemia produced due to it, removing toxic fractions and killing intestinal parasites, external and internal trauma, toxic swelling and malignant furunculous scabies. The sun dried root powder boiled with water to make a paste is applied externally for leucoderma, leprosy and other skin diseases by the tribes of Amarakantak region of Madhya Pradesh[42]. A paste made by

mixing equal proportion of root and bark of the plant is applied locally for the treatment of haemorrhoids and skin diseases while a decoction of root bark is taken orally in diarrhoea in Meghalaya[43]. Shivanna *et al*[44], reported the use of the plant in headache in the village of Bhadra Wild Life Sanctuary area situated in Western Ghats region of Karnataka. There are reports of the root powder, taken along with goat milk, used to relieve stomach disorders[45]. Das and Gosh[46], reported the use of leafy branches as process enhancer in the preparation of rice beer by the tribals in Terai of West Bengal. The whole plant and roots are been used in menostasis, rheumatic pain and carbuncle[47]. In Africa the roots of *P. zeylanica* are used for jaundice as well as skin diseases; roots and barks for leprosy and the leaves and roots for fertility related problems[48]. Reddy *et al*[49], reported the use of *P. zeylanica* in variety of skin ailments including wound healing, malaria and intermittent fever[50]. The roots are laxative, expectorant, stomachic, tonic, abortifacient, alexipharmic, appetizer, and are used in laryngitis, rheumatism, diseases of spleen, leucoderma, ring worm, scabies, piles, anasarca, diarrhoea, skin disease, externally applied in leprosy, and other skin disorders, root bark is said to be antiperiodic and a powerful sudorific while the leaves are vesicant and aphrodisiac and are used for the treatment of scabies in the Unani system[7]. *P. zeylanica* was listed among the plants used for permanent sterilization by the people of Assam, India[51].

Phytochemicals

Plumbagin a napthaquinone is the major active principle component responsible for its medicinal value. It is a crystalline substance with a chemical nature of 2-methyl, 5-hydroxy 1:4 naphthoquinone with the structure similar to the structure of vitamin K. A range of other compounds isolated from this plant are two-plumbagic acid glucoside, plumbagic acid, 3,3-biplumbagin, 3-chloroplumbagin, chitranone, isoshinanolone, maritinone, elliptinone, isoshinanolone coumarins (seselin, 5-methoxyseselin, suberosin, xanthoxyletin and xanthyletin), 2.2-dimethyl-5-hydroxy-6-acetylchromene, plumbagin acid, b-sitosterol, b-sitosteryl glucoside, bakuchiol, 12-hydroxyisobakuchiol, saponaretin, isoorientin, isoaffinetin and psoralen. Binaphthoquinones, flavonoids steroids, sugars, naphthalenones, alkane, triterpenes, amino, alkaloid, tannin and saponin have been isolated from this plant[32,38,47,52].

The newly isolated constituents are b-sitosteryl-3-b-glucopyranoside-6'-O-palmmitate, plumbagin, lupeol acetate, lupenone, trilinolein, b-sitosterol, and b-sitosteryl-3-b-glucopyranoside and b-sitosteryl-3b-glucopyranoside-6'-O-palmitate[40]. Plumbagin and biplumbagin were isolated from the roots of *P. zeylanica*[39,53].

Biological activities

The acute toxicity studies of *P. zeylanica* in albino rats revealed that the oral LD_{50} of the drug is 65 mg/kg body weight and the post mortem of the dead animals revealed a profuse bleeding in the viscera[32].

Plumbagin the main active constituent of *P. zeylanica* has been reported to modulate cellular proliferation, carcinogenesis and radioresistances[54]. The tropical treatment of plumbagin (0.005-5 µg), prevented the development of oocyte and affected fertility in housefly, the mechanism of the prevention is concluded that, plumbagin doesn't effect the hormonal pathway in female houseflys indeed it act as a cytotoxic

compound[55]. A study done by Abdul and Ramchender[56] indicate that plumbagin can augment the macrophage bactericidal activity by potentiating the oxyradical release at low concentration whereas at higher dose it inhibits the activity. Plumbagin at a dose of 4 mg/kg body weight induces tumour regression in 3-methyl-4-dimethyl aminoazobenzene induced hepatoma in wister strain rats[57]. Plumbagin isolated from the roots of *P. zeylanica* when administered in hyperlipidaemic rabbits, reduced the serum cholesterol and LDL-cholesterol. It also reduced the cholesterol/phospholipids ratio and elevated the decreased HDL-Cholesterol significantly. Moreover it prevented the accumulation of cholesterol and triglycerides in liver and aorta[58,59].

A dose of 2 mg/kg of *P. zeylanica* extract and napthaquinone when given to individual groups prolonged the bleeding time by altering platelet adhesiveness and coagulation[32]. *P. zeylanica* has been claimed to posses antioxidant properties by many researchers[60,61]. *P. zeylanica* and few other Taiwanese folk medicinal plants when examined and screened for anti-Helicobacter pylori activity, *P. zeylanica* was found to strongly dominate the activity[38]. The 70% ethanolic extract at two doses (500, 1000 mg/kg, p.o) showed a dose dependent inhibition of skin reaction induced by histamine or serotonin in rats. The finding demonstrates that the extract would have inhibited the mast cell dependent immediate allergic reactions by reducing the release of the mediators like histamine from the mast cells[41].

The plant has been reported to be antimicrobial[62], antibacterial[63], antiplasmodial[50] and antibiotic[64]. The synergestic activity of antimycobacterial constituent from Saudi plants was evaluated in combination with isonicotinic acid hydrazide against 4 atypical organisms like *Mycobacterium intracellulare, M. smegmatis, M. xenopei, M. chelonei* and it was found that plumbagin exhibited inhibitory activity at <12.5 µg/ml[65]. The wound healing activity of ethanolic extract[49], inhibitory effect against hepatitis B virus *in vitro*[66], CNS stimulant[67], and hyperglycemic activity are reported for the plant[68].

The mechanism of carbohydrate intolerance induced in the rats by ethanolic root extract of *P. zeylanica* was studied and it was concluded that the increased activity of aspartateaminotransferase could increase the synthesis of oxaloacetate and consequently citrate, both of these will inhibit phosphofrictokinase activity and thereby decrease glycolytic flux, glucose uptake and utilization of the glycolytic pathway and could ultimately produce hypoglycemia[69].

The antifertility activity of the plant is also an important activity which has been reported by many researchers; the complex form of plumbagin with hydroxy propyl betacyclodextrin (HPßCD) was prepared to increase the solubility and efficacy of the drug and it was found that when given i.p. at a dose of 5 mg/kg the niosome of the drug complex showed promising antifertility activity when compared to control and niosomes with lipid layer entrapped[70,71]. The drug was given for the first 7 days of the pregnancy and it abolished the uterine proteins of 13000, 19000 and 26000 and 75000 Da molecular weight resulting in pre-implantationary loss[72]. Plumbagin at a dose of 2-15 µmol/L inhibited the proliferation, block cell cycle and induced apoptosis of APL cell line NB4 cells. The cell analysis showed that it was inhibited in the G(2)/M phase of cycle and the drug induced annexinV(+)/PI(-) cell increase and

DNA fragmentation. It is also reported that *P. zeyanica* is effective against acute promyelocytic leukemia[73].

Conclusion

The extensive survey of literature reveals that both the plants are an important source of many pharmacologically and medicinally important constituents. The reported biological activities are the outcome of the traditional claims. The biological activities of these plants show its importance to mankind and justify the inclusion of these drugs in traditional preparations.

References

1. Edwin, E., Sheeja, E., Mishra, N., Thakre, V. and Sudha, V., Herbal Medicines: the ups and downs, *The Indian Pharmacist*. 6: pp 38-44, 2005.
2. Chandra, P.K., Pitamber, P.D. and Bikram, S.S., Developing the medicinal plants sector in northern India: Challenges and opportunities. *J. Ethnobiol. Ethnomed*. 2**:**32 doi: 10.1186/1746-4269-2, 2006.
3. Paiva, S.R., Marques, S.S., Figueiredo, M.R. and Kaplan, N.A.C., Plumbaginales: A pharmacological approach. *Floresta e Ambiente*. 10(1), pp 98-105, 2003.
4. Plumbaginaceae - Wikipedia, the free encyclopedia web site. Available at: http://en.wikipedia.org/wiki/Plumbaginaceae. Accessed on october 27, 2007.
5. Anonymous, *The Wealth of India*. Vol. VIII. pp. 148, 168, National Institute of Science Communications and Information Resources, Council of Scientific and Industrial Research, New Delhi, 2003.
6. Dorni, A.I.C., Vidyalakshmi, K.S., Hannah, R.V., Rajamanickam, G.V. and Dubey, G.P., Antiinflammatory activity of *Plumbago capensis*. *Phcog. Mag.* 2(8), pp 239-43, 2006.
7. Kritikar, R.K. and Basu, D.B., *Indian Medicinal Plants*, pp. 1465-70, Jayyed Press Delhi,1975.
8. Warrier, P.K., Nambir, V.P.K. and Ramankutty, C., *Indian Medicinal Plants*, Vol. IV, pp. 321-26, Orient Longman Pvt. Ltd, Chennai, 2005.
9. Misra, M.K., Behera, S.K., Panda, A. and Behera, S. K., Medicinal plants used by the Kandhas of Kandhamal district of Orissa. *Ind. J. Trad. Knowledge*. 5(4): pp 519-28, 2006.
10. Das, A.K. and Tag, H.I., Ethnomedical studies of the *Khamti* tribe of Arunachal Pradesh. *Ind. J. Trad. Knowledge*. 5(3): pp 317-22, 2006.
11. Nath, S.C. and Purkayastha, J., Biological activity of ethnomedical claim of some plant species of Assam. *Ind. J. Trad. Knowledge*. 5(2): pp 229-36 2004.
12. Yadav, J.P., Suresh, K. and Siwach, P., Folk medicine used in gynecological and other related problems by rural population of Haryana. *Ind. J. Trad. Knowledge*, 5(3): pp 323-26, 2006.
13. Sarma, H.N. and Mahanta, H.C., Effects of composite root extract on rat granulosa cells: A transmission electron microscopic observations. *J. Exp. Zool*. 3(2): pp 217-21, 2000.
14. Dhal, N.K., Rout, N.C. and Thirunavoukkarasu, M., *Plumbago indica* Linn. (Plumbaginaceae): A specific case study for birth control among the Jani tribe of Orissa. *Ethnobotany*. 12: 27-8 (2000).
15. Solomon, F.E., Sharada, A.C. and Devi,. P.U., Toxic effects of crude root extract of *Plumbago rosea* (Rakta chitraka) on mice and rats. *J. Ethnopharmacol*. 38(1): pp 79-84, 1993.

16. Komaraiah, P., Ramakrishna, S.V., Reddanna, P. and Kavi Kishor, P.B., Enhanced production of plumbagin in immobilized cells of *Plumbago rosea* by elicitation and in situ adsorption. *J. Biotechnol.* 101(2): pp 181-87. 2003.
17. Sarma, H.N and Mahanta H.C., Effects of composite root extract on certain biochemical components in uterine tissue of albino rat. *J. Exp. Zool.* 4(1): 121-26 (2001).
18. Devi, P.U., Solomon, F.E. and Sharada, A.C., In vivo tumor inhibitory and radiosensitizing effects of an Indian medicinal plant, *Plumbago rosea* on experimental mouse tumors, *Indian J. Exp. Biol.* 32(8): pp 523-28, 1994.
19. Mary, N.K., Babu, B.H. and Padikkala, J., Antiatherogenic effect of Caps HT2, A herbal Ayurvedic medicine formulation, *Phytomedicine.* 10(6-7): pp 474-82, 2003.
20. Devi, P.U., Rao, B.S. and Solomon, F.E., Effect of plumbagin on the radiation induced cytogenetic and cell cycle changes in mouse Ehrlich ascites carcinoma in vivo. *Indian J. Exp. Biol.* 36(9): 891-95 (1998).
21. Prasad, V.S., Devi, P.U., Rao, B.S. and Kamath, R., Radiosensitizing effect of plumbagin on mouse melanoma cells grown in vitro. *Indian J. Exp. Biol.* 34(9): pp 857-58, 1998.
22. Lal, R., Sankaranarayanan, A. and Mathur, V.S., Antifertility & uterine activity of *Plumbago rosea* in rats. *Indian J. Med. Res.* 78: pp 287-90, 1993.
23. Vohora, S.B., Garg, S.K. and Chaudhury, R.R.. Antifertility screening of plants, Effect of six indigenous plants on early pregnancy in albino rats. *Indian J. Med. Res.* 57(5): pp 893-99, 1969.
24. Sekar, S. and Mariappan, S., Usage of traditional fermented products by Indian rural folks and IPR. *Ind. J. Trad. Knowledge.* 6(1): 111-20 (2007).
25. Pandey, R.K. and Saini, S.K., Edible plants of tropical forest among tribal communities of Madhya Pradesh. *Ind. J. Trad. Knowledge.* 6(1): pp 185-90 2007.
26. Giday, M., Teklehaymanot, T., Animut, A. and Mekonnen, Y., Medicinal plants of the Shinash, Agew-awi and Amhara people of northwest Ethiopoa. *J. Ethnopharmacol.* 30: 30-40 (2006).
27. Datta, B.K., R. Saha, Majumdar, K. and Bhakta, T., Medicinal plants prescribed by different tribal and non-tribal medicinal men of Tripura state, *Ind. J. Trad. Knowledge.* 5(4): pp 559-62, 2006.
28. Ganesan, S., Venkateshan, G. and Banumathy, N., Medicinal plants used by ethnic group Thottianaickans of Semmalai hills (reserved forest), Tiruchirappalli district, Tamil Nadu. *Ind. J. Trad. Knowledge.* 5(2): pp 245-52, 2006.
29. Lokhande, P.D., Jagdale, S.C. and Chabukswar, A.R., Natural remedies of heart diseases. *Ind. J. Trad. Knowledge.* 5(3): pp 420-27, 2006.
30. Laloo, R.C., Kharlukhi, L., Venugopal, N., Mishra, B.P. and Jeeva, S., Traditional knowledge and biodiversity conservation in the sacred groves of Meghalya, Indian, *Ind. J. Trad. Knowledge.* 5(4): pp 563-68, 2006.
31. Jadhav, D., Ethnomedical plants used by *Bhil* tribe of Bibdod, Madhya Pradesh, *Ind. J. Trad. Knowledge.* 5(2): pp 263-67, 2006.
32. Vijayakumar, R., Senthilvelan, M., Ravindran, R. and Sheela Devi, R., *Plumbago zeylanica* action on blood coagulation

profile with and without blood volume reduction. *Vascular Pharmacology* 2006, doi:101016/j.vph.2006.02.001.

33. Gebre-Mariam, T., Neubert, R., Schmidt, P.C., Wutzler, P. and Schmidtke, M., Antiviral activities of some Ethiopian medicinal plants used for the treatment of dermatological disorders, *J. Ethnopharmacol.*, 104: pp 182–87, 2006.

34. Ignacimutu, S., Ayyanar, M. and K.S. Sivaraman. Ethnobotanical investigations amongtriobes in Madurai District of Tamil Nadu (India), *J. Ethnobiol. Ethnomed.* 2006, doi: 10.111186/1746-4269-2-25.

35. Galav, P.K. and Katewa, S.S., Additions to the traditional folk herbal medicines from Shekhawati region of Rajasthan. *Ind. J. Trad. Knowledge*, 5(4): pp 494-500, 2006.

36. Rajani, M., Kanaki, N.S. and Bagul, M.S., Evaluation of free radical scavenging property of two classical polyherbal formulation, *Ind. J. Trad. Knowledge*, 43: pp 732-36, 2005.

37. Lohiya, N.K., Manivannan, B., Bhande, S.S., Panneerdoss, S. and Garg, S., Perspective of contraceptive choice for men. *Indian J. Exp. Biol.*, 43: pp 1042-47, 2005.

38. Wang, Y.C. and Huang, T.L., Screening of anti-Helicobacter pylori herbs deriving from Taiwanese folk medicinal plants, *Immunol. Med. Microbiol.*, 43(2): pp 295-300, 2005.

39. Hsieh, Y.J., Lin, L.C. and Tsai, T.H., Determination and identification of plumbagin from the roots of *Plumbago zeylanica* L. by liquid chromatography with tandem mass spectrometry, *J Chromatogr A.* 1083(1-2): pp 141-45, 2005.

40. Nguyen, A.T., Malonne, H., Duez, P., Vanhaelen-Fastre, R., Vanhaelen, M. and Fontaine, J., Cytotoxic constituents from *Plumbago zeylanica*. *Fitoterapia.* 75(5): pp 500-04, 2004.

41. Dai, Y., Hou, L.F., Chan, Y.P., Cheng, L. and Bhat. P.P., Inhibition of immediate allergic reactions by ethanol extract from *Plumbago zeylanica* stems. *Biol. Pharm. Bull.*, 27(3): pp 429-32, 2004.

42. Dash, S.S., Suman, N.R. and Ramesh, K., Traditional uses of plants by tribals of Amarakantak region, Madhya Pradesh. *Ind. J. Trad. Knowledge.* 3(4): pp 383-90, 2004.

43. Dolui, A.K., Sharma, H.K., Marein, T.B. and Lalhariatpuii, T.C., Folk herbal remedies from Meghalaya. *Ind. J. Trad. Knowledge.* 3(4): pp 358-64, 2004.

44. Shivanna, M.B., Mahesh, T., Vivek, N.C., Harisk, G.U. and Parinitha, M., Ethnobotanical wealth of Bhadra wild life sanctuary in Karnataka. *Ind. J. Trad. Knowledge.*, 3(1): pp 37-50, 2004.

45. Ganesan, S., Suresh, N. and Kesaven, L., Ethnomedical survey of lower Palni Hills of Tamil Nadu. *Ind. J. Trad. Knowledge*, (3): pp 299-304, 2004.

46. Das, A.P. and Ghosh, C., Preparation of rice beer by the tribal inhabitants of tea gardenin terai of West Bengal. *Ind. J. Trad. Knowledge.*, 3(4): pp 373-82 2004.

47. Lin, L.C., Yang, L.L. and Chou, C.J., Cytotoxic naphthoquinones and plumbagic acid glucosides from *Plumbago zeylanica*. *Phytochemistry.*, 62(4): pp 619-22, 2003.

48. Jain, S.K., Notable foreign medicinal uses for some plants of Indian tradition. *Ind. J. Trad. Knowledge.*, 2(4): pp 321-32, 2003.

49. Reddy, J.S., Rao, P.R. and Reddy, M.S., Wound healing effects of *Heliotropium indicum, Plumbago zeylanica* and *Acalypha indica* in rats. *J. Ethnopharmacol.* 79(2): pp 249-51, 2002.

50. Simonsen, H.T., Nordskjold, J.B., Smitt, U.W., Nyman, U., Palpu, P., Joshi, P. and G Varughese, Invitro screening of Indian medicinal plants for antiplasmodial activity. *J. Ethnopharmacol.*, 74: pp 195-204, 2001.

51. Tiwari, K.C., Majumder, R. and Bhattacharjee, S., Folklore information from Assam for family planning and birth control. *Int. J. crude Drug Res.*, 20(3): pp 133-37, 1982.

52. Edeoga, H.O. and Eriata, D.O., Alkaloid, tannin and saponins contents of some Nigerian medicinal Plant. *J. Med. Arom. Plant Sci.* 23(3): pp 344-49, 2001.

53. Okamoto, D. Hirohisa, Eiichi, K. and Tetsuya, T., The aryl–aryl coupling reaction of 1-naphthol with SnCl4 for 2, 2%-binaphthol synthesis and its application to the biomimetic synthesis of binaphthoquinone isolated from *Plumbago zeylanica*. *Tetrahedron Letters.*, 42: pp 2987-89, 2001.

54. Sandur, S.K., Ichikawa, H., Sethi, G., Ahn, K.S. and. Aggarwal, B.B., Plumbagin (5-hydroxy-2-methyl-1,4-naphthoquinone) suppresses NF-kappa B activation and NF-kappa B-regulated gene products through modulation of p65 and Ikappa Balpha kinase activation, leading to potentiation of apoptosis induced by cytokine and chemotherapeutic agent. *J. Biol. Chem.*, 281: pp 17023–33, 2006.

55. Saxena, B.P., Thappa, R.K., Tikku, K., Sharma, A. and Suri, O., Effect of Plumbagin on gonadotropic cucly of the house fly *Musca domestica* L. *Indian J. Exp. Biol.* 34: pp 739-44, 1996.

56. Abdul, K.M. and Ramachender, R.P., Modulatory effect of plumbagin (5-hydroxy-2-methyl-1,4-nathaquinone) on macrophage functions in BALB/c miceI. Potentiation of macrophage bactericidal activity, *Imunopharmacol.*, 30(3): pp 231-36, 1995.

57. Parimala, R. and Sachdanandam, P., Effect of Plumbagin on some glucose metabolising enzymes studied in rats in experimental hepatoma. *Mol. Cell. Biochem.*, 125(1): pp 59-63, 1993.

58. Sharma, I., Gusain, D. and Dixit, V.P., Hypolipidaemic and antiatherosclerotic effects of plumbagin in rabbits. *Indian J. Physiol. Pharmacol.*, 35(1): pp 10-4, 1991.

59. Dahanukar, S.A., Kulkarni, R.A. and Rege, N.N., Pharmacology of medicinal plants and natural products. *Indian J. Pharmacol.*, 32: pp S81-S118, 2000.

60. Natarajan, K.S., Narasimhan, M., Shanmugasundaram, K.R. and Shanmugasundaram, E.R., Antioxidant activity of a salt-spice-herbal mixture against free radical induction, *J. Ethnopharmacol.* 105(1-2): pp 76-83, 2006.

61. Tilak, J.C., Adhikari, S. and Devasagayam, T.P., Antioxidant properties of *Plumbago zeylanica*, an Indian medicinal plant and its active ingredient, plumbagin. *Redox. Rep.* 9(4): 219- 21 (2004).

62. Ahmad, I., Mehmood, Z. and Mohammad, F., Screening of some Indian medicinal plants for their antimicrobial properties, *J. Ethnopharmacol.*, 62(2):, pp 183-93, 1998.

63. Vijvervander, L.M. and Lotter, A.P., The

constituents of the roots of *P.auriculata* and *P. zeylanica* responsible for antibacterial activity, *Planta Med.* 20(1): pp 8-13, 1971.

64. Durga, R., Sridhar, P. and Polasa, H.. Effects of plumbagin on antibiotic resistance in bacteria. *Ind. J. Med. Res.,* 91: pp 18-20, 1990.

65. Mossa, J.S., El-Feraly, F.S. and Muhammad, I., Antimycobacterial constituents from *Juniperus procera*, *Ferula communis* and *P. zeylanica* and their *in vitro* synergistic activity with isonicotinic acid hydrazide, *Phytother Res.*, 18(11): pp 934-37, 2004.

66. Chen, W., Yu, Z. and Li, S., Effects of the water-soluble extracts from the single herb of ganduqing against hepatitis B virus *in vitro*, *Zhong. Yao. Cai.* 22(9): pp 63-5, 1999.

67. Bopaiah, C.P. and Pradhan, N., Central nervous system stimulatory action from the root extract of *Plumbago zeylanica* in rats. *Phytother. Res.* 15(2): pp 153-56, 2001.

68. Olagunju, J.A., Jobi, A.A. and Oyedapo, O.O., An investigation into the biochemical basis of the observed hyperglycaemia in rats treated with ethanol root extract of *Plumbago zeylanica*. *Phytother. Res.*, 13(4): pp 346-48, 1999.

69. Olagunju, J.A., Kazeem, O.W. and Oyedapo, O.O., Furtherstudies on the mechanism of carbohydrate intolerance induced in therat by an ethanolic root extract of *P. zeylanica*. *Pharm. Bio.*, 38(5): pp 362-66, 2000.

70. Udupa, M., D'souza, R., Singh, U.V. and Aithal, K.S., Antifertility activity of Niosomal HPbCD - Plumbagin complex. *Ind. Jl. Pharml. Sci.,* 60(1): pp 36-40, 1998.

71. Azad Chowdhury A.K., Sushanta, K.C. and Azad Khan, A.K., Antifertility activity of *Plumbago zeylanica* Linn. root. *Indian J. Med. Res.*, 76: pp 99-101, 1982

72. Devarshi, P., Patil, S. and Kanase, A., Effect of *P. zeylanica* root powder induced pre implantationary loss and abortion on uterine luminal proteins in albino rats, *Indian J. Exp. Biol.*, 29(6): pp 521-22, 1991.

73. Zhao, Y.L. and Lu, D.P., Effects of plumbagin on the human acute promyelocytic leukemia cells in vitro. *J. Exp. Hematol.*, 14(2): pp 208-11, 2006.

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PRINCIPLE VERIFICATION OF ŚVETAPRADARA VIS-À-VIS LEUCORRHOEA WITH DHĀTAKYĀDI YOGA AND LODHRAKVĀTHA UTTARA BASTI

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Abstract: Śvetapradara or leucorrhoea is a common problem in which the patient suffers from discharge, backache, weakness, frequent micturation, constipation, anorexia, headache and dragging sensation in abdomen which leads to depression. In this regard, Ācārya Caraka's principle is that the genital tract of women does not get affected without vāta, hence one should pacify it first and then treat other doṣas. The objective of the study was to study its applied aspect in 30 patients of śvetapradara.

Introduction

In the present scenario women are competing with men in all types of careers as had never before and they are equally under stress. Therefore, physically and mentally they are overstressed. Also many predisposing factors like improper diet, mental tension, poor personal hygiene, lack of fresh air, sunshine and sanitation, imprudence during menstruation and parturition and injudicious uses of contraceptives attributes to many gynaecological disorders, out of which leucorrhoea is the common one. Nearly 70% of women in the society suffer from leucorrhoea or Whites.

Śvetapradara or leucorrhoea is a common problem found in every class of the society, in which the patient suffers from discharge, backache, weakness, frequent micturation, constipation, anorexia, headache, dragging sensation in abdomen etc. which leads to depression. To provide relief from this disease and its complication, a safe and long standing mode of therapy should be sought out. In this regard, our sages have given some basic principles of the treatment. Carakasamhita says – न हि वातादृते योनिर्नारीणां संप्रदूष्यति - which means the genital tract of women does not get affected without vāta, hence one should pacify it first and then treat other doṣas (Ca. Ci. 30/115). This principle plays a vital role while treating any type of gynaecological disorders.

Aims and objectives

- To establish the fundamentals of nidāna (causative factors) and treatment of śvetapradara
- Clinical studies on śvetapradara vis-à-vis leucorrhoea
- To explore the longstanding result without having recurrence and the cheapest treatment of śvetapradara

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- To revalidate the model of treatment of leucorrhoea described in āyurvedic texts

Material and methods

30 patients having the sign and symptoms of śvetapradara were selected from the O.P and I.P of Stri - Prasūti Department of N.I.A Jaipur and were divided into two equal groups i.e. Group A and Group B.

Exclusion criteria:- Patients with chief complaints of leucorrhoea (except pregnant lady), diabetic, having positive V.D.R.L test, chronically ill, having haemoglobin less than 7% and having any anatomically deformity in genitalia were excluded from the study.

Drug administration: - Patients were divided into two groups. Group A (oral therapy) - Dhātakyādi yoga (kalpit yoga) and Group B (combined i.e. oral + local therapy) - Dhātakyadi yoga and Lodhrakvātha uttaravasti (vaginal douche).

Formulation: - Dhātakyādi yoga contains dhātaki (*Woodfordia fruticosa*), āmalaki (*Emblica officinalis*), vilva (*Aegle marmelos*) and nāgakesara (*Mesua ferra*) - all in equal part - and is processed in the decoction of dāruharidra (*Berberis aristata*). The ghana vaṭi (tablet form) so prepared was given (2 tab B.D) for one month with lukewarm water. Lodhra yavakutta (crude form of *Symplocos racemosa*) was used for uttaravasti (vaginal douche) in decoction form.

The symptoms of śvetapradara can be classified as follows:

- Cardinal symptoms (pratyātma lakṣaṇa):- Pāṇḍuvarṇa (whitish discharge) through vagina in excess.
- Local symptoms (sthānika lakṣaṇa):- Yoni kaṇḍu (vaginal itching), yoni toda (vaginal pain), yoni śītaḷata (vaginal coldness) and yoni pichilata (vaginal sliminess).
- Characteristic of discharge (srava janita lakṣaṇa):- Picchilasrava (mucoid discharge), śītasrava (cold discharge), mandarujakarasrava (discharge with mild pain), durgandhīsrava (discharge with foul smell), tanusrava (liquefy discharge), snigdhasrava (unctuous discharge), ghanasrava (solidified discharge), phenilasrava (saponified discharge) and pītavarṇasrava (yellowish discharge).
- General symptoms (sarvadaihika lakṣaṇa):- Śārīrika rūkṣata (dryness of body), udarādha vedana (pain in lower abdomen), jaṅgha vedana (pain in calf muscles), guruta (heaviness), ajīrṇa and aruci (indigestion and anorexia), frequent micturition, raktālpata (anaemia), hastapādadāha (burning sensation in hand and feet), śira:śūla (headache), utsāhahāni (lack of cheerfulness), daurbalta (weakness).
- Psychological symptoms (mānasika lakṣaṇās):- mānsika aśānti (stress), chidchidapan (irritation).

Excreted material of sveta pradara

The anatomical basis of the body i.e. saptadhātus flourishes through the important constituents of food while the excreted material is formed through the collected unimportant part of bodily function. The doṣas are physiological basis of the body and are described in two different contexts; first one, for handling the important physiological function, and other one in relation to the excreted material (Ca. Su. 28/4) for e.g. vāyu as anna-mala (food waste), kapha as rasa-mala (plasma waste) and pitta as rakta-mala (blood waste).

Now, one of the important functions of rasadhātu (plasma) is its continuous flow. This property is seen in branches arising from heart

which have continuous flow of rasadhātu. Now when this rasa dribbles from end branches of rasavāhasrotas (tiny channels or capillaries), it has no more property of continuous flow, which is the main characteristic feature of bodily rasadhātu. So, when this dribbled product solidify it is known as waste product of rasadhātu i.e. kaphadoṣa. This is the product which is formed in excess amount in śvetapradara due to intake of kapha-vitiating factors, and weakness of digestive fire. This vitiated kapha along with vitiated vāta decreases the absorption of poṣakarasadhātu as normal condition of vāta is responsible for dhātuvyūhana (transportation). It can be understood as apānavāyu plays a crucial role in dhātupoṣana process, by absorbing the essential nutrients and by excreting the waste products (by calaguṇa). In the condition of śvetapradara, vitiated apānavāyu and its hyperactivity hampers the formation of poṣya/sthāyī rasadhātu and consecutively increases the sthūla-mala-kapha. Lack of absorption of poṣakarasa hampers the formation of preceding dhātu, rakta. This raktakṣaya causes the general debility and anaemia.

Here one thing should be noted that kapha vitiating factors alone couldn't cause hypersecretion. Snigdhata (sliminess), guruta (heavy), śītata (cold) and sthirata (immovability) properties of kapha are opposite to the property required for movement. Any visible motion requires the involvement of vātadoṣa. So any movement could not take place without the involvement of vātadoṣa.

As we have already discussed that calaguna (movable property) of vāta is the main property which decide whether the action going on is due to vitiated vātadoṣa or due to kaphakṣaya. One thing should be kept in mind that calaguṇa and śītaguṇa (cold property) are inversely proportional, and hyperactivity shows the involvement of increased calaguṇa of vātadoṣa. So, śīta (coldness) should not be considered as property of vāta as śītata is not the property of substance which makes to flow but is a property of a substance that is flowed out.

Principle analysis

As the seat of vāta is below umbilicus, it has very important role in producing gynaecological disorders. Vāta is responsible for all types of movement; in other words, whether to throw out the waste product or to absorb the essential nutrient after digestion depends on the function of vāta.

If we look at the etiology of śvetapradara, the kapha-provoking factors along with vāta vitiating factors cause irritation in channels of vāta and vitiating it due to its cold and moveable properties, thereby leading to srotasaṅkoca (channel contraction), jaṭharāgni māndya (weakness of digestive fire) and lack of poṣaka (nutritive) rasa i.e. the rasādhatu [dhātu-sūkṣma (minute) form rasadhātu, doṣa-madhyama (medium) form kapha, mala-sthūla (solid) form i.e.mucous] consecutively produce raktakṣaya and general debility.

In all the above properties, moveable property (calaguṇa) of vāta plays a crucial role in producing the disease śvetapradara. All other properties are consecutive stage of other guṇas. As śīta by increasing in different proportions, increases rūkṣata (roughness), visadata (clearness) and kharata (dryness). Hence śīta guṇa is the kāraṇa (cause) and rūkṣa, visadata and kharata are the kārya (effect).

Laghu (light), sūkṣma (tiny) and cala (movement) fulfill each other properties. With the help

of these properties vāyu maintains its equilibrium. Also to keep calaguṇa of vāyu in normal state, śīitaguṇa should be in normal amount or in other words for proper conduction or movements body temperature should be appropriate.

Result analysis

Statistical analysis of the effect of the therapy on symptoms in 15 patients of Group A and Group B is shown in Table 1&2 respectively. The overall effect of the therapy is summarised in Table 3.

Discussion

Śvetapradara or leucorrhoea is having highest prevalence and recurrence rate among the patient attending the gynaecological O.P.D. It neither causes mortality nor morbidity but hamper the patient's health along with sense of insecurity and depression. This concern leads to find out a remedy which is long lasting without having recurrence.

TABLE 3

Overall effect of the therapy in total 30 patients of śvetapradara

Description	Group A	Group B
1. Percentage of relief	45.90	62.86
2. 'p' Value	<0.001	<0.001

TABLE 1

Statistical analysis of the effect of the therapy on various symptoms in 15 patients of Group A

Symptoms	Mean				SD	SE	't'	p	Result
	BT	AT	Diff.	%					
A. Cardinal symptoms									
1. Excessive white discharge	2.20	0.87	1.33	60.61	0.49	0.13	10.58	<0.001	HS
2. Mucoid discharge	2.13	1.20	0.93	43.75	0.49	0.13	7.32	<0.001	HS
3. Backache	1.33	0.53	0.80	60.00	0.41	0.11	7.48	<0.001	HS
4. Dragging /pain sensation in lower abdomen	1.47	0.87	0.60	40.91	0.51	0.13	4.58	<0.001	HS
5. Pain in thighs	1.40	0.87	0.53	38.10	0.52	0.13	4.00	<0.01	S
6. Burning sensation in vagina	1.40	1.00	0.40	28.57	0.51	0.13	3.06	<0.01	S
B. Associated symptoms									
1. Burning sensation in hand and feet	1.13	0.67	0.47	41.18	0.52	0.13	3.50	<0.01	S
2. Anorexia	1.80	0.33	1.47	81.48	0.66	0.17	8.60	<0.001	HS
3. Headache	1.53	0.47	1.07	69.57	0.26	0.07	16.00	<0.001	HS
4. Intense itching in vulva and vagina	1.47	0.60	0.87	59.09	0.35	0.09	9.54	<0.001	HS
5. Irritation	1.40	0.60	0.80	57.14	0.41	0.11	7.48	<0.001	HS
6. Weakness	1.47	0.27	1.20	81.82	0.56	0.14	8.29	<0.001	HS
7. Frequent micturation	1.47	0.27	1.20	81.82	0.56	0.14	8.29	<0.001	HS

Contd.....

TABLE 1 Contd...

Symptoms	Mean				SD	SE	't'	p	Result
	BT	AT	Diff.	%					
C. Kaphaja yonī-vyāpad									
1. Pichila srava	1.80	0.87	0.93	51.85	0.46	0.12	7.90	<0.001	HS
2. Pāṇḍu srava	1.27	0.47	0.80	63.16	0.38	0.10	8.25	<0.001	HS
3. Yonīśaitya	1.53	1.00	0.53	34.78	0.52	0.13	4.00	<0.01	S
4. Alpavedana in yoni	1.27	0.73	0.53	42.11	0.52	0.13	4.00	<0.01	S
5. Pāṇḍuvarṇa śarīra	1.20	0.53	0.67	55.56	0.62	0.16	4.18	<0.001	HS
6. Yoni kaṇḍu	1.40	0.27	1.13	80.95	0.74	0.19	5.91	<0.001	HS
D. General physical examination									
1. Weight	58	57.7	-0.07	-0.12	2.12	0.55	0.12	<0.10	NS
2. Systolic BP	113	109	3.33	2.96	5.39	1.39	2.40	<0.02	S
3. Diastolic BP	78	74.9	3.07	3.93	5.18	1.34	2.30	<0.02	S
4. Pulse rate	76	72.3	4.00	5.24	3.78	0.98	4.10	<0.001	HS
5. Respiratory rate	17	17.6	-0.13	-0.76	0.83	0.22	0.62	<0.10	NS
6. Temperature °F	99	98.4	0.39	0.39	0.67	0.17	2.24	<0.02	S
E. Haematological examination									
1. Haemoglobin	11	11.2	-0.6	-5.92	0.64	0.16	-3.81	<0.10	NS
2. TLC	6606	5927	680	10.29	2213.98	571.65	1.19	<0.10	NS
3. Neutrophils	63	63.3	0	0.00	5.28	1.36	0.00	<0.10	NS
4. Lymphocytes	36	35.3	1.13	3.11	8.33	2.15	0.53	<0.10	NS
5. Eosinophils	2.2	1.67	0.53	24.24	1.36	0.35	1.52	<0.10	NS
6. Monocytes	2.3	1.87	0.4	17.65	2.16	0.56	0.72	<0.10	NS
7. Basophils	1.5	1.67	-0.2	-13.64	3.03	0.78	-0.26	<0.10	NS
8. ESR	20	18	2.47	12.05	6.60	1.70	1.45	<0.10	NS
F. Urine Analysis									
1. Pus Cells	1.80	0.67	1.13	62.96	0.74	0.19	5.91	<0.001	HS
2. Epithelial cells	1.47	0.73	0.73	50.00	1.25	0.32	2.27	<0.02	S
3. W.B.C.	1.73	0.60	1.13	65.38	0.83	0.22	5.26	<0.001	HS
4. Albumin	0.93	0.07	0.87	92.86	0.64	0.17	5.25	<0.001	HS
5. Others	1.20	0.27	0.93	77.78	0.46	0.12	7.90	<0.001	HS

NS - Not significant; S - Significant; HS - Highly significant. No of patient = 15

TABLE 2
Statistical analysis of the effect of the therapy on various symptoms in 15 patients of Group B

Symptoms	Mean				SD	SE	't'	p	Result
	BT	AT	Diff.	%					
A. Cardinal symptoms									
1. Excessive white discharge	2.07	0.53	1.53	74.19	0.64	0.17	9.28	<0.001	HS
2. Mucoid discharge	1.80	0.33	1.47	81.48	0.66	0.17	8.60	<0.001	HS
3. Backache	1.53	0.47	1.07	69.57	0.26	0.07	16.00	<0.001	HS
4. Dragging/pain sensation in lower abdomen	1.47	0.60	0.87	59.09	0.35	0.09	9.54	<0.001	HS
5. Pain in thighs	1.40	0.60	0.80	57.14	0.41	0.11	7.48	<0.001	HS
6. Burning sensation in vagina	1.47	0.27	1.20	81.82	0.56	0.14	8.29	<0.001	HS
B. Associated symptoms									
1. Burning Sensation in hand & feet	1.27	0.53	0.73	57.89	0.46	0.12	6.20	<0.001	HS
2. Anorexia	1.40	0.60	0.80	57.14	0.60	0.15	5.17	<0.001	HS
3. Headache	1.00	0.67	0.33	33.33	0.72	0.19	1.78	<0.05	S
4. Intense itching in vulva and vagina	1.33	0.40	0.93	70.00	0.26	0.07	14.00	<0.001	HS
5. Irritation	0.93	0.27	0.67	71.43	0.49	0.13	5.29	<0.001	HS
6. Weakness	1.33	0.33	1.00	75.00	0.38	0.10	10.25	<0.001	HS
7. Frequent micturation	1.27	0.47	0.80	63.16	0.10	0.03	31.75	<0.001	HS
C. Kaphaja yonivyapad									
1. Pichhil Srava from Yoni	1.60	0.53	1.07	66.67	0.46	0.12	9.03	<0.001	HS
2. Pandu Srava from Yoni	1.53	0.40	1.13	73.91	0.80	0.21	5.48	<0.001	HS
3. Yoni Shaitya	1.47	0.40	1.07	72.73	0.26	0.07	16.00	<0.001	HS
4. Alpa Vedana in Yoni	1.60	0.53	1.07	66.67	0.46	0.12	9.03	<0.001	HS
5. Pandu Varna Sharir	1.27	0.67	0.60	47.37	0.51	0.13	4.58	<0.001	HS
6. Yoni Kandu	1.40	0.53	0.87	61.90	0.35	0.09	9.54	<0.001	HS
D. General physical examination									
1. Weight	57	57.1	0.33	0.58	1.95	0.50	0.66	<0.10	NS
2. Systolic BP	109	108	1.33	1.22	8.46	2.18	0.61	<0.10	NS
3. Diastolic B.P.	80	78.5	1.20	1.51	4.20	1.08	1.11	<0.10	NS
4. Pulse rate	76	73.6	2.13	2.82	5.10	1.32	1.62	<0.10	NS
5. Respiratory rate	17	17.6	-0.13	-0.76	0.99	0.26	0.52	<0.10	NS
6. Temperature °F	99	98.3	0.57	0.58	0.43	0.11	5.12	<0.001	HS

Contd.....

TABLE 2 Contd...

Symptoms	Mean				SD	SE	't'	p	Result
	BT	AT	Diff.	%					
E. Haematological examination									
1. Haemoglobin	9.6	10.1	-0.45	-4.70	0.78	0.20	-2.25	<0.10	NS
2. TLC	5760	5527	233	4.05	420.32	108.53	2.15	<0.05	S
3. Neutrophils	61	57.7	3.20	5.25	8.13	2.10	1.53	<0.10	NS
4. Lymphocytes	31.53	32.60	-1.07	-3.38	3.45	0.89	-1.20	<0.10	NS
5. Eosinophils	2.7	2.07	0.60	22.50	1.50	0.39	1.55	<0.10	NS
6. Monocytes	2.1	2.47	-0.33	-15.63	1.80	0.46	-0.72	<0.10	NS
7. Basophils	1.93	1.33	0.60	31.03	1.40	0.36	1.66	<0.10	NS
8. ESR	22.13	18.07	4.07	18.37	7.36	1.90	2.14	<0.05	S
F. Urine Analysis									
1. Pus Cells	3.27	1.13	2.13	65.31	1.85	0.48	4.47	<0.001	HS
2. Epithelial cells	2.07	0.87	1.20	58.06	1.32	0.34	3.53	<0.001	HS
3. W.B.C.	2.00	1.27	0.73	36.67	1.28	0.33	2.22	<0.02	S
4. Albumin	1.20	0.53	0.67	55.56	0.49	0.13	5.29	<0.001	HS
5. Others	1.00	0.07	0.93	93.33	0.80	0.21	4.53	<0.001	HS

NS - Not significant; S - Significant; HS - Highly significant. No of patient = 15

Conclusion

The study showed that Lodhrakvātha uttaravasti along with oral therapy is more beneficial in the condition of leucorrhoea. Statistical evaluation of the effect of the therapy on symptomatological basis showed 45.90% relief in Group A while 62.86% relief in group B.

References

1. Pt. Kashinath Shastri, *Carakasamhita* (Ayurved Dipika Tika commentary), 8th Edn,, Chaukhambha Sanskrit Sansthan, Varanasi, 2061.
2. Yadavji Tikramji, *Susrutasamhita*, Revised Edition, Chaukhambha Surbharti Prakashan, Varanasi, 2003
3. Kaviraj Atri Dev Gupta, *Asatangasangraha*, Revised Edition, Chaukhambha Krishna Akadmi, Varanasi, 2005.
3. Pt. Hari Sadashiv Shastri Pradakar, *Asatangahrdaya*, Revised Edition, Chaukhambha Surbharti Prakashan, 2002.
4. Ramanath Dwivedi, *Prasuti Vigyan*, 8th Edn., Chaukhambha Bhati Academy, Varanasi, 2048.
5. Nirmala G. Joshi, *Ayurvedic Concepts in Gynaecology*, 2nd Edn., Chaukhambha Sanskrit Pratisthan, 1999
6. John Howkins, Bonney's Gynaecology and Surgery, 1st Indian Edn., C.B.S Publisher and Distributors, Delhi, 1985.
7. *Jeffcoat's Principles of gynaecology*, 5th Edn., Butterworth-Heinemann International Edition.
8. Web sites: *www.homeomiracles.com/index/female-article/leucorrhoea; www.google.co.in; www.boobargain.com*

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EFFICACY OF TAKRADHĀRA IN KIṬIBHAKUṢṬHA (PSORIASIS)

Purushottamacharyulu[1], Govardhan[1] and Chandramouleeswaran P.[2]

Abstract: Kiṭbhakuṣṭha is a form of kṣudrakuṣṭha. Based on the similarities of symptoms and other description available in the medical literature, this disease has been equated to psoriasis. Psoriasis is more stress sensitive than other skin disorders. Āragvadādhi-gaṇa-kaṣāya-takaradhāra, which was selected for the present observational study, showed significant result in the management of vitiated mānasika as well as śārīrika doṣas (psychosomatic disorders).

Introduction

The history of psychosomatic problem is as old as the history of human civilization. In our classics, manas (psyche) and śarīra (body) are regarded as separate entities but not in the sense of separation; because an organism is a complex combination of ātma, manas, and śarīra. So, āyurvedic approach to a disease is definitely psychosomatic in nature. For e.g., kuṣṭha is due to disrespect given to teachers, doing sinful acts, etc. So our ācāryas have given more emphasis to the integrated aspect of mind and body.

The main aim of the study was to focus the psychosomatic treatment to psoriasis. Psoriasis is more stress sensitive than any other skin disorders since anxiety and tension aggravates the condition. Keeping this in mind the present study was undertaken.

Objective of the study: - To evaluate the efficacy of Āragvadādhigaṇa-kaṣāya-takradhāra in kiṭibhakuṣṭha (psoriasis).

Research approach: - The effectiveness of the treatment was determined by finding out the difference between baseline data of the parameters before and after the treatment.

Study design: - The results and conclusion of a clinical trial depend on the study design. The present study was an observational study.

Source of the data: - Patients suffering from kiṭibhakuṣṭha were selected from the Postgraduate Studies and Research wing's OPD and IPD of Sri D.G.M. Ayurveda Medical College, GADAG, Karnataka.

Sample size and grouping: - 30 patients were randomly selected in a single group as per the selection criteria.

Selection criteria: - The subjects were selected strictly as per the pre-set inclusion and exclusion criteria.

Inclusion criteria: - Patients with classical symptoms of kiṭibhakuṣṭha (psoriasis) of both

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sexes above the age of 12 years and below 70 years, suitable for takradhāra.

Exclusion criteria: - Patients suffering from other systemic disorders and pregnant and lactating mothers.

Duration of the study: - 14 days treatment and 30 days follow-up

Data collection; - Patients were thoroughly examined both subjectively and objectively. Detailed history pertaining to the mode of onset of the ailment, previous treatment history, family history and habits were noted and physical examination done. Routine investigations were done to exclude other conditions.

Treatment schedule: - a) Pūrvakarma: it involves the preparation of i) medicated takra, ii) āragvadhadi gaṇa kaṣāya and iii) the patient and arrangement of other requirements, b) Pradhānakarma; it involves dhārakarma and c) Paścātkarma; it involves do's and don'ts after dhāra.

Assessment criteria: - PASI score was considered as both subjective and objective parameters, because it covers both subjective (itching, scaling, erytheme, and thickness) and objective parameters (area). Along with this, triggering factors like krodha (anger), bhaya (fear), cittodvega (anxiety) and śoka (grief) were also studied and results were obtained. But they were not considered for the overall assessment of clinical response. The method of assessment of total PASI score was based on the parameters as shown in Table 1.

Skin sections: - For the PASI, the body is divided into four sections. Each section of these areas is scored by itself and then the four scores are combined into the final PASI. The four areas are: i) the legs, which have 40% of a person's skin, ii) the body (trunk area - chest, abdomen etc.) at 30%, iii) the arms (20%) and iv) the head (10%).

TABLE 1
Showing the method of assessment of total PASI score

Skin sections	Itching		Erythema		Scaling		Thickness of lesion		Coverage area		% of B,S,A		Total PASI	
	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
Head10%	+	+	+	+	+	+			x	x	x 0.1	x 0.1	=	=
Arms 20%	+	+	+	+	+	+			x	x	x 0.2	x 0.2	=	=
Body 30%	+	+	+	+	+	+			x	x	x 0.3	x 0.3	=	=
Legs 40%	+	+	+	+	+	+			x	x	x 0.4	x 0.4	=	=
Total PASI														

Coverage area	Score	Severity	Score
0%	0	None	0
<10%	1	Mild	1
10 - 29%	2	Moderate	2
30 - 69%	4	Severe	3
70 - 89%	5	Maximum	4
90 - 100%	6		

TABLE 2
Gradation of Symptoms

Symptoms	Grade	Symptoms	Grade
A. Itching:		F. Śoka (grief):	
- None - No itching	01	- None - No soka	01
- Mild - Itching subsides when he/she scratches	02	- Mild – Disturbance in concentration, occasional thinking of own problems	02
- Moderate - Reduction in itching by internal medicaments	03	- Moderate - Always thinking about own problem with mild disturbance in sleep	03
- Severe - Reduction in itching by internal and external medications	04	- Severe - Not responding to others properly; complete disturbance in sleep	04
- Maximum - After medicaments also the patients gets itching sometimes	05	G. Bhaya (fear):	
B. Erythema:		- None - No fear	01
- None - No Erythema	01	- Mild - Gets occasional fear of illness	02
- Mild - Patch with reddish tinge	02	- Moderate - Fear causing occasional disturbance in day to day activity	03
- Moderate - Patch with dull red colour	03	- Severe - Fear causing occasional disturbance in day to day activity, sudden disturbance in sleep	04
- Maximum - When it is bright red in colour with severe itching	04	H. Cittodvega (anxiety):	
C. Scaling:		- None - Zero	01
- None - No scaling	01	- Mild - Not anxious about the disease	02
- Mild - On scratching the scales settle in the pits on nails	02	- Moderate- Anxious but confident of curing the disease	03
- Moderate - The scales fall on around where the patient scratches	03	- Severe - Doesn't have belief in any therapy and worried that the disease will not be cured	04
- Severe - Scales found in his/her cloths without scratching	04	I. Overall assessment of clinical response:	
- Maximum - Scaling found on bed etc. without scratching	05	- Complete remission - PASI score 0 after treatment	01
D. Thickness:		- Marked improvement - Reduction in PASI score >75%	02
- Purely subjective		- Moderate improvement - Reduction in PASI score between 75% and 50%	03
E. Krodha (anger):		- Minimal improvement - Reduction in PASI score < 50%	04
- None - No anger	01	- Unchanged - No reduction in PASI score	05
- Mild - Gets anger but not shows outside	02		
- Moderate - Shouting loudly, throwing articles occasionally	03		
- Severe - Shouting loudly and making harm to others occasionally	04		

Area: - For each skin sections, measure the amount of skin involved as a percentage of the skin just in that part of the body (not the whole body), and then assign it a score from 0 to 6.

Severity: - The severity is measured by four different parameters: itching, erythema, scaling and thickness. Again each of these is measured separately for each skin section. These are measured on a scale of 0 to 4 from none to maximum.

Totaling up the index:- For each skin section, add up the four severity scores, multiply the total by the area score, and then multiply that result by the percentage of the skin in that section. The severity of itching, scaling, erythema, thickness, etc. was assessed in the manner as shown in Table 2.

Statistical analysis: - The baseline data i.e. before commencement of treatment on first day and at the end of seventh day, were considered for statistical analysis. The net effect was calculated by using paired 't' test. The statistical results of total PASI score of different areas after the treatment is shown in Table 3. Regarding the mānasikabhāvas (mental status), statistically highly significant results were obtained in parameters like śoka (grief) and bhaya (fear) as compared to cittodvega (anxiety) and krodha (anger), which showed less significant (Table 4).

Discussion

The statistical results showed that the therapy was very effective in reducing total PASI score. Patients who got affected with psoriasis on head especially scalp psoriasis and palmo plantar variety of psoriasis was responded well. At the same time, the patients who got affected with psoriasis on body and other parts of arms and legs (except soles and palms) did not respond well. This was the reason for reduction in total PASI score.

Though the desired result was not obtained (itching and scaling showed considerable improvement), a significant change was seen in symptoms like itching and scaling. But one should not conclude that there were lesions only on the site mentioned in the result because there were patients with varied site involvements viz. head, body, arms and legs. The results were based on site affliction in order to emphasise therapy efficacy. Moreover, the statistical analysis showed highly significant results in all the parameters irrespective of the sites affected.

Out of all the 30 cases, some of the cases reported with the particular site involvement viz. scalp, palm, soles, genitals, etc. They have included under the concerned part affliction for e.g. scalp affected patient were included under head affected patients and their after treatment results

TABLE 3

Statistical results of total PASI score of different areas after the treatment

Area	Mean	S.D.	S.E.	't'	p
Head	0.863	0.863	1.404	0.256	<0.001*
Arms	0.88	0.88	1.351	0.246	<0.01*
Body	0.376	0.376	0.662	0.120	<0.01*
Leg	1.393	1.393	2.765	0.504	<0.01*

*Highly Significant

TABLE 4

Statistical results of mānasika bhāvas after the treatment

Area	Mean	S.D.	S.E.	't'	p
Krodha	0.333	0.884	0.161	2.068	<0.05*
Bhaya	1.1	1.322	0.241	4.564	<0.001*
Śoka	1.2	1.063	0.194	6.185	<0.001*
Cittod-vega	0.733	1.048	0.194	3.77	<0.001*

*Highly Significant

were also shown according to the parts which included the above said sites.

Conclusion

Considering utility of takralepana and kaṣāya seka in kuṣṭha, the improvised study was conducted in the name of takradhāra. Based on the observation made on the study the following conclusion can be drawn:

- Takradhāra is a modified procedure of śiraseka, which comes under the type of mūrdhni taila.
- No severe side effects were observed in the study though some complained of running nose noted
- The procedure was highly effective in scalp and palmo - plantar variety of psoriasis
- Reduction in symptoms like scaling and itching was found in almost all the patients. No reduction or mild reduction was observed in erythema of arms, body, and legs. Maximum reduction in erythema was found in head.
- Maximum reduction in thickness of lesion was found in head comparing to arms and legs; in body it was very minimal.
- Overall treatment response was good in head while comparing to other parts
- Significant reduction was found in triggering factors like bhaya (fear), krodha (anger), cittodvega (anxiety), etc.

References

1. *Carakasamhita*, Cikitsāsthāna, Chapter-9
2. *Susrutasamhitha*, Uttrasthāna, Chapter-18
3. *Astangahrdaya*, Uttaratantra, Chapter-24
4. *Sahasrayogam* (Malayalam), (*Dharakalpam*), Sujanapriyavyakyanam, 22nd Edition
5. *Keraleeya Chikitsakramam* (Malayalam), Chapter-4, 2nd Edition
6. Vaidyaratnam P.S. Varier, *Chiktsasamgraham*, Chapter-16
7. Valia, R.G., *IDVL Textbook of Dermatology*, Vol-2, Chapter27, 2nd Edition.
8. Websites: *www.psoriasis.org* assessed on July27th 2004; *www.cme.erep.uab.edu*
9. Sharma, P.V., *Dravyaguna Vignana*, Vol. 2
10. Swaminathan, M.S., *Food and Nutrition*, Vol., 2

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CHRONIC LIVER DISEASE AND ĀYURVEDIC MANAGEMENT - A CASE STUDY

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Abstract: Understanding and approving the individualistic approach of traditional medicine, WHO accepts single case designs as a valid evidence. Such designs are appropriate for the development of research hypotheses, testing those hypotheses in daily clinical practice and refining clinical techniques. This article is an effort in this direction to explore the efficacy of āyurvedic treatment in chronic liver disease, cirrhosis.

Introduction

Chronic liver disease is defined as one occurring for over more than 6 months. The most important of this is cirrhosis, which is one among the commonest cause of mortality. It is an irreversible alteration of hepatic architecture, characterised by diffuse fibrosis and areas of nodular regeneration. Although largely the result of alcohol abuse, it can be caused by other factors like hepatitis, non-alcoholic fatty liver disease, biliary disease and autoimmune liver disease.

Cirrhosis may be entirely asymptomatic or may present with nonspecific constitutional symptoms or symptoms of liver failure, complications of portal hypertension or both. The portal venous pressure above 12mmHg usually results in the manifestation of clinical features. This pressure is determined by the portal blood flow and portal vascular resistance. Portal venous congestion and collateral vessel formation contribute to the clinical features of portal hypertension. The most important collateral vessels are in the esophagus and stomach, which can cause severe bleeding. Imaging, particularly ultrasonography, can show features of portal hypertension and can indicate the cause.

Case summary

A 57 year old man presented with complaints of dull pain in the right hypochondriac region, loss of appetite and generalised weakness since 6 months. The symptoms manifested gradually with no history of fever, haematemesis or loss of consciousness. Patient was not a known hypertensive or diabetic. He had a habit of taking alcohol. Sleep was sound, bowel and bladder functions were normal. There was no family history of a similar disease.

The patient was well nourished and well built. He was afebrile, not anemic or cyanosed. Icterus (+), no lymphadenopathy and no clubbing. Vital signs were within normal limits. Systemic examination - CVS/RS/CNS - NAD. In alimentary system, tongue and fauces were normal. Abdomen was flabby, there was no tenderness. Liver

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was palpable. Spleen, kidneys and bladder were impalpable. No masses felt

On investigation the ESR was raised, total cholesterol was high, and LFT was abnormal (elevated bilirubin, SGOT and SGPT). MDCT scan of abdomen showed: 1) Cirrhosis of liver with portal hypertension and porto systemic collaterals at lower end of esophagus, 2) two small (6-7 mm) benign hepatic cysts in the right lobe and 3) two small (8&9 mm) calculi in left renal lower calyx

Treatment

Initially he was put on the following medicines for three weeks:

1) Paṭolakaṭurohiṇyādi kaṣāyam - 60 ml. b.d. (6 am, 6 pm)
2) Avipatticūrṇam - 5 gm morning with kaṣāyam
3) Nimbātvagādi kaṣāyam - 60 ml. b.d. (10 am, 3 pm)
4) Ārogyavardhinīvaṭi - 2 b.d. with kaṣāyam

After three weeks his S. bilirubin level was within normal limits, SGOT and SGPT also showed a shift towards normal limits. Abdomen sonography showed hepatomegaly, benign hepatic cysts and left nephrolithiasis. The patient was then admitted in the Ayurveda College Hospital, and guḍārdraka prayoga was advised as per the following schedule:

15gm of ārdraka and guḍa were crushed, mixed together and given at morning in the empty stomach. After digestion of medicine, kṣīrapeya was given and advised to follow the regimes of snehācāra. From the next day onwards the quantity of ārdraka and guḍa were increased by 15 gm every day (total 30 gm). By this method on 10th day he consumed 150 gm of each ārdraka and guḍa. The dose was continued for 20 days.

On the very next day he was discharged and abdomen sonography was done which was showed: 1) normal porta hepatis, IHBR not dilated; CBD and PV appears normal size; no collaterals identified; liver showed focal fatty liver changes with fat sparing areas, 2) two simple hepatic cysts (4.8 mm each) in the right lobe of the liver and 3) two calculi (8 mm) in the left renal calyx.

After one month the patient was given the following medicines:

1) Varanādi kaṣāyam 60 ml + Kaiśoraguggulu gulika -1 b.d.
2) Gomūtraharītaki 10 gm - at bedtime

The above medicines were continued for one month and again abdomen sonography was taken which showed: 1) Fatty liver changes without any other features in the porta hepatis and 2) Left nephrolithiasis.

Discussion

All forms of cirrhosis may be clinically silent. When symptomatic they lead to nonspecific symptoms such as anorexia, weight loss, weakness, and in advanced disease, frank debilitation. While discussing about alcoholic liver disease in ayurvedic parlance, it may not be possible to correlate the condition with a single disease explained in the classics. The concepts of raktapitta, kumbhakāmila, yakṛdudara and śopha should be appropriately conjoined to formulate the samprāpti (etiopathogenesis). The regular/chronic use of alcohol (madya) imparts vidāhi, uṣṇa and tīkṣṇa to rasa which vitiates pitta. The utkliṣṭapitta in turn vitiates rakta. The combined force of pitta and rakta, by its virtue can affect yakṛt and plīha as they are the mūla (root) of raktavāhasrotas (blood vessels). The uṣṇatva (hotness) of pitta creates pāka to yakṛt and consequently śopha also. So

at this stage there may be enlargement of yakṛt, later when vāta predominate yakṛt turns to śuṣka.

Nimbatvagādi kaṣāyam is mentioned for kumbhakāmala and is widely used in śākhāśrita kāmala or ruddhapatha-kāmala. Paṭolakaṭurohiṇyādi kaṣāyam cures kāmala, viṣa and pacify kapha and pitta. After giving these medicines, guḍārdraka was advised as hepatomegaly and hepatic cysts were persisting. This is specifically indicated in conditions like gulma, udara, śopha, kāmala, etc. This also increases agni, removes kapha and relieves śrotorodha. After the course of guḍārdraka, even though hepatomegaly and complications of portal hypertension were relieved, the cysts remained. Normally benign cysts do not create any complication but as the patient had mild discomfort in the liver area, the treatment was continued with Varanādi kaṣāyam. All these medicines are commonly used in conditions like cyst, tumours and swellings. Although the changes of cirrhosis did not reverse, the treatment became effective in relieving portal hypertension and its complications

Conclusion

Āyurvedic treatment was found very effective in chronic liver disease, cirrhosis. Though some improvements were observed in the structural changes that were contracted from the disease, significant improvement was evidenced in the functions of the liver. Appropriate knowledge regarding the interpretation of the status of doṣa and implementation of the treatment ensured affectivity of the treatment.

References

1. *Aṣṭāṅgahṛdayam*, Sūtrasthānam, Cikitsāsthānam, Kalpasthānam
2. *Rasaratnasamuccaya*
3. *Sahasrayoga*
4. *Davidson's principles and practice of Medicine*

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IVDP - LUMBAR CANAL STENOSIS - A TREATMENT EXPERIENCE

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Abstract: "Back ache, which was considered as an ancient curse, is now known as a modern international epidemic." Statistics say that there is no one in this world who has not suffered from low back ache at least once in their life. In the present scenario, back ache has become so common that around 60% of the clinical attendance in an āyurvedic setting comprise low back ache. This paper is a treatment experience of IVDP - Lumbar canal stenosis by āyurveda.

Back-ache is the most common cause of disability in patients under 45 years of age. Irregular food habits, withholding of natural urges, poor posture management in childhood, lack of proper exercises, stress all these contribute to this. Principally postural defects, overloading and abrupt unbalanced movements are responsible for back ache.

Modern medicine has little to offer in back pain management. Added to this is the lack of proper understanding about the underlying mechanisms that lead to back pain. In 78% men and 89% women specific cause was not found. Even though in most cases the pain is attributed to factors like disc prolapse and arthritis in facet joints, the exact pathology is still poorly understood. Many causes are attributed to intractable back pain viz. primary spine disease (e.g. disk herniation, degenerative arthritis), systemic diseases (e.g. metastatic cancer), and regional diseases (e.g. aortic aneurysm). Even when anatomic defects - such as vertebral osteophytes or a narrowed disk space - are present, clinical disease cannot be assumed since such defects are common in asymptomatic subjects also. Conditions like tuberculosis of spine (Potts disease), carcinomas, fracture (early stages) are managed better in modern medicine.

Case details

A male patient aged 30 who was an IT professional, was presented to my OPD with following presentations:

Pain in the low back radiating to bilateral lower limbs predominantly left leg for the last 18 months. It was associated with burning sensation in the outer aspect of the left thigh and difficulty to sit and walk. The pain aggravated while walking. He was apparently normal one and half years back. Following a long bus journey, he was unable to get down from the

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bus due to pain in the low back. The following week he was totally bedridden due to pain and was admitted to a medical college; where he was subjected to MRI which revealed diffuse posterior prolapse of inter-vertebral discs at L4-L5, L5-S1 causing thecal sac compression and canal stenosis (Fig. I). He was advised surgery; he did not want to undergo surgery. Then he underwent āyurvedic treatment in two different hospitals which did not give him relief. He also tried some unconventional treatments like marmavaidyas etc. which only helped in aggravating the pain. Further he underwent physiotherapy for a month with no relief.

On examination

The patient was a tall, poorly built male with normal vitals. CVS, RS were WNL. There was gross scoliosis in the thoraco-lumbar region (angle $<20^0$ -Cobbs method). The muscles in both lower limbs were slightly atrophied due to chronic immobility. The power of extensor hallucis (EHL) muscle was less on the left compared to the right. Deep tendon reflexes - ankle jerk was slightly impaired on left side; however there was no history of urinary incontinence or retention. SLR test was positive on the left side.

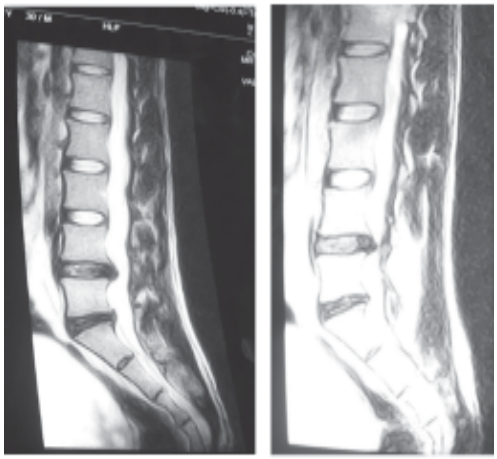

Fig. I
MRI showing the disc prolapse that caused canal narrowing

The movements of the lumbar spine were restricted in all aspects. Sensation - he had paraesthesia over posterior aspect of the thigh (L5 - S1dermatome). He had constipation. The mental state of the patient was pathetic. Frustration and feeling of worthlessness was obvious from the initial interview and the patient was showing features of depression. The effect of immobility caused the mental state of the patient further aggravates the problem. Stress always lowers the pain threshold thus adding agony to the patient.

Apart from these modern parameters, the patient had following features: Ruja (pain) in kaṭi (hip and loins), pāda (foot), jaṅgha (the calf of the leg) and ūru (thigh), difficulty in walking and sitting, dāha (burning sensation) in lateral aspects of the thigh, aruci (anorexia), vibandha (constipation), kārśya (emaciation) and śoka (sorrow). Here all these symptoms point out to the vitiation of vāta in the hips and loins and as well as in its sthāna i.e. pakvāśaya (intestine). The dāha (burning sensation) can be considered as the manifestation of āśayāpakarṣa gati (intestinal abnormal movement) that is caused by vitiated vāta. The role of kapha also should be considered here because in majority of the cases it is seen as a factor that causes mārgāvaraṇa (obstruction to the channels) to vāta in these areas.

The patient was diagnosed considering the following facts. Vāta-prakopaka-āhāra (vāta vitiating diets) and vihāra (prolonged sitting and journeys), leading to vitiation of vata in its

sthāna (seats), vimārgagamana (improper movement) - sthānasamśraya in kaṭi (improper postures etc. causing the srothodusṭi there) - leading to pain and other manifestations. He was admitted in the IP and following treatments were administered.

Medications

- Rūkṣasveda with Kolakulathādi cūrṇam - 7 days
- Snehapāna with Guggulutiktaka ghṛtam - 6 days followed by virecana with Sindhuvāra eraṇḍa tailam
- Kaṭīvasti with Muriveṇṇa - 7 days
- Pizhicil with Dhānvantaram tailam - 14 days
- Kālavasti with Eraṇḍamūlādi
- Katīvasti and bandage - 14 days.

Internal medications

- Gandharvahastādi kaṣāyam
- Rāsnāśunṭhyādi kaṣāyam
- Ekāṅgavīrarasa tablet.
- Sindhuvāra eraṇḍa tailam
- Ṣaḍdharaṇa cūrṇam
- Guggulutiktaka ghṛtam
- Sahacarādi kaṣāyam
- Kārpasāsthyādi tailam mezhukupākam (internally)
- Rāsnādaśamūla ghṛtam

BSE (Back Strengthening Exercises) were advised and followed up for 3 months.

Result

After initial course of the treatment the patient had significant relief from the low back pain and pain in bilateral lower limbs. There was no claudication pain in the thoraco lumbar spine. Another course of treatment was done after three months following which the patient was pain-free and started attending to work (Fig. II).

Discussion

The patient was treated purely on āyurvedic lines. The line of management was planned considering the following parameters: Vāta located in the intestine, in the hips and loin and emaciation due to the disease (Pakvāśaya-gata-vāta, kaṭyāśṛta-vāta and vyādhijanya-kṛśatva)

Targets

- Vātanulomana (correcting vata)
- Agnidīpana (promoting digestive fire)
- Bāhya and ābhyantara snehana (Internal and external oleation)
- Correction of the structural deformity
- Vātasthānacikitsa
- Bṛmhana (Nourishing)
- Balavardhana (Strengthening)
- Prevention of recurrence

The treatment of back pain should always include treatment for pakvāśayagatavāta

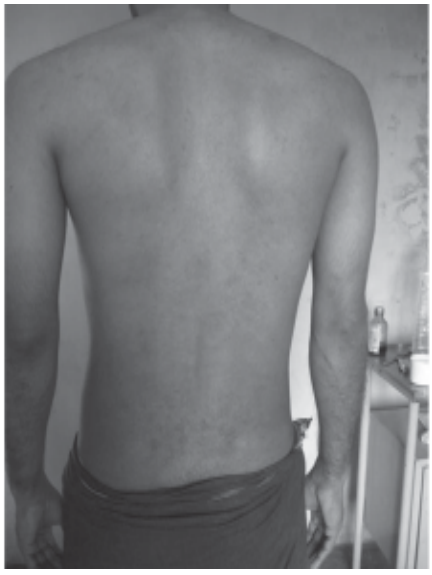

Fig. I
Scoliosis corrected

(vitiated vāta located in the intestine) hence vātanulomana (correcting vāta vitiation) must be done on a regular basis. Initially, rūkṣa (roughing) therapy was advised because it is seen in similar cases of the involvement of kapha. Kapha has a role in this disease as it causes mārgāvaraṇa (obstruction to the paths) in the area leading to sthānasamśraya (dislocation) of vitiated vāta. Also it is told that "bṛhmyāmstu mṛdu laṅghayet" (those which are supposed to nourish should be treated with lightening measures)

The patient started feeling relief from catching pain in the low back as well as felt lightness of the body after 7 days of cūrṇasveda (fomentation with medicated powder). Internally, vāta-pacifying drugs viz. Gandharvahastādi kaṣāya, Sindhūvāra eraṇḍa tailam were given daily in the early morning. During these days, Rāsnā-śuṇṭhyādi kaṣāyam with Ekāṅgavīra rasa tablet were given at noon and evening, following which, Ṣaḍdharaṇa cūrṇam was given for 5 days.

After rūksaṇa (roughing treatment) and agnidīpana (promoting digestive fire), snehapāna (internal oleation) was planned with Guggulutiktaka ghṛta considering the chronicity of the disease. The patient tolerated snehapāna very well and a maximum dose of 200 ml was given on the 6th day following which samyaksnighdha lakṣaṇās (symptoms of proper oleation) was found. Svedana (sudation) was done in the form of patrapoṭalasveda for 3 days with Koṭṭam-cukkādi tailam, followed by virecana (purgation) with Sindhuvāra eraṇḍa tailam 25 ml. There were 6 vegas (motions) in purgation, the patient was put on samsarjanakrama for the next seven days during, which kaṭīvasti was done with Muṛiveṇṇa.

Kaṭīvasti helps in bringing down the muscle spasm that occurs due to disc prolapse. Kāya-seka was planned next considering the vātaprakopa, with Dhānvantaram taila for 14 days following which scoliosis was totally corrected and the patient had almost complete relief from the pain.

Kālavasti with Eraṇḍamūlādi was done and was tolerated well by the patient. By this time the patient was able to sit without pain and was able to walk with freedom. In the rest period kaṭīvasti was repeated followed by bandage daily for next 10 days.

Internal medications were given according to the condition of disease at different stages. Rāsnāśuṇṭhyādi kaṣāya was found to be very effective in the initial stages of neck as well as back pain. After snehapāna and virecana, Kārpāsāsthyādi tailam was given as śamana-sneha (pacificatory oleation) for a period of 14 days and was found to be effective in bringing about snehana (oleation) and vāta-kapha śamana (pacification of vāta and kapha). Rāsnā-daśamūla ghṛtam was given for bṛmhana (nourishment) and balavardhana (strengthening) after the treatment procedures.

Caraka in Vātavyādhicikitsa advises to do the treatment repeatedly in case of longstanding diseases. Hence another course of treatment was done after 3 months leaving snehapāna, following which the patient was totally free from pain in the low back and lower limbs. He was able to walk and sit properly. During the course of treatment as well as the rest period, strict pathya (regimen) was advised including hard bed and all vāta-prakopaka-āhāra and vihāra (vāta vitiating diets and activities) were restricted. Patient was also advised not to take stairs, as climbing down the stairs will put much stress on the low back.

Lumbar canal stenosis

Lumbar spinal (canal) stenosis, defined as narrowing of the spinal canal with compression of the nerve roots, may be congenital or (more commonly) acquired. It most frequently results from enlarging osteophytes at the facet joints, hypertrophy of the ligamentum flavum, and protrusion or bulging of intervertebral disks. Lumbar spinal stenosis may produce symptoms by directly compressing nerve roots or by compressing nutrient arterioles that supply the nerve roots.

Essentials for diagnosis

- Most patients are older than 60 years.
- Presenting symptom is often back-pain radiating to the buttocks and thighs.
- Pain often interferes with walking (neuro claudication) and worsened by lumbar extension.
- Back and leg pain often associated with numbness and paresthesia.
- Preservation of pedal pulses helps exclude vascular claudication.
- Diagnosis best confirmed by MRI.

Symptoms and signs

- Patients typically complain of either leg pain or trouble walking.
- The pain may originate in the low back but will extend below the buttock into the thigh in nearly 90% of patients.
- In approximately 50% of patients, the pain will extend below the knee.
- The pain characteristically worsens with walking.
- The pain can also be brought on by prolonged standing. Some describe these neuroclaudication symptoms as developing 'spaghetti legs' or 'walking like a drunken sailor'; because the lumbar spinal canal volume increases with back flexion and decreases with extension, some patients observe that they have fewer symptoms walking uphill than down.
- The back and lower extremity examination in patients with lumbar spinal stenosis is often unimpressive. Fewer than 10% have a positive straight leg raise sign, 25% have diminished deep tendon reflexes, and 60% have slight proximal weakness.
- The preservation of pedal pulses help distinguish the 'pseudoclaudication' of spinal stenosis from true claudication caused by vascular insufficiency.
- Symptoms of bilateral leg weakness (from multiple lumbar nerve root compressions) or of saddle area anesthesia, bowel or bladder incontinence, or impotence (indicating multiple sacral nerve root compressions) indicate a cauda equina process.

Summary

- Back pain is the most common cause of disability below 45 yrs of age.
- A precise diagnosis in modern line cannot be made in the majority of cases
- The differential diagnosis is broad and includes muscular strain, primary spine disease (e.g. disk herniation, degenerative arthritis), systemic diseases (e.g. metastatic cancer), and regional diseases (e.g. aortic aneurysm).
- Lumbar canal stenosis most frequently results from enlarging osteophytes at the facet joints, hypertrophy of the ligamentum flavum, and protrusion or bulging of intervertebral discs.

- Always look for significant or progressive neurological deficits which may need urgent surgical interventions.
- Once such complications are excluded by proper clinical examination, diagnose the case on pure āyurvedic lines.
- Apart from giving routine śamana (pacifying) medicines, vātasthānacikitsa should be given prime importance.
- Bāhyasnehana (external oleation) especially kāyaseka (body irrigation) has tremendous effect in correcting functional scoliosis.
- Vasti, especially kāla or karma vasti has a definite role in management of back pain.
- Customized BSE should be advised to patients after the treatment for strengthening the paraspinal, pelvic as well as leg muscles, which in turn can efficiently prevent the recurrence.

References

1. *Charakasamhita*, Cikitsasthana
2. *Ashtangahrdaya*. Sutra and Cikitsasthanam
3. *Sahasrayoga*
4. *Sidha Bheshaja Manimala*
5. *Current Medical Diagnosis*, 45th edition.
6. *Harrisons Principles of Internal Medicine*, 17th edition
7. John Ebnezar, *Text book of Orthopedic Medicine*, 3rd edition.
8. Websites: *www.spine-health.com; www.medscape.com; www.athleticadvisor.com*

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ŚATĀVARĪLEHYAM AND AŚOKĀRIṢṬAM IN IDIOPATHIC INFERTILITY IN FEMALE - A CLINICAL TRIAL

C.M Jain[1] and K. Bharathi[2]

Abstract: By definition, infertility is failure to conceive over one year of continuous exposure to regular, unprotected coitus. Infertility may be due to ovulatory dysfunction, imbalance of pro gestational hormones or disturbance in hypothalamo-pituitary-ovarian axis, cervical mucus hostility etc. and these factors cannot be detected accurately on clinical or laboratory investigation. There are established regimens for all cases of infertility except idiopathic infertility. In āyurvedic classics, many single and compound formulations are advocated for overall management of infertility. Present study is taken up with Śatāvarīlehyam and Aśokāriṣṭam as internal medicines for clinical evaluation in idiopathic infertility cases.

Introduction

WHO has defined it as the failure to conceive over one year period of continuous exposure to normal unprotected coitus regularly, during the appropriate period of menstrual cycle. Male is directly responsible for infertility in 30% of the cases, female in 30% cases, both are responsible for 30% and remaining 10% comes under the unexplained group. The incidence of idiopathic infertility has risen from 10% to 20% in the past decade.

The condition 'infertility' is described under the heading 'strīvandhyatva' in Hāritasamhita. In Bṛhattrayī also, some of the yonīvyāpat conditions are explained as having infertility as a cardinal feature such as apraja, karṇini, acaraṇa, etc. and stated that all the yonīvyāpats if left untreated leads to vandhyatva. Hārita has been explained the reasons for vandhyatva viz. garbhakośabhaṅga (reproductive tract abnormalities), dhātukṣaya (weakness of body tissues), balakṣaya (loss of strength) and garbhasrāva (abortion).

Well-established treatment is available for all explainable causes of infertility including fallopian tubal block. Satisfactory treatment is not available in any system of medicine for idiopathic infertility. Hence, the present study was taken up to evaluate the efficacy of Śatāvarī lehyam and Aśokāriṣṭam in idiopathic infertility. Śatāvari is the drug having synonym 'bahusuta' and well-prescribed and popular drug for infertility management. Aśoka is the drug proved effective in stimulating endometrium

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and ovary on experimental studies and having positive action on entire reproductive system. Hence, these two compound drugs were selected for the present study.

Material and methods

The study was carried out in 35 cases. All the cases were recruited according to the strict selection criteria and drawn from OPD of A.L. Research Centre for Āyurveda, VHS Medical Campus, Chennai and OPD of Prasūti & Strīroga, and OPD of National Institute of Āyurveda, Jaipur, after thorough clinical exami-nation and investigations.

Sample size and methods:- a) number of samples - 35; b) design of study - open trial; c) number of groups - one.

Drug schedule and dosage:- a) Śatāvarīlehyam - 10 gm b.d. with milk - 1 hour before food and b) Aśokāriṣṭam - 20ml b.d. with equal water - 1 hour after food.

Duration of treatment:- 3 months

Follow-up:- Once in a month, i.e. 30th, 60th and 90th day.

Inclusion criteria

- Female in age group of 20-35 years with minimum one year of regular unprotected sexual life
- Patients of primary or secondary infertility
- Patients in whom the exact cause of infertility could not be detected

Exclusion criteria

- Age below 20 and above 35 years
- Surgical causes of infertility like Tubal block, Uterine myoma, Uterine anomalies.
- Patients with explainable causes of infertility such as genital tuberculosis, genital malignancy and hydrosalpinx
- Cases with local lesions like cervical erosion, cervical polyp and cervicitis

TABLE 1
Results of the study in relation with age, type and duration of infertility

Description	Responded		Not responded		Total
	No	%	No	%	
1. In relation with age					
20 - 25 years	02	06.89	02	06.89	04
26 - 30 years	11	37.94	05	17.24	16
30 - 35 years	06	20.70	03	10.34	09
Total	19	65.53	10	34.47	29
2. Type of infertility					
Primary infertility	11	37.93	07	24.15	18
Secondary infertility	08	27.58	03	10.34	11
Total	19	65.51	10	34.49	29
3. Duration of Infertility					
2 - 3 years	05	17.24	01	03.45	06
3 - 4 years	08	27.58	03	10.35	11
4 - 5 years	05	17.24	04	13.79	09
>5 years	01	03.45	02	06.90	03
Total	19	65.51	10	34.49	29

- Patient suffering with any severe systemic illness

Assessment criteria

- Responded - Patient who conceived during treatment can be considered as responded
- Not responded - Patient who do not conceive is considered as not responded

Source of drug:- IMPCOPS, Chennai

Observations and discussion

35 cases had taken up for the study. of which, 19 (65.52%) cases responded and 10 (34.48%) cases did not respond, 06 cases were dropped out due to irregular follow-up (Table 1).

TABLE 2
Table showing incidence of age, infertility, duration, prakṛti and occupation

Description	No.	%
1. Age (in years)		
- 20 - 25	06	17.16
- 26 - 30	18	51.42
- 31 - 35	11	31.42
2. Incidence of infertility		
- Primary	23	65.71
- Secondary	12	34.29
3. Duration of infertility (in years)		
- 02 - 03	07	20.00
- 03 - 04	13	37.16
- 04 - 05	11	31.42
- Above 5 years	04	11.42
4. Incidence of prakriti		
- Vāta	-	-
- Pitta	-	-
- Kapha	-	-
- Vātapitta	17	48.57
- Pittakapha	12	34.28
- Vātakapha	06	17.15
- Sama	-	-
5. Incidence of occupation		
- House wife	11	31.42
- Desk work	12	34.28
- Labour	03	08.57
- Field work	09	25.73
- Fieldwork with physical labour	-	-

Majority of the patients taken up for the study were in 26-30 years of age group (51.42%), with primary infertility (65.71%) and 3-4 years duration of infertility (37.16%) and vātapitta prakṛti (48.57%) and desk works (34.28%). (Table 2)

The main ingredient of Aśokāriṣṭam is aśoka (*Saraca asoca*), and it is śatāvari (*Asparagus racemosus*) in Śatāvarīlehyam. Both the drugs are found useful in infertility on pharmacological screening and clinical trails.

Aśoka

Aśoka (*Saraca asoca*) is a well prescribed drug in female disorders. On pharmacological screening, the drug found to have uterotonic, anti-tumour properties. A clinical study was conducted on 20 patients of oligomenorrhoea, in which a proprietary herbal preparation consisting *S. asoca* as one of the ingredients, was administered in doses of 2 tsf b.d. for three months and then followed up at regular intervals for one month. Out of 20, 4 patients conceived during study period, which indicates that the preparation is beneficial in infertility and scanty menstruation[1]. It is containing glycoside principles, non-phenolic, sapogenetic, glycoside, sterols and aliphatic alcohols, leucopelargonidin-3-0-â-D-glucoside, leucopelargonidin or leucocyanidin (bark)[2].

Śatāvari

Śatāvari (*Asparagus racemosus*) is having galactagogue, aphrodisiac, diuretic properties, antiabortifacient (Satavarin I) antioxytocic (Satavari IV) antibacterial, anti-cancer, phagocytic, antiviral pharmacological activities increased the weight of mammary gland or

through the pituitary or pituitary adrenal axis due to secretion of prolactin and ACTA. It produced galactagogue effect on buffaloes where lactation was much increased. The crude alcoholic extract of root, exhibited gain in weight of mammary glands in post-partum and estrogen primed rats and gain in weight of uterus in oestrogen primed group of animals.

In idiopathic infertility asoka corrected endometrial and ovulatory dysfunction through its uterotonic properties. Śatāvari is anti-abortifacient and galactogague and have positive influence of hypo-thalamo pituitary ovarian axis. Hence these two drugs in synergy acted in idiopathic infertility cases and facilitated conception.

Conclusion

- Aśokāriṣṭam and Śatāvarīlehyam are well prescribed pro-gestational drugs
- Study carried out in 35 number of cases, among them 19 cases responded, 10 cases not responded and 06 cases dropped out
- Uterotonic activity of aśoka and pro-implantation activity of śatāvari may be the possible reasons for efficacy of the drugs.

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References

1. Venugopal, S., *Effect of Eve care in oligomenorrhoea*, Antiseptic, Vol.95 (10), pp 329-330, 1998
2. Anonymus, *Data base on Medicinal Plants*, Vol.3 pp 76-79, Central Council for Research in Ayurveda & Siddha, Dept. of AYUSH, New Delhi.

Bibliography

1. Ambikadatta sastri, *Susrutasamhita* (Ayurveda Tatvasandepika Commentary), Chaukhamba Sanskrit Series Office, Varanasi, 1972
2. Anonymous, *Wealth of India*, Publications and Information Directorate, CSIR, New Delhi, 1985
3. Atridevagupta, V., *Astangahridayam* (Vidyotini Hindi commentary, Chaukhamba Sanskrit Series Office, Varanasi, 1970
4. Dutta, D.C., *Textbook of Gynecology*, 2nd Edn., New Central Book Agency Pvt. Ltd, Calcutta
5. Kasinatha Sasthri, *Carakasamhita* (Vidyotini Hindi Commentary, C.S.S.O. Varanasi, 1963
6. Malhotra, *Pharmacological investigations of certain Medicinal plants & compound formulations used in Ayurveda & Siddha*, CCRAS, New Delhi, 1996
7. Tewari, P.V., *Ayurvedic prasutitantra evam stree roga*, Part-II, Chaukhambha Orientalia, Varanasi, 1986.

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ALLERGY IN UNANI PERSPECTIVE

Mursaleen Naseer[1], A. B. Khan[2] and M. H. Hakim[2]

Abstract: The concept of allergy in Unani System of medicine seems to be new. But if we trace back the historical genesis of this disease, we will come to know that the basic concept is an ancient one. In Tibb-e-Unani, allergy is not as such reported but it is known in terms of *Sual* (cough), *Attas* (sneezing), *Hikka* (pruritus), *Hikkaul unf* (nasal itching) and *Shara* (urticaria). In context of *Zequn Nafas* (asthma), most of the Unani scholars have mentioned dust particles and smoke as the causative factors.

Little is known about the role of eosinophils. Eosinophils live much longer than neutrophils, and unlike neutrophils, tissue eosinophils can re-circulate. In invasive helminthic infections, such as hookworm, schistosomiasis, strongyloidiasis, toxocariasis, trichinosis, filariasis, echinococcosis, and cysticercosis, the eosinophil plays a central role in host defense. Eosinophils are associated with bronchial asthma, cutaneus allergic reactions, and other hypersensitivity states (Isselbacher *et al*., 2005).

Last three decades have seen renewed interest in the eosinophil as modern immunologic and biochemical techniques have been applied to the study of this enigmatic cell (Spivak, 1984). As a result of their potential role in asthma, eosinophils have received considerable attention from the last decade (Beutler Ernest *et al.*, 2001).

Hippocrates (460- 377 BC) in the book Abizeemia has written that worms developed mostly in the season of *kharif* (autumn) [Zakaria Rhazi]. It shows the seasonal variation.

Galen (132-201 AD), in his book Kitabul Alamat, has written the symptoms of worms as decreased appetite, weakness, nausea, and dry cough. He has said that *Hayyat* (ascaris) are common in children in comparison to adults while more in adults in comparison to older ones (Misbahuddin, 2002). Among Arab Physicians Ali Bin Rabban Tabri (810-895AD) was the first physician who described *Kharish* (itching) as parasitic disease in his famous book Moalija-e-t Buqratia (Mohammad Tabri, 1995).

Rhazes (865-925AD), in his book Kitabul Mansoori describes the clinical features of *Zukam* (coryza) as irritation and itching in nose and sneezing. In context of *Daulfeel* (elephantiasis), he has mentioned swelling of lower limb, muddy colour of swelling and development of

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varicose veins (Zakaria Rhazi, 1991). In Kitabul Hawi, he has mentioned dry cough as the symptom of *Deedan-e-Mustadir* (round worms). While describing the types of worms, under the heading of *Alamat* (symptoms), he has written headache, vertigo and episodes of epilepsy (Zakaria Rhazi), which are quite similar to the clinical features of Neurocysticercosis.

Avicenna (980-1037AD), in his book Al Qanoon Fit Tib has mentioned smoke among the causes of *Zeequn Nafas* (asthma). In context of *Attas* (sneezing), he has advised to abstain from dust and smoke to prevent sneezing. While describing the symptoms of worms, he has mentioned breathlessness. It is worth mentioning that he has also written about difficulty in speech (dysarthria) in the symptoms of worms (Ghulam Husnain, 1303 H), It reveals that Unani Scholars were having the concept of Neurocysticercosis. Under the heading of *Alamat* (symptoms) of worms he has written oedema of body and swelling of testes, which resembles the signs of filariasis. In context of cough, he has mentioned dust particles and smoke as the aetiological factors. It is noteworthy that he has explained about seasonal variation in the intensity of cough during different seasons. He has mentioned ingestion of *Ghaleez aur Raddiul kemoos* (heavy and adultrated) food as one of the causes of *Hikka* (pruritus) [Ghulam Husnain, 1303 H], which reflects the concept of allergy to food.

Ismaeel Jurjani (12th century AD), in his book Zakhira-e-Khwarzam Shahi has explained one primary and nine secondary causes of *Zeequn Nafas* (asthma). In secondary causes he has listed smoke and ingestion of cold things. In context of *Surfa* (cough), he has written three causes, one of them is inhalation of noxious substance like dust. While describing *Deedan-e-Ama* (intestinal worms), he has written signs and symptoms like gastric irritation, intestinal cramps and loose stool. It is noteworthy that he has written that, when worms affect lungs it causes dry cough (Jurjani, 1878), which has presently described as Loffler's syndrome.

Najib- al-din Samarqandi (death 1222AD) has mentioned the type *Sara Deedani* (parasitic epilepsy) under the heading epilepsy due to related organs. He has said that epilepsy occurs due to intestinal worms because bad, toxic and purulent fluid and vapours from these worms move towards brain and cause discomfort there, which leads to spasm and abnormal activities of brain (Kabiruddin, 2000).

Akbar Arzani (death 1722 AD), in his book Tibb-e-Akbar wrote dry cough as the symptom under the heading of *Deedane Ama* (intestinal worms). Hakeem Azam Khan (1813-1902 AD) in his book Akseer-e- Azam has written *Sara* (epilepsy) and *Khafqan* (palpitation) as the complications of intestinal worms. Under the heading of method of diagnosis, he has mentioned *Sara* (epilepsy), *Ghashi* (syncope) and *Warm-e-Khusien* (orchitis). These signs and symptoms are also found in the diseases causing eosinophilia. While describing the symptoms of *Hayyat* (ascaris), he has written dry cough as one of the symptoms. Under the heading of method of diagnosis, he has written dust particles and smoke as the precipitating factors of cough (Azam Khan).

Hakeem Ajmal Khan (1868-1927AD) describes two types of *Zeequn Nafas* (asthma), dry and wet. In dry asthma, there is only the spasm of bronchioles while in wet one; there is accumulation of phlegm also. According to him, there are three types of intestinal worms. He has mentioned nausea and vomiting as

symptoms of intestinal worms (Mohammad Ajmal, 1995).

Conclusion

Allergy is not reported as such in Unani classical text but while turning the pages of Unani history, it is revealed that different causes leading to allergic conditions have been well described by Unani scholars. The Unani text also reflects the concept of seasonal variation and allergen in context of allergy. Moreover, the well known clinical entities viz. neurocysticercosis and Loffler's syndrome, which are the important causes of allergic asthma, have been defined in right perspective in ancient text. Hence, it is quite evident that the basic concept of allergens was present since antiquity.

References

1. Arzani, Mohd. Akbar, *Tibb-e-Akbar* - Urdu Translation, Vol. II, pp 54, 700, Matba Munshi Gulab Singh, Lucknow, 1893.
2. Beutler Ernest *et al*, *Williams Hematology.* 6th Edn., P 780, 785,786 and 789-790, 2001
3. Isselbacher, Kurt J. *et al*, *Harrison's Principles of Internal Medicine*, 16th Edn., Vol. I & II, pp 356,1201,1263,1508 and 1952-1953, 2005.
4. Jurjani, Shaikh Ismaeel, *Zakhera-e-Khawarzam Shahi*, (Urdu Translation by Hadi Hussain Khan), Vol. II., pp 18, 1013-1014, 1027 and 1264, Munshi Naval Kishore, Lucknow, 1878
5. Kantoori, Ghulam Husnain, *Al-Qanoon Fit-Tib* - Urdu Translation, Vol-3, (1303 H.) pp: 72, 176-177, 226-227, 279 and 294-295; Vol. IV, pp 399-400, Matba Munshi Nawal Kishore, Lucknow,
6. Kabiruddin and Mohd., *Al-Akseer*, Vol. I&II, Al-Shifa Gulbarga Faisalabad, 1425-1433, pp 436, 453, 1108-1109
7. Khan, Hakim Mohd Azam, *Akseer-e-Azam*, IInd Edn., Vol. II & IV, pp 146-147, 416, Munshi Nawal Kishore, Lucknow.
8. Khan, Mohammad Ajmal and Bayaze Ajmal, 1st Edn., pp 103-104, Aejaz Publishing House, N. Delhi, 1995
9. Kabiruddin and Mohd., *Shrah Asbab wa Alamaat* (Urdu Translation), Vol. I,II&III, pp 128, 256-257, 259, 300, 312, 380, Aijaz Publisging House, Delhi, 2000.
10. Misbahuddin, Ashraf and Modud, *Tafiliyat*, pp 14-16, 34, Hakim Ifhamullah Academy, Aligarh, 2002.
11. Rhazi, Abu Bakar Mohammad Bin Zakaria, *Kitab Al-Mansoori*, Urdu Translation, pp 350,351,395, Central Council for Research in Unani Medicine, New Delhi, 1991.
12. Razi, Abu Bakar Mohd. Bin Zakaria, *Kitab-ul-Hawi* - Urdu Translation, Vol-XI, pp 9-10, 24, Central Council for Research in Unani Medicine, New Delhi.
13. Spivak, J.L., *Fundamentals of Clinical Haematology*, 2nd Ed., pp135-147, 1984
14. Tabri Abul Hasan Ahmad Bin Mohammad, *Almualijat-e- Buqratia*, P 206, Central Council for Research in Unani Medicine, New Delhi, 1995.

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SYRINGOMYELIA (ARNOLD-CHIARI MALFORMATION) WITH SYRINX - A CASE STUDY

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Abstract: Syringomyelia is a generic term referring to a disorder in which a cyst or cavity forms within the spinal cord. This cyst, called a syrinx, can expand and elongate over time, destroying the spinal cord. Since the spinal cord connects the brain to nerves in the extremities, this damage may result in pain, weakness, and stiffness in the back, shoulders, arms, or legs. In some cases paralysis occurs. Other symptoms may include headaches and a loss of the ability to feel extremes of hot or cold, especially in the hands. Each patient experiences a different combination of symptoms. These symptoms typically vary depending on the extent and, often more critically, to the location of the syrinx within the spinal cord.

Introduction

Syringomyelia has a prevalence estimated at 8.4 cases per 100,000 people. Signs of the disorder tend to develop slowly; although, sudden onset may occur with coughing, straining, or myelopathy. Other, more common disorders share the early symptoms of syringomyelia. In the past, this has made diagnosis difficult. The advent of magnetic resonance imaging (MRI) has significantly increased the number of syringomyelia cases diagnosed in the beginning stages of the disorder. If not treated surgically, syringomyelia often leads to progressive weakness in the arms and legs, loss of hand sensation, and chronic, severe pain.

The cause

Cerebrospinal fluid normally flows around the spinal cord and brain transporting nutrients and waste products. It also serves to cushion the brain. Excess cerebrospinal fluid in the central canal of the spinal cord is called hydromyelia. When the fluid dissects into the surrounding white matter, the term syringomyelia is applied. As these conditions coexist in the majority of cases, the term syringohydromyelia is applied.

A number of medical conditions can cause an obstruction in the normal flow of cerebrospinal fluid, redirecting it into the spinal cord. For reasons that are now becoming clear, this results in syrinx formation. Cerebrospinal fluid fills the syrinx. Pressure differences along the spine cause the fluid to move within the cyst. It is this continual movement of fluid that results in cyst growth and further damage to the spinal cord.

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Different origins: - There are two forms of syringomyelia. The first major form relates to an abnormality of the brain called Arnold-Chiari malformation. This is the most common cause of syringomyelia, where the anatomic abnormality causes the lower part of the cerebellum to protrude from its normal location into the cervical portion of the spinal canal. A syrinx may then develop in the cervical region of the spinal cord. As the relationship that was once thought to exist between the brain and spinal cord in this type of syringomyelia, it is called communicating syringomyelia. The symptoms usually begin between the ages of 25 and 40 and may worsen with straining or any activity that causes cerebrospinal fluid pressure to fluctuate suddenly. Some patients, however, may have long periods of stability. Some patients with this form of the disorder also have hydrocephalus or arachnoiditis.

The second form of syringomyelia occurs as a complication of trauma, meningitis, hemorrhage, a tumor, or arachnoiditis. Here, the syrinx or cyst develops in a segment of the spinal cord damaged by one of these conditions. The syrinx then starts to expand. This is sometimes referred to as noncommunicating syringomyelia. Symptoms may appear months or even years after the initial injury, starting with pain, weakness, and sensory impairment originating at the site of trauma.

The primary symptom of post-traumatic syringomyelia (often referred to using the abbreviation of PTS) is pain, which may spread upward from the site of injury. Symptoms, such as pain, numbness, weakness, and disruption in temperature sensation, may be limited to one side of the body. Syringomyelia can also adversely affect sweating, sexual function, and, later, bladder and bowel control. A typical cause of PTS would be a car accident or similar trauma involving a whip-lash injury.

What can make PTS difficult to diagnose is the fact that symptoms can often first appear long after the actual cause of the syrinx occurred, e.g., a car accident occurring and then the patient first experiencing PTS symptoms such as pain, loss of sensation, reduced ability on the skin to feel varying degrees of hot and cold, a number of months after car accident.

Some cases of syringomyelia are familial although this is rare. In addition, one form of the disorder involves the brainstem. The brainstem controls many of our vital functions, such as respiration and heartbeat. When syrinxes affect the brainstem, the condition is called syringobulbia.

Symptoms

Syringomyelia causes a wide variety of neuropathic symptoms due to damage of the spinal cord. Patients may experience chronic pain, abnormal sensations and loss of sensation particularly in the hands. Some patients experience paralysis or paresis temporarily or permanently. A syrinx may also cause disruptions in the parasympathetic and sympathetic nervous systems, leading to abnormal body temperature or sweating, bowel control issues, or other problems. If the syrinx is higher up in the spinal cord or affecting the brainstem as in syringobulbia, vocal cord paralysis, ipsilateral tongue wasting, trigeminal nerve sensory loss, and other signs may occur. Rarely, bladder stones can occur in the onset of weakness in the lower extremities. Classically, syringomyelia spares the dorsal column/medial lemniscus of

the spinal cord, leaving pressure, vibration, touch and proprioception intact in the upper extremities.

Diagnosis

Now Magnetic Resonance Imaging (MRI) is used to diagnose syringomyelia. This test will show the syrinx in the spine or any other conditions, such as the presence of a tumor. MRI is safe, painless, and informative and has greatly improved the diagnosis of syringomyelia.

Treatment

Surgery: - Usually surgery is only viable treatment for syringomyelia. Not all patients will advance to the stage where surgery is needed. Evaluation of the condition is often difficult because syringomyelia can remain stationary for long periods of time, and in some cases progress rapidly.

Surgery of the spinal cord has certain characteristic risks associated with it and the benefits of a surgical procedure on the spine have to be weighed up against the possible complications associated with any procedure. Surgical treatment is aimed at correcting the condition that allowed the syrinx to form. It is vital to bear in mind that the drainage of a syrinx does not necessarily mean the elimination of the syrinx-related symptoms, but rather is aimed at stopping progression. In cases involving an Arnold-Chiari malformation, the main goal of surgery is to provide more space for the cerebellum at the base of the skull and upper cervical spine without entering the brain or spinal cord. This often results in flattening or disappearance of the primary syrinx or cavity, over time, as the normal flow of cerebrospinal fluid is restored. If a tumor is causing syringomyelia, removal of the tumor is the treatment of choice and almost always eliminates the syrinx.

Surgery results in stabilization or modest improvement in symptoms for most patients. Delay in treatment may result in irreversible spinal cord injury. Recurrence of syringomyelia after surgery may make additional operations necessary; these may not be completely successful over the long term.

In some patients it may also be necessary to drain the syrinx, which can be accomplished using a catheter, drainage tubes, and valves. This system is also known as a shunt. Shunts are used in both the communicating and noncommunicating forms of the disorder. The shunt is placed into it with the other end draining cerebrospinal fluid (CSF) into a cavity, usually the abdomen. This type of shunt is called a ventriculoperitoneal shunt and is particularly useful in cases involving hydrocephalus. By draining syrinx fluid, a shunt can arrest the progression of symptoms and relieve pain, headache, and tightness. Without correction, symptoms generally continue.

The decision to use a shunt requires extensive discussion between doctor and patient, as this procedure carries with it greater risk of injury to the spinal cord, infection, blockage, or hemorrhage and may not necessarily work for all patients. Draining the syrinx more quickly does not produce better outcomes, but a shunt may be required if the fluid in the syrinx is otherwise unable to drain.

In the case of trauma-related syringomyelia, the surgeon operates at the level of the initial injury. The syrinx collapses at surgery but a tube or shunt is usually necessary to prevent re-expansion.

Drugs have no curative value as a treatment for syringomyelia. Radiation is used rarely and is of little benefit except in the presence of a

tumour. In these cases, it can halt the extension of a cavity and may help to alleviate pain.

In the absence of symptoms, syringomyelia is usually not treated. In addition, a physician may recommend not treating the condition in patients of advanced age or in cases where there is no progression of symptoms. Whether treated or not, many patients will be told to avoid activities that involve straining.

Since the natural history of syringomyelia is poorly understood, a conservative approach may be recommended. When surgery is not yet advised, patients should be carefully monitored by a neurologist or neurosurgeon. Periodic MRI's and physical evaluations should be scheduled at the recommendation of a qualified physician.

Case study

A 32 years old female presented with history of progressive weakness of right hand since past two years which was insidious in onset gradually progressive in nature where she noticed thinning of hand muscles and similar weakness in left hand. History of faciculation in right hand was present. She was also suffered with delayed perception of heat and pain in the neck at times in suboccipital region after coughing/sneezing leading to numbness of all four limbs which stayed for sometime. With these complaints she was approched to Neurosurgery OPD of NIMHANS where she was diagnosed for Syringomyelia (ACM) with Syrinx and treated accordingly. Her MRI showed hypointense lesion starting from C2 region to D8 level with tonsillor herniation with multiple septation being present. She was underwent foramen magnum decompression C1 arch excision and duroplasty on 16th April 2003. Post operative period was uneventful. Patient was recovered well and at the time of discharge she was stable, afebrile with no deficits. Later after a period of one year four months she again came with the complaints of wasting and weakness of left little finger associated with worsening of right shoulder and arm pain. On examination wasting of hypothenar emenence of left hand with ulnar clawing of little finger was present. She has been advised for MRI which shows progression of syrinx from C1 (proximal) to D10 (distally) and was advised to under go syringo-pleural/syringoperitoneal shunt. At this juncture she consulted Ayurvedic Research Unit, NIMHANS for expert opinion as well as treatment. She has been admitted at our unit for 20 days and managed with following treatment.

1. Dhānvantaram kaṣāyam - 10 ml bid with 40 ml of warm water 6 a.m and 6 p.m.
2. Dhānvantaram (101) drops - 10 drops bid along with above kaṣāyam
3. Aśvagandha Tab. - 1 tid. after food
4. Balāriṣṭam - 15ml with 30ml of water bid after food
4. Sarvāṅga abhyaṅga with Dhānvantaram tailam followed by tailadhāra with Dhānvantaram (3) for 14 days.

Follow-up treatment:

1. Dhānvantaram kaṣāyam - 10ml bid with 40ml of warm water 6 am and 6 pm
2. Dhānvantaram (101) - 10 drops bid along with above kaṣāyam
3. Aśvagandhāvalehya - 1 tsf. bid with warm milk after food
4. Ekāṅgavīr rasa Tab. - 1 tid after food
5. Yogarāja guggulu Tab. - 2 tid after food
6. Sarvāṅga abhyaṅga with Dhānvantaram tailam

After the above treatment for a period of 90 days

(including the duration of IPD treatment), patient recovered from most of her complaints. Her muscle strength was improved and wasting was arrested on left hand she was completely recovered from the pain in right shoulder and arm. At present she is continuing Dhānvantaram kaṣāyam along with Dhānvantaram (101) 10 drops and other medicines like Yogarāja guggulu, Ekāṅgavīr rasa intermittently.

References

1. Brewis, M., Poskanzer, D.C., Rolland, C. *et al*, "Neurological disease in an English city". *Acta Neurologica Scand Suppl* 24:1-89, 1966.
2. Greenberg, David, A. *et al, Clinical Neurology*. 5th Edn., Feb 9, 2002.
3. Nishida, Takayasu, *et al*. "A large bladder stone caused by syringomyelia". *Japanese Journal of Clinical Urology*, Vol.60, No. 6, pp 413-415, 2006. ISSN:0385-2393.
4. Yeom, J.S., Lee, C.K., Park, K.W, *et al* (2007). "Scoliosis associated with syringomyelia: analysis of MRI and curve progression". *Eur Spine J* 16 (10): 1629–35; doi:10.1007/s00586-007-0472-1. PMID 17701226.

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IMMUNITY AND ALLERGY WITH SPECIAL REFERENCE TO PRAKṚTI - A LITERARY REVIEW

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Abstract: Immunity is defined as the innate tendency of body to fight against diseases. Although this has positive influence over the health of the body, negative impacts is also equally potent by manifestation of distressing symptoms, acute and chronic diseases. Too much of immunity is allergy or anūrjata. The terms 'allergy' and 'hypersensitivity' denote increased or damaging immune responses. Allergy is an immunological disorder and is defined as exaggerated response or altered reactivity of the immune system to otherwise harmless substances in the environment, when inhaled, ingested, injected or contacted. Both these phenomenon are deeply related to the prakṛti, the basic doṣa constitution of the body that plays an important role in the production of immunity as well as allergy.

Introduction

Tendency to fight diseases in a natural way is termed as immunity. Svastha, ojas and bala can be regarded as its synonyms depending upon the similarity of clinical manifestations. Immunity and allergy (anūrjata) are the two opposite sides of the same coin, one is bright other is dark, one is health and the other is disease. Two terms are defined in āyurveda: i) vyādhi-kṣamatva and ii) vyādhi-akṣmatva, former is immunity and latter is a broad term that includes allergy also. Allergy is a phenomenon resulting from diminution of one of the factors or part of the factor contributing immune effect in the body that further carries personal variation. Vyādhi-akṣamattva or diminution of vyādhi-kṣamattva is essentially lead to get diseased, but in case of allergy, specificity of etiological agents and exaggerated generalized or systemic sensitivity rule the body by virtue of which person becomes sensitized to certain etiological factor i.e. allergen and this sensitivity is reflected in a particular channel in a repeated, aggressive and emergent manner. Therefore:

$$\text{IMMUNITY} = \frac{1}{\text{ALLERGY}}$$

According to above relation, a decrease in immunity predisposes a person to allergic disorders and recurrence of allergic manifestations results in more loss of immunity in a progressive way and vice versa, hence developing a cycle of allergic events and immune loss. Status of immunity is not found similar in all individuals[1]. This vyādhi-kṣamattva is related with the prakṛti of a person and thus predisposing tendency to allergic disorders seems to be linked with the prakṛti. It can be concluded from

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the descriptions of diseases in Samhitas that although unnamed, allergy can be enumerated in congenital diseases. This disease occurs in the body due to deficiency of prakṛt bala (innate immunity). According to Cakrapāṇi, sahajabala or prākṛt bala appears from the time of birth[2]. According to him, a newborn resembles to its parents from the time of birth in physical and psychological aspects. Prakṛti is also originated at the time of embryogenesis according to the predominance of doṣas. This clearly indicates that sahajabala is dependent on prakṛti and bala is denoted as synonym of vyādhi-kṣamattva. So, vyādhi-kṣamattva, prakṛti and bala are interrelated with each other.

Prakṛti

According to Suśurtasamhita, all the doṣas are found in different proportions at the time of fertilization in the uterus[3]. Doṣas dominating in quantity as well as quality decide the prakṛti of foetus/neonate. Prakṛti, being the cause of both vyādhi-kṣamatva and sahajabala, is mandatory to study its all aspects with a deeper concern that it could be decided that persons of which prakṛti are more predisposed to allergies. There are seven types of prakṛtis[4].

Persons of different prakṛti have different constitutional features depending upon the composition of respective doṣa. In a person, attributes of doṣas decide the colour, texture, firmness, mode of movements, etc. According to the composition of three doṣas, three types of ekadoṣaja prakṛti are defined elaborately in the classics. Characteristics of remaining four prakṛti in persons rely upon the mixed composition of three doṣas in the form of dvandaja and sannipātaja types.

Characteristics of śḷeṣma prakṛti:- Śḷeṣma comprises unctuous, smooth, soft, sweet, firm, dense, slow, stable, heavy, cold, viscous and clear attributes[5]. Genesis and development of all the organs takes place according to the respective attribute. Few examples are shown in Table 1. One who is having these qualities is endowed with the excellence of strength, wealth, knowledge, energy, peace and longevity.

TABLE 1
Genesis and development organs according to respective attributes in śḷeṣma prakṛti

Unctuous	:	Unctuousness of organs
Smooth	:	Smoothness of organs
Soft	:	Pleasing appearance, tenderness and clarity of complexion
Sweet	:	Increase in the quantity of semen, desire for sex act and number of procreation
Firm	:	Firmness, compactness and stability of the body
Dense	:	Plumpness and roundedness of all organs
Slow	:	Slowness in action, intake of food and movement
Stable	:	Slowness in taking initiations, getting irritated and morbid manifestations
Heavy	:	Non slippery and stable gait
Cold	:	Lack of intensity in hunger, thirst, heat and perspiration
Viscous	:	Firmness and compactness in joints
Clear	:	Happiness in the look and face, happiness and softness of complexion and voice

Characteristics of pittaprakṛti:- Pitta comprises of hot, sharp, liquid, of fleshy smell, sour and pungent attributes[6]. Physical features as well as personality are developed according to these attributes (Table 2). One who has pitta constitution is endowed with moderate strength, moderate spiritual and materialistic knowledge, wealth and accessories of life.

Characteristics of vātajaprakṛti:- Vāta is dry, light, mobile, abundant, swift, cold, rough and non slime[7]. These attributes are manifested in various forms in vātajaprakṛti persons (Table 3). Those who have these attributes possess strength, lifespan procreation accessories of life and wealth in lesser quantity.

Mixed characteristics of both prakṛti group are found in dvandvajaprakṛti individuals and all the features of three singular prakṛti are seen in samdoṣajaprakṛti.

Discussion

Samadoṣaja or sannipātaja prakṛti is the best amongst all the seven types of prakṛtis. All the three doṣas prevailing in the state of equilibrium neutralize the effect of incompatible (viruddha) substance or not suitable (asātmya) substance and helps in the sustenance of health by balancing all the constituent elements of the body. In modern science, this phenomenon is known as tolerance or neutralisation. In āyurveda both can be included in the sahaja bala and agnibala. This bala is effective to the extent that allergic reactions fail to manifest.

Dvandvajaprakṛti persons are of moderate bala and hence are of madhya sātmya. These persons sometimes combat the effect of causative factors and sometimes not. According to Caraka, ekadoṣajaprakṛti is considered the worst among all[8]. Those who are possessing ekdosajaprakṛti are relatively more predisposed to the affliction of diseases compared to that of samdoṣaja prakṛti. Cakrapāṇi has quoted them as upacārasvastha. These people are never interested in taking new diets, i.e. other than those are accustomed to be taken from the time of birth and body has a natural resistance for the new substances. Doṣas constituting prakṛti

TABLE 2

Physical features and development of personality according to respective attributes in pittaprakṛti

Hot	: Intolerance for hot things, hot face, tender and clear body, freckles, black moles, excessive hunger and thirst, quick advent of wrinkles, graying of hair and baldness, presence of some soft and brown hair on the face, head and other parts of the body.
Sharp	: Sharp physical strength, strong digestive power, intake of food and drinks in large quantity, inability to face difficult situations and glutton habits
Liquid	: Looseness and softness of joints and muscles, voiding of sweat, urine and faeces in large quantity
Fleshy smell	: Putrid smell of axilla, mouth, head and body in excess.
Pungent and sour tastes	: Insufficiency of semen, sexual desire and procreation.

are quickly vitiated on following the regimens of diet as well as behaviour those are similar to the constituency of respective prakṛti just because of presence of that very much doṣa in a somewhat higher vitiated stage as compared to normal and therefore can produce disease with a slight trigger[9].

Of the three ekadoṣajaprakṛtis, vātikaprakṛti is considered as the worst because of following reasons[9]: i) prevalence of minimum immune power or bala, ii) more probability of vātaja prakṛti persons to affliction of eighty types of vātika disorders those are almost double to the number of disorders produced from other doṣas and iii) more prompt and recurring nature of vāta doṣa[10]. Therefore, successive and comparative superiority of the prakṛti can be derived as: śḷeṣmaja > pittaja > vātaja.

Allergy or anūrjata is a congenital disorder that occurs from the time of birth because of bījadoṣa. Severity of congenital diseases again is seen according to the prakṛti of a person. As a result disease is found in a strongly manifested stage and diseased in the poorly defined situation of bala in vātaprakṛti persons. This can be exemplified by anūrjatajanya śvāsa that being a hereditary disease, is always an occurrence of kha-vaiguṇya in prāṇavahasrotas from the time of birth. Whenever there is a conjugation of nidāna-doṣa-dūṣya at the site of prāṇavaha srotas, pathogenesis of anūrjatajanya śvāsa comes into origin. Persons of vātaja prakṛti preoccupied with least of immune power are predisposed to anūrjatajajanya śvāsa in an immediate and aggressive manner. More prevalence of anūrjatajanya śvāsa in vātaja prakṛti persons seems to be justified by the phenomenon of anūrjata in which āma is produced. Āma doṣa is related with āmaviṣa because of persisting similarities between the two.

According to Caraka, viṣa (poison) occupies ten attributes[11]. Of these, light, dry, quick, clear and

TABLE 3
Attributes manifested in various forms in vātaja prakṛti

Dry	: Produces dryness, emaciation and dwarfness of the body, longdrawn, dry low, broken, obstructed and hoarse voice, always keeps awake
Light	: Produces light and inconsistent gait, action, food and movement
Mobile	: Produces unstable joints, eyes, eyebrows, jaws, lips, tongue, head, shoulder, hands and legs.
Abundance	: Talkativeness, abundance in tendons and veins
Swift	: Quick in initiations, getting irritated, and quick onset of morbid manifestations. Quick in affliction with fear, quick in likes and dislikes, quick in understanding and forgetfulness
Cold	: Intolerance for cold things, often getting afflicted with cold, shivering and stiffness
Rough	: Roughness in the hair of the head, face and other parts of the body, nails, teeth, face, hands and feet
Non-slime	: Cracking of the limbs and organs, production of crackling sound in the joints on movement

minute attributes resemble to the constitutional properties of vāta. Therefore these attributes are seen in more proportions basically and rationally in vātaprakṛti persons. Hot and tīkṣṇa resemble with those of pitta and hence found in more proportions in pittajaprakṛti persons. When āma is produced in single prakṛti persons, mostly vātaprakṛti persons are affected, secondarily affected are pittaprakṛti persons and least influence is seen in śḷeāṣmaprakṛti persons. Therefore impact of āmaviṣa is seen in different prakriti persons as: vataja > pittaja > śḷeṣmaja > dvandaja > sannipātaja.

Ūrjata is defined as a state of the body in which all the dhātus of body are found in their best of constitution or there is attainment of best ojas. Anūrjata is exactly opposite to ūrjata. With this perspective, all the attributes of ojas are seen being nurtured mostly in śḷeṣmaprakṛti persons and on contrary anūrjata or diminution of ojas is perceived mostly in persons of vātajaprakṛti. Prākṛt viṣa comprises of attributes those are opposite to ojas. Therefore maximum similarity of attributes of viṣa is found in vātaprakṛti persons as a result of which maximum influence of viṣa gets expressed in respective group. Viṣa being quick and recurring in nature, shows its effect as immediate and repeated attacks. This is clearly manifested in the anūrjatajanya śvāsa.

Analysis of sensitivity to anūrjata in different prakṛtis in context to allergy shows that disease are primarily manifested in persons of vāta prakṛti and in those involved in practices of provoking vāta (Table 4).

Conclusion

A critical analysis of the subject with view point of both sciences dictates the concept somewhat controversial because according to modern science allergy is aggravated stage of immunity. On the other hand, in āyurveda, deficiency of ūrjaskarabhāva or bala or vyādhi-kṣamatva is defined as anūrjata. In modern opinion, ratio of antibodies causing immunity gets disturbed. IgE is increased and IgA is reduced. Enhanced proportion of IgE is the chief cause of allergy. But a deep insight into the matter seems to project both terms as synonyms. According to āyurveda disproportion of doṣadhātumala is responsible for the loss of immune power and their (Igs) adequate proportionality is health. On the other hand, deficiency of IgA can be quoted as loss of immunity resulting in augmented sensitivity to the phenomenon of allergy[12]. This principle has been applied as a line of treatment in allergic disorders and accordingly reduced level of IgA is augmented and homologation is maintained by decreasing the value of

TABLE 4
Sensitivity to anūrjata in different prakṛti

Features	ST	VP	VK	PK	K	P	V
Sahana	+ + + + +	+ + + +	+ + + +	+ + + +	+ + +	+ + +	+ + +
Satva	+ + + + +	+ + + +	+ + + +	+ + + +	+ + +	+ + +	+ + +
Bala	+ + + + +	+ + + +	+ + + +	+ + + +	+ + +	+ + +	+ + +
Ojas	+ + + + +	+ + + +	+ + + +	+ + + +	+ + +	+ + +	+ + +
Vyādhi-kṣamatva	+ + + + +	+ + + +	+ + + +	+ + + +	+ + +	+ + +	+ + +
Asātmya-sahatva	+ + + + +	+ + + +	+ + + +	+ + + +	+ + +	+ + +	+ + +
Effect of āmaviṣa	+	+ +	+ +	+ +	+ + +	+ + + +	+ + + + +

ST - Samatridoṣaja; VP -Vātapittaja; VK -Vātakaphaja; PK - Pittakaphaja; K-Kaphaja; P-Pittaja; V - Vātaja.

enhanced IgE thus therefore resulting in increase in vyādhi-kṣamattva.

References:

1. न च सर्वाणि शरीराणि व्याधिक्षमत्वे समर्थानि भवन्ति । (च.सू. 28/7)
2. प्राकृतमिति जन्मादि प्रवृत्तम् ।
3. शुक्रशोणितसंयोगे यो भवेद्दोष उत्कट: । प्रकृतिर्जायते तेन.....।। (सु. शा. 4/63)
4. .....मनुष्याणां गर्भादिप्रवृत्ता । तस्मा-च्छ्लेष्मळा: प्रकृत्या केचित्, पित्तला: केचित्, संसृष्टा: केचित्, समधातव: केचिद्भवन्ति । (च. वि. 8/5)
5. श्लेष्मा हि स्निग्धश्लक्ष्णमृदुमधुरसारसान्द्रमन्द-स्तिमितगुरुशीतविज्जलाच्छ: । (च. वि. 8/96)
6. पित्तमुष्णं तीक्ष्णं द्रवं विस्रमम्ळं कटुकं च । (च. वि. 8/97)
7. वातस्तु रूक्षलघुचलबहुशीघ्रशीतपरुषविशद: । (च. वि. 8/98)
8. .....वातळाद्या: सदातुरा: । (च. सू. 7/40)
9. तेषामिदं विशेषविज्ञानं – वातळस्य वातनिमित्ता:, पित्तळस्य पित्तनिमित्ता:, श्ळेष्मळस्य श्ळेष्मनिमित्ता व्याधय: प्रायेण बलवन्तश्च भवन्ति । (च. वि. 6/15)
10. विभुत्वादाशुकारित्वाद्बलित्वादन्यकोपनात् । स्वातन्त्र्याद्बहुरोगत्वाद्दोषाणां प्रबलोऽनिल: ।। (अ. ह. शा. 3/84)
11. लघु रूक्षमाशु विशदं व्यवायि तीक्ष्णं विकाषि सुक्ष्मं च । उष्णमनिर्देश्यरसं दशगुणमुक्तं विषं तज्ज्ञै: (च.चि. 23/24)
12. दोषा: क्षीणा: बृंहयितव्या:, कुपिता: प्रशमयितव्या:, वृद्धा: निर्हर्तव्या:, समा: परिपाल्या: ।

Bibliography:

1. Yadavji Trikumji Acharya, *Carakasamhita* (Chakrapani), Sutrasthanam 28/7, Nirnaya Sagar Press, Mumbai, 1941.
2. Ibid, Vimanasthanam 8/98
3. Ibid, Chikitsasthanam 23/24
4. *Susrutasamhita* (Dalhana's Nibandh Samgraha Vyakhya) Sareerasthanam, 4/63
5. *Astangahrdaya* (Sarvanga Sundra Vyakhya by Aruna Dutta) Sareerasthanam 3/84
6. Bhagwan Dash and Sharma, R. K., *Caraka-samhita* (Text with English translation and critical exposition based on Chakrapani Datta's Ayurveda Dipika), Vol. I and II.
7. *Harrrisons Principles of Internal medicine,* Vol.11,14th Edition.
8. William Boyd, *Pathology structure & function in diseases*, 1st Edn., 1985
10. Kumar Cotran Robbins, *Basic pathology*: 5th Edition

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Clinical observation

IDIOPATHIC THROMBOCYTOPENIC PURPURA (ITP) - SOME CLINICAL EXPERIENCES

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Idiopathic thrombocytopenic purpura (ITP) is defined as isolated thrombocytopenia with normal bone marrow and the absence of other causes of thrombocytopenia. The two distinct clinical syndromes manifest as an acute condition in children and a chronic condition in adults. ITP is a decrease in the number of circulating platelets in the absence of toxic exposure or a disease associated with a low platelet count (normal blood platelet count is 1,50,000 to 4,50,000/µl)

ITP is primarily a disease of increased peripheral platelet destruction, with most patients having antibodies to specific platelet membrane glycoproteins. Since studies show that most patients have either normal or diminished platelet production, relative marrow failure may contribute to this condition, Acute ITP often follows an acute infection and has a spontaneous resolution within two months. Chronic ITP persists longer than six months without a specific cause. In chronic ITP (adults), the female-to-male ratio is 2.6:1. More than 72% of patients older than 10 years are female. In acute ITP (children), distribution is equal between males (52%) and females (48%). Peak prevalence occurs in adults aged 20-50 and in children it is 2-4 years. Approximately 40% of all patients are below 10 years.

Common signs, symptoms and precipitating factors are: abrupt onset (childhood ITP), gradual onset (adult ITP), purpura, menorrhagia, epistaxis, gingival bleeding, recent live virus immunization (childhood ITP), recent viral illness (childhood ITP) and bruising tendency.

Common physical findings are non-palpable petechiae, which mostly occur in dependent regions; haemorrhagic bullae on mucous membrane; purpura; gingival bleeding; signs of GI bleeding; menometrorrhagia; menorrhagia; retinal haemorrhages; evidence of intracranial haemorrhage, with possible neurological symptoms; nonpalpable spleen and spontaneous bleeding when platelet count is less than 20,000/µl.

Treatment of patients with ITP must take into account the age of the patient, the severity of the illness and the anticipated natural history. Although adults have a higher incidence of intracranial bleeding than children, specific therapy may not be necessary unless the platelet count is below 20,000/µl or there is extensive bleeding. The modern approach of ITP can be summarised as follows:

Haemorrhage in patients with either acute or chronic ITP can usually be controlled with glucocorticoids. Emergency splenoctomy is usually reserved for patients with acute or chronic ITP who are desperately ill and have not responded to any medical measures. Symptomatic patients with chronic ITP are usually placed on cortisone, 60 mg/day for 4 to 6 weeks. The drug is then decreased slowly over another few weeks. However, the majority will have a fall in platelet count following

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steroid withdrawal. Patients with chronic ITP who fail to maintain a normal platelet count after a course of cortisone are eligible for elective splenoctomy.

Patients still thrombocytopenic after splenoctomy or who relapse months to years after initial therapy have received a variety of immunosuppressive drugs. Although these drugs may be beneficial, they have serious side effects and should be used judiciously. If a patient is not bleeding and maintain a platelet count above 20.000/µl, consideration should be given to withholding therapy. Patients with severe thrombocytopenia may live with their disease for two to three decades.

Case 1

An 8 year old girl, diagnosed of ITP, came for treatment in 1997. She had petechiae. She was under steroids for the past six months.

Treatment:-

- *Nimbamritadi panchatiktamkashayam* (10 ml) with boiled and cooled water (40 ml) added with honey (1 teaspoon) twice daily - early morning and evening in the empty stomach.
- *Vrishaghritam* (5g) added with *Pravalabhasmam* (200 mg) - at bed time.
- *Balasvagandhadi tailam* for application on the body and head (the patient was advised to massage the body for one hour before taking the bath).

She continued the treatment till 2002. On follow up, Petechiae were not noticed. Nor did she have any other complaints. She was advised to stop the medicines.

Case 2

A nine year old girl approached us in 2001 with the signs and symptoms of ITP. Her platelet count then was 50,000/µl. The symptoms were that when she fell or suffer a blow, the affected part would resemble a bruise; if injured the clotting process takes a long while and occasional bleeding through the nose.

Treatment:-

- *Nimbamritadi panchatiktamkashayam* (15 ml) with boiled and cooled water (40 ml) added with the extract of kaippanaraci (*Cipadessa baccifera*) (1g) - twice daily in the empty stomach
- *Vrishaghritam* (5g) added with *Pravalabhasmam* (200 mg) at bed time
- *Nityakalyāṇi* (*Catharanthus roseus*) extract (1g) + *Pippalichurnam* (*Piper longum*) (500 mg) + *Rasasinduram* (100 mg) + *Rajatabhasmam* (25 mg) + *Talakabhasmam* (10 mg) - twice daily before food.
- *Balasvagandhadi tailam* for local application

This procedure was continued for one year. The platelet count was found to be 1,70,000/µl. Moreover, there were no signs and symptoms of ITP.

Case 3

A 21 year old woman, diagnosed of ITP, came here in 2003. Her platelet count often reduced from 1,50,000/ µl to 50,000/µl; as a result, patches manifested in the skin and for which allopathic drugs were administered. More so, it was 8 months since she had the menstrual cycle and was under allopathic drugs for mental disorders for three months.

Treatment:

- *Nimbamritadi panchatiktamkashayam* (15 ml) with boiled and cooled water (40 ml) added with honey (1 teaspoon) - twice daily, early morning and evening in the empty stomach.
- *Vrishaghritam* (10g) with *Pravalabhasmam* (400mg) - at bed time
- *Balasvagandhadi tailam* for application on the head and body (the patient was advised to massage the body for one hour before taking the bath)

On continuation of the treatment for one and half years, her menstrual cycle was regularized and mental disturbances alleviated. The platelet count was 1,25,000/µl, which never reduced.

Case 4

A seven year old boy came here in June 2005. He was an ITP patient for 3 years then. He had undergone 3 courses of steroids (which would enhance the platelet count). He had continued Dapsone 25mg for a certain period. After these treatments, he was advised splenoctomy if the condition persists even after the age of 10. When he came here, his platelet count was 8,000/µl. No other signs and symptoms were noticed.

Treatment:

- *Nimbamritadi panchatiktamkashayam* (10 ml) with boiled and cooled water (40 ml) added with honey (1 teaspoon) - twice daily, early morning and evening in the empty stomach.
- *Vrishaghritam* (5 g) with *Pravalabhasmam* (200 mg) - at bed time
- *Balasvagandhadi tailam* for body and head

Within a period of two months the platelet count found increased to 40,000/µl. Then he was advised to take the extract of kaippanaraci (*Cipedessa baccifera*) (1g) and to increase the dosage of *Vrishaghrtam* to 10g.

After a period of five months, his platelet count found increased to 66,000/µl; and after four months, it was reduced to 30,000/µl. Then he was advised to include the following medicines: Nityakalyāṇi extract (500 mg) + *Pippalichuram* (500 mg) + *Rasasinduram* (100 mg) + *Rajatabhasmam* (25 mg) + *Talakabhasmam* (10 mg) - twice daily before food.

After the above medication, the platelet count found once increased up to 1,00,000/µl. Later it was reduced due to occasional fever and other ailments. He is continuing the treatment even now and no other complaints reported so far.

Observations

ITP may be categorised under raktapitta (pitta induced blood disorders) and the treatment done accordingly. The main aim of the treatment is to maintain the platelet count.

Nimbamritadi panchatiktamkashayam:- Bone marrow is the site of production of the platelets. Thrombopoetin (TPO) is the essential element in the production of platelets. This is carried out by the liver. Liver also plays a major role in this. Here, the aim is to strengthen the bone marrow and stimulate the liver function. The bark of nimba (*Azadirachta indica*), amṛta (*Tinospora cordifolia*), vṛṣa (*Justicia beddomei*), paṭola (*Tricosanthes lobata*) and nidigdhika (*Solanum virginianum*) are the ingredients of *Nimbamritadi panchatiktamkashayam*. They are bitter (tiktarasa) in both taste

and nature. So this is also known as pañcatiktam. Tiktarasa drugs are normally prescribed for the degeneration of bone.

It is said that tiktarasa reduces both the vitiated kapha and pitta[1]. Pitta is predominant in raktapitta and this kaṣāyam is said to normalize vitiation of pitta. This formulation maintains the platelets and also tones up both liver and spleen.

Vrishaghritam and *Pravalabasmam*:- Vāśa (*Justicia beddomei*) plays a major role in blood clotting[2]. So *Vrishaghritam* is indicated in this condition. *Pravalabasmam* aids in blood clotting with the presence of calcium in it.

Balasvagandhadi tailam:- In the context of rakatapitta, our Ācāryas advice the use of drugs that are cold in potency, as ointment and for oleation[3]. *Balasvagandhadi tailam* propitiates blood and the ingredients like aśvagandha (*Withania somnifera*) bala (*Sida alnifolia*), etc. provide strength which in turn enhances the metabolic activity. The drugs recommended for bruises or in a bruised condition are found effective in raktapitta as well[4].

Lākṣa (*Laccifer lacca*) is indicated in haematemesis. The oil prepared out of it is used for inunction in chronic fever and emaciation (Nadkarni). Lākṣa, one of the ingredients in *Balasvagandhadi tailam*, is a good healer. It has a prominent place in healing bruises.

Rasasinduram contains mercury and sulphur which are very effective in skin and blood disorders. *Rajatabhasmam* contains purified silver which is effective in raktapitta, phthisis, cough and diabetes. It also acts as a rejuvenator. *Talakabhasmam* contains purified orpiment which is effective in vitiated conditions of kapha and pitta, skin diseases, phthisis and asthma. It also strengthens the body and is a rejuvenator.

Blood clotting property is reported to kaippanaraci leaves (*Cipadessa baccifera*)[5]. Nityakalyāṇi (*Catharanthus roseus*) is reported to be useful in some kinds of leukaemia and menorrhagia[6]. Pippali is the most effective drug in spleen disorders[7].

Wholesome and unwholesome:- Red chilies, tamarind, fried items, black gram, curd, sesame and garlic are considered to be unwholesome, hence, not recommended. Instead of these green chilies, ginger, pepper, tomato, lime and Malabar tamarind are recommended.

References:

1. **तिक्तः** स्वयमरोचिष्णुररुचिं..... **दाहपित्तकफान् जयेत्** (अ.ह.सू.९/१४)
   .....अस्थिसंक्षयात् जातान् क्षीरघृतैस्तिक्तसंयुक्तैः....(अ.ह.सू.११/३१)
2. वृषः सद्यो जयत्यस्रं, स ह्यस्य परमौषधम् (अ.ह.चि.२/२६)
3. कल्पयेच्छीतवर्गं च प्रदेहाभ्यञ्जनादिषु ।
   यच्च पित्तज्वरे प्रोक्तं बहिरन्तच भेषजम् ।। (अ.ह.चि.२/४९).
4. रक्तपित्ते हितं तच्च क्षतक्षीणे हितं च यत् । (अ.ह.चि.२/५०)
5. www. medicinalplants.blogspot.com
6. Wealth of India, Vol. VI, pp 163-164
7. प्लीहामयेपिप्पली.....। (अ.ह.उ. ४०/४८)

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