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Āryavaidyan

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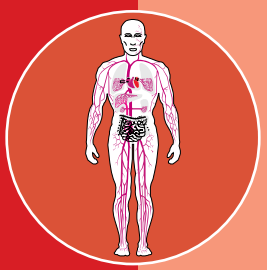

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February - April, 2013

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āryavaidyan

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Aryavaidyan is intended to encourage scientific writing and intellectual interactions among scholars, academicians, practitioners and students of ayurveda and allied subjects like Siddha, Unani, modern medicine, etc.

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सततांध्ययनं, वादः परतन्त्रावलोकनम् ।
तद्विद्याचार्यसेवा च बुद्धिमेधाकरो गणः ।।

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METRES (CHANDA) IN AṢṬĀṄGAHṚDAYA - A CRITICAL REVIEW

(Part - II)

Vaidya Asit K Panja

Abstract: The method of rhythmic recitation of verse of Aṣṭāṅgahṛdaya with respect to metres (chandas) continues from the previous issue. Here, chandas viz. Hāriṇi, Indravajra, Mālini, Mandācrānta, etc. are discussed. The review concludes with this issue.

Hāriṇī[11]

This varṇavṛttasamachanda is composed of नगण, सगण, मगण, रगण, सगण, a laghu and a guru letter in each pāda. Pauses are after 6th, 10th and 17th i.e. pādānta.

Example: रहसि दयितामङ्के कृत्वा भुजान्तरपीडनात्पुळकिततनुं जातस्वेदां सक्म्पपयोधराम्।
यदि सरभसं शीधोर्वारं न पाययते कृती किमनुभवति क्ळेशप्रायं ततो गृहतन्त्रताम्।। (चि., ७/८७)

Analysis

Pāda 1

नगण			सगण			मगण			रगण			सगण			ल	गु
।	।	।	।	।	ऽ	ऽ	ऽ	ऽ	ऽ	।	ऽ	।	।	ऽ	।	ऽ
र	ह	सि	द	यि	ता	म	ङ्के	कृ	त्वा	भु	जा	न्त	र	पी	ड	नात्

Pāda 2

नगण			सगण			मगण			रगण			सगण			ल	गु
।	।	।	।	।	ऽ	ऽ	ऽ	ऽ	ऽ	।	ऽ	।	।	ऽ	।	ऽ
पु	ळ	कि	त	त	नुं	जा	त	स्वे	दां	स	क	म्प	प	यो	ध	राम्

Pāda 3

नगण			सगण			मगण			रगण			सगण			ल	गु
।	।	।	।	।	ऽ	ऽ	ऽ	ऽ	ऽ	।	ऽ	।	।	ऽ	।	ऽ
य	दि	स	र	भ	सं	शी	धो	र्वा	रं	न	पा	य	य	ते	कृ	ती

Pāda 4

नगण			सगण			मगण			रगण			सगण			ल	गु
।	।	।	।	।	ऽ	ऽ	ऽ	ऽ	ऽ	।	ऽ	।	।	ऽ	।	ऽ
कि	म	नु	भ	व	ति	क्ळे	श	प्रा	यं	त	तो	गृ	ह	त	न्त्र	ताम्

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Indravajra[1m]

It is also a varṇavṛttasamachanda and contains eleven letters in each pāda. Each pāda consists of initial two तगण, one जगण and two guru letters. Pause is at the end.

Example: मुस्तावचाग्निद्विनिशाद्वितिक्ताभल्लातपाठात्रिफलाविषाख्याः।
कुष्ठं त्रुटी हैमवती च योनिस्तन्यामयघ्ना मलपाचनाश्च ।। (सू., १५/४०)

Analysis

Pāda 1

तगण			तगण			जगण			गु	गु
ऽ	ऽ	।	ऽ	ऽ	।	।	ऽ	।	ऽ	ऽ
मु	स्ता	व	चा	ग्नि	द्वि	नि	शा	द्वि	ति	क्ता

Pāda 2

तगण			तगण			जगण			गु	गु
ऽ	ऽ	।	ऽ	ऽ	।	।	ऽ	।	ऽ	ऽ
भ	ल्ला	त	पा	ठा	त्रि	फ	ला	वि	षा	ख्याः

Pāda 3

तगण			तगण			जगण			गु	गु
ऽ	ऽ	।	ऽ	ऽ	।	।	ऽ	।	ऽ	ऽ
कु	ष्ठं	त्रु	टी	है	म	व	ती	च	यो	नि

Pāda 4

तगण			तगण			जगण			गु	गु
ऽ	ऽ	।	ऽ	ऽ	।	।	ऽ	।	ऽ	ऽ
स्त	न्या	म	य	घ्ना	म	ल	पा	च	ना	श्च

Kusumitalatāvellitā [1n]

It is a varṇavṛttasamachanda characterised by eighteen letters in each pāda. Components are: मगण, तगण, नगण and three यगण. Pauses are after five, after eleven and after eighteen i.e. pādānta.

Example: ग्राम्याब्जानूपं पिशितमबलं शुष्कशाकं तिलान्नं गौडं पिष्टान्नं दधि सलवणं विज्जलं मद्यमम्ळम्।
धाना वल्लूरं समशनमथो गुर्वसात्म्यं विदाहि स्वप्नं चारात्रौ श्वयथुगदवान् वर्जयेन्मैथुनं च ।। (चि., १७/४२)

Analysis

Pāda 1

मगण			तगण			नगण			यगण			यगण			यगण		
ऽ	ऽ	ऽ	ऽ	ऽ	।	।	।	।	।	ऽ	ऽ	।	ऽ	ऽ	।	ऽ	ऽ
ग्रा	म्या	ब्जा	नू	पं	पि	शि	त	म	ब	लं	शु	ष्क	शा	कं	ति	ला	न्नं

Pāda 2

मगण			तगण			नगण			यगण			यगण			यगण		
ऽ	ऽ	ऽ	ऽ	ऽ	।	।	।	।	।	ऽ	ऽ	।	ऽ	ऽ	।	ऽ	ऽ
गौ	डं	पि	ष्टा	न्नं	द	धि	स	ल	व	णं	वि	ज्ज	लं	म	ध्य	म	म्ळम्

Pāda 3

मगण			तगण			नगण			यगण			यगण			यगण		
ऽ	ऽ	ऽ	ऽ	ऽ	।	।	।	।	।	ऽ	ऽ	।	ऽ	ऽ	।	ऽ	ऽ
धा	ना	व	ल्लू	रं	स	म	श	न	म	थो	गु	र्व	सा	त्म्यं	वि	दा	हि

Pāda 4

मगण			तगण			नगण			यगण			यगण			यगण		
ऽ	ऽ	ऽ	ऽ	ऽ	।	।	।	।	।	ऽ	ऽ	।	ऽ	ऽ	।	ऽ	ऽ
स्व	प्नं	चा	रा	त्रौ	श्व	य	थु	ग	द	वान्	व	र्ज	ये	न्मै	थु	नं	च

Mālinī

Mālinī[1o] is characterised by fifteen letters in each pāda. Chronological components are two नगण, one मगण and two यगण. Pauses are after eight and after seven i.e. pādānta.

Example: मदनमधुकलम्बानिम्बबिम्बीविशालात्रपुसकुटजमूर्वादेवदाळीकृमिघ्नम् ।
विदुळदहनचित्राः कोशवत्यौ करञ्जः कणलवणवचैलासर्षपाश्छर्दनानि ।। (सू., १५/१)

Analysis

Pāda 1

नगण			नगण			मगण			यगण			यगण		
।	।	।	।	।	।	ऽ	ऽ	ऽ	।	ऽ	ऽ	।	ऽ	ऽ
म	द	न	म	धु	क	ल	म्बा	नि	म्ब	बि	म्बी	वि	शा	ला

Pāda 2

नगण			नगण			मगण			यगण			यगण		
।	।	।	।	।	।	ऽ	ऽ	ऽ	।	ऽ	ऽ	।	ऽ	ऽ
त्र	पु	स	कु	ट	ज	मू	र्वा	दे	व	दा	ळी	कृ	मि	घ्नम्

Pāda 3

नगण			नगण			मगण			यगण			यगण		
।	।	।	।	।	।	ऽ	ऽ	ऽ	।	ऽ	ऽ	।	ऽ	ऽ
वि	दु	ळ	द	ह	न	चि	त्रा	को	श	व	त्यौ	क	र	ञ्जः

Pāda 4

नगण			नगण			मगण			यगण			यगण		
।	।	।	।	।	।	ऽ	ऽ	ऽ	।	ऽ	ऽ	।	ऽ	ऽ
क	ण	ल	व	ण	व	चै	ला	स	र्ष	पा	श्छ	र्द	ना	नि

Mandākrāntā[1p]

It is a varṇavṛttasamachanda characterised by seventeen letters in each pāda. Components are: मगण, भगण, नगण, तगण, तगण and two guru letters. Pauses are after four, after ten and after seventeen i.e. pādānta.

Example: लाक्षादन्तीमधुरसवराद्वीपिपाठाविडङ्ग प्रत्यक्पुष्पीत्रिकटुरजनीसप्तपर्णाटरूषम् ।
रक्ता निम्बं सुरतरुकृतं पञ्चमूल्यौ च चूर्णं पीत्वा मासं जयति हितभुग्गव्यमूत्रेण कुष्ठम् ।। (चि., १९/४१)

Analysis

Pāda 1

मगण			भगण			नगण			तगण			तगण			गु	गु
ऽ	ऽ	ऽ	ऽ	।	।	।	।	।	ऽ	ऽ	।	ऽ	ऽ	।	ऽ	ऽ
ला	क्षा	द	न्ती	म	धु	र	स	व	रा	द्वी	पि	पा	ठा	वि	ड	ङ्ग

Pāda 2

मगण			भगण			नगण			तगण			तगण			गु	गु
ऽ	ऽ	ऽ	ऽ	।	।	।	।	।	ऽ	ऽ	।	ऽ	ऽ	।	ऽ	ऽ
प्र	त्य	क्पु	ष्पी	त्रि	क	टु	र	ज	नी	स	प्त	प	र्णा	ट	रू	षम्

Pāda 3

मगण			भगण			नगण			तगण			तगण			गु	गु
ऽ	ऽ	ऽ	ऽ	।	।	।	।	।	ऽ	ऽ	।	ऽ	ऽ	।	ऽ	ऽ
र	क्ता	नि	म्बं	सु	र	त	रु	कृ	तं	प	ञ्च	मू	ल्यौ	च	चू	र्णं

Pāda 4

मगण			भगण			नगण			तगण			तगण			गु	गु
ऽ	ऽ	ऽ	ऽ	।	।	।	।	।	ऽ	ऽ	।	ऽ	ऽ	।	ऽ	ऽ
पी	त्वा	मा	सं	ज	य	ति	हि	त	भु	ग	व्य	मू	त्रे	ण	कु	ष्ठम्

Mattamayūra

Mattamayūra[1q] is a varṇavṛttasamachanda charecterised by thirteen letters. Each pāda is composed of मगण, तगण, यगण, सगण and a guru varṇa. Pauses are after four and then after nine i.e. pādānta.

Example: पाठादार्वीवह्निघुणेष्टाकटुकाभिर्मूत्रं युक्तं शक्रयवैश्चोष्णजलं वा।
कुष्ठी पीत्वा मासमरुक्स्याद्गुदकीली मेही शोफी पाण्डुरजीर्णी कृमिमांश्च ।। (चि., १९/४०)

Analysis

Pāda 1

मगण			तगण			यगण			सगण			गु
ऽ	ऽ	ऽ	ऽ	ऽ	।	।	ऽ	ऽ	।	।	ऽ	ऽ
पा	ठा	दा	र्वीं	व	ह्नि	घु	णे	ष्टा	क	टु	का	भि

Pāda 2

मगण			तगण			यगण			सगण			गु
ऽ	ऽ	ऽ	ऽ	ऽ	।	।	ऽ	ऽ	।	।	ऽ	ऽ
मूं	त्रं	यु	क्तं	श	क्र	य	वै	श्वो	ष्ण	ज	लं	वा

Pāda 3

मगण			तगण			यगण			सगण			गु
ऽ	ऽ	ऽ	ऽ	ऽ	।	।	ऽ	ऽ	।	।	ऽ	ऽ
कु	ष्ठी	पी	त्वा	मा	स	म	रु	क्स्या	द्गु	द	की	ली

Pāda 4

मगण			तगण			यगण			सगण			गु
ऽ	ऽ	ऽ	ऽ	ऽ	।	।	ऽ	ऽ	।	।	ऽ	ऽ
मे	ही	शो	फी	पा	ण्डु	र	जी	र्णी	कृ	मि	मां	श्च

Narkuṭaka

Narkuṭaka[1l] is characterised by seventeen letters in each pāda. Chronological components are: नगण, जगण, भगण, two जगण, one laghu and a guru varṇa. Pauses are after seven and after ten i.e. pādānta.

Example: वरतनुवक्त्रसङ्गतिसुगन्धितरं सरकं द्रुतमिव पद्मरागमणिमासवरूपधरम्।
भवति रतिश्रमेण च मदः पिबतोऽल्पमपि क्षयमत ओजसः परिहरन् स शयीत परम्।। (चि., ७/८८)

Analysis

Pāda 1

नगण			जगण			भगण			जगण			जगण			ल	गु
।	।	।	।	ऽ	।	ऽ	।	।	।	ऽ	।	।	ऽ	।	।	ऽ
व	र	त	नु	व	क्त्र	स	ङ्ग	ति	सु	ग	न्धि	त	रं	स	र	कं

Pāda 2

नगण			जगण			भगण			जगण			जगण			ल	गु
।	।	।	।	ऽ	।	ऽ	।	।	।	ऽ	।	।	ऽ	।	।	ऽ
द्रु	त	मि	व	प	द्म	रा	ग	म	णि	मा	स	व	रू	प	ध	रम्

Pāda 3

नगण			जगण			भगण			जगण			जगण			ल	गु
।	।	।	।	ऽ	।	ऽ	।	।	।	ऽ	।	।	ऽ	।	।	ऽ
भ	व	ति	र	ति	श्र	मे	ण	च	म	दः	पि	ब	तो	ऽल्प	म	पि

Pāda 4

नगण			जगण			भगण			जगण			जगण			ल	गु
।	।	।	।	ऽ	।	ऽ	।	।	।	ऽ	।	।	ऽ	।	।	ऽ
क्ष	य	म	त	ओ	ज	सः	प	रि	ह	र	न्स	श	यी	त	प	रम्

Praharṣiṇi[1r]

This varṇavṛttasamachanda is composed of मगण, नगण, जगण, रगण and a guru letter in each pāda. Pauses are after 3rd and after 13th i.e. pādānta.

Example: संसर्गाद्रसरुधिरादिभिस्तथैषां दोषांस्तु क्षयसमताविवृद्धिभेदैः।
आनन्त्यं तरतमयोगतश्च यातान् जानीयादवहितमानसो यथास्वम्।। (सू., १२/७८)

Analysis

Pāda 1

मगण			नगण			जगण			रगण			गु
ऽ	ऽ	ऽ	।	।	।	।	ऽ	।	ऽ	।	ऽ	ऽ
सं	स	र्गा	द्र	स	रु	धि	रा	दि	भि	स्त	थै	षां

Pāda 2

मगण			नगण			जगण			रगण				गु
ऽ	ऽ	ऽ	।	।	।	।	ऽ	।	ऽ	।	ऽ		ऽ
दो	षां	स्तु	क्ष	य	स	म	ता	वि	वृ	द्धि	भे	दैः	

Pāda 3

मगण			नगण			जगण			रगण			गु
ऽ	ऽ	ऽ	।	।	।	।	ऽ	।	ऽ	।	ऽ	ऽ
आ	न	न्त्यं	त	र	त	म	यो	ग	त	श्च	या	तान्

Pāda 4

मगण			नगण			जगण			रगण				गु
ऽ	ऽ	ऽ	।	।	।	।	ऽ	।	ऽ	।	ऽ		ऽ
जा	नी	या	द	व	हि	त	मा	न	सो	य	था	स्वम्	

Pṛthvi

Pṛthvi[1s] is a varṇavṛttasamachanda charecterised by seventeen letters in every pāda. Each pāda is composed of - जगण, सगण, जगण, सगण, यगण and a laghu and a guru varṇa. Pauses are after eight and then after nine i.e. pādānta.

Example: सहामलकशुक्तिभिर्दधिसरेण तैलेन वा गुडेन पयसा घृतेन यवसक्तुभिर्वा सह।
तिलेन सह माक्षिकेण पललेन सूपेन वा वपुष्करमरुष्करं परममेध्यमायुष्करम्।। (उ., ३९/८०)

Analysis

Pāda 1

जगण			सगण			जगण			सगण			यगण			ल	गु
।	ऽ	।	।	।	ऽ	।	ऽ	।	।	।	ऽ	।	ऽ	ऽ	।	ऽ
स	हा	म	ल	क	शु	क्ति	भि	र्द	धि	स	रे	ण	तै	ले	न	वा

Pāda 2

जगण			सगण			जगण			सगण			यगण			ल	गु
।	ऽ	।	।	।	ऽ	।	ऽ	।	।	।	ऽ	।	ऽ	ऽ	।	ऽ
गु	डे	न	प	य	सा	घृ	ते	न	य	व	स	क्तु	भि	र्वा	स	ह

Pāda 3

जगण			सगण			जगण			सगण			यगण			ल	गु
।	ऽ	।	।	।	ऽ	।	ऽ	।	।	।	ऽ	।	ऽ	ऽ	।	ऽ
ति	ले	न	स	ह	मा	क्षि	के	न	प	ल	ले	न	सू	पे	न	वा

Pāda 4

जगण			सगण			जगण			सगण			यगण			ल	गु
।	ऽ	।	।	।	ऽ	।	ऽ	।	।	।	ऽ	।	ऽ	ऽ	।	ऽ
व	पु	ष्क	र	म	रु	ष्क	रं	प	र	म	मे	ध्य	मा	यु	ष्क	रम्

Puṣpitāgra[1t]

It is an ardhasamavarṇachanda containing thirteen letters in each even pāda, whereas twelve letters in each odd pāda. Each odd pāda composed of - two नगण, रगण and यगण. On the other hand, नगण, two जगण, रगण and one guru varṇa make the even pāda. Pause is at the end.

Example: मदनकुटजकुष्ठदेवदाळीमधुकवचादशमूलदारुरास्नाः ।
यवमिशिकृतवेधनं कुलत्था मधु लवणं त्रिवृता निरूहणानि ।। (सू., १५/३)

Analysis

Pāda 1

नगण			नगण			रगण			यगण		
।	।	।	।	।	।	ऽ	।	ऽ	।	ऽ	ऽ
म	द	न	कु	ट	ज	कु	ष्ठ	दे	व	दा	ळी

Pāda 2

नगण			जगण			जगण			रगण			गु
।	।	।	।	ऽ	।	।	ऽ	।	ऽ	।	ऽ	ऽ
म	धु	क	व	चा	द	श	मू	ल	दा	रु	रा	स्नाः

Pāda 3

नगण			नगण			रगण			यगण		
।	।	।	।	।	।	ऽ	।	ऽ	।	ऽ	ऽ
य	व	मि	शि	कृ	त	वे	ध	नं	कु	ल	त्था

Pāda 4

नगण			जगण			जगण			रगण			गु
।	।	।	।	ऽ	।	ऽ	।	ऽ	ऽ	।	ऽ	ऽ
म	धु	ल	व	णं	त्रि	वृ	ता	नि	रू	ह	णा	नि

Rathoddhatā[1u]

It is a symetrical varṇachanda composed of eleven letters in each pāda. Components are: रगण, नगण, रगण, a laghu and a guru varṇa respectively. Pause is at the end.

Example: तैल्वकं पवनजन्मनि ज्वरे योजयेत्त्रिवृतया वियोजितम् ।
तिक्तकं वृषघृतं च पैत्तिके यच्च पालनिकया शृतं हविः ।। (चि., १/९२)

Analysis

Pāda 1

रगण			नगण			रगण			ल	गु
ऽ	।	ऽ	।	।	।	ऽ	।	ऽ	।	ऽ
तै	ल्व	कं	प	व	न	ज	न्म	नि	ज्व	रे

Pāda 2

रगण			नगण			रगण			ल	गु
ऽ	।	ऽ	।	।	।	ऽ	।	ऽ	।	ऽ
यो	ज	ये	त्रि	वृ	त	या	वि	यो	जि	तम्

Pāda 3

रगण			नगण			रगण			ल	गु
ऽ	।	ऽ	।	।	।	ऽ	।	ऽ	।	ऽ
ति	क्त	कं	वृ	ष	घृ	तं	च	पै	त्ति	के

Pāda 4

रगण			नगण			रगण			ल	गु
ऽ	।	ऽ	।	।	।	ऽ	।	ऽ	।	ऽ
य	च्च	पा	ल	नि	क	या	शृ	तं	ह	विः

Śālinī

Śālinī[1v] is characterised by eleven letters in each pāda. Respective gaṇas are मगण, two तगण and two guru letter. Pause is at the end.

Example: दूर्वाऽनन्ता निम्बवासाऽऽत्मगुप्ता गुन्द्राऽभीरुः शीतपाकी प्रियङ्गुः।
न्यग्रोधादिः पद्मकादिः स्थिरे द्वे पद्मं वन्यं सारिवादिश्च पित्तम्।। (सू., १५/६)

Analysis

Pāda 1

मगण			तगण			तगण			गु	गु
ऽ	ऽ	ऽ	ऽ	ऽ	।	ऽ	ऽ	।	ऽ	ऽ
दू	र्वा	न	न्ता	नि	म्ब	वा	सा	ऽऽम	गु	प्ता

Pāda 2

मगण			तगण			तगण			गु	गु
ऽ	ऽ	ऽ	ऽ	ऽ	।	ऽ	ऽ	।	ऽ	ऽ
गु	न्द्रा	ऽभी	रुः	शी	त	पा	की	प्रि	य	ङ्गुः

Pāda 3

मगण			तगण			तगण			गु	गु
ऽ	ऽ	ऽ	ऽ	ऽ	।	ऽ	ऽ	।	ऽ	ऽ
न्य	ग्रो	धा	दिः	प	द्म	का	दिः	स्थि	रे	द्वे

Pāda 4

मगण			तगण			तगण			गु	गु
ऽ	ऽ	ऽ	ऽ	ऽ	।	ऽ	ऽ	।	ऽ	ऽ
प	द्मं	व	न्यं	सा	रि	वा	दि	श्च	पि	त्तम्

Śārdūlavikrīḍita[1w]

It is a varṇavṛttasamachanda composed of - मगण, सगण, जगण, सगण, two तगण and a guru at the end (nineteen letters). Pauses are after twelveth and after nineteenth i.e. pādānta.

Example: एलायुग्मतुरुष्ककुष्ठफलिनीमांसीजलध्यामकं स्पृक्काचोरकचोचपत्रतगरस्थौणेयजातीरसाः।
शुक्तिर्व्याघ्रनखोऽमराह्वमगुरुः श्रीवासकः कुङ्कुमं चण्डागुग्गुलुदेवधूपखपुराः पुन्नागनागाह्वयम्।। (सू., १५/४३)

Analysis

Pāda 1

मगण			सगण			जगण			सगण			तगण			तगण			गु
ऽ	ऽ	ऽ	।	।	ऽ	।	ऽ	।	।	।	ऽ	ऽ	ऽ	।	ऽ	ऽ	।	ऽ
ए	ला	यु	ग्म	तु	रु	ष्क	कु	ष्ठ	फ	लि	नी	मां	सी	ज	ल	ध्या	म	कं

Pāda 2

मगण			सगण			जगण			सगण			तगण			तगण			गु
ऽ	ऽ	ऽ	।	।	ऽ	।	ऽ	।	।	।	ऽ	ऽ	ऽ	।	ऽ	ऽ	।	ऽ
स्पृ	क्षा	चो	र	क	चो	च	प	त्र	त	ग	र	स्थौ	णे	य	जा	ती	र	साः

Pāda 3

मगण			सगण			जगण			सगण			तगण			तगण			गु
ऽ	ऽ	ऽ	।	।	ऽ	।	ऽ	।	।	।	ऽ	ऽ	ऽ	।	ऽ	ऽ	।	ऽ
शु	क्ति	र्व्या	घ्र	न	खो	ऽम	रा	ह्व	म	ग	रुः	श्री	वा	स	कः	कु	ङ्कु	मम्

Pāda 4

मगण			सगण			जगण			सगण			तगण			तगण			गु
ऽ	ऽ	ऽ	।	।	ऽ	।	ऽ	।	।	।	ऽ	ऽ	ऽ	।	ऽ	ऽ	।	ऽ
च	ण्डा	गु	ग्गु	लु	दे	व	धू	प	ख	पु	राः	पु	न्ना	ग	ना	ग	ह्व	यम्

Śragdharā[1x]

This varṇavṛttasamachanda contains seven gaṇas i.e. twenty one letters in each pāda. The gaṇas are मगण, रगण, भगण, नगण and three यगण. Pauses are after every seven letters i.e. after seven, after fourteen and after twenty-one.

Example: श्यामादन्तीद्रवन्तीक्रमुककुटरणाशङ्खिनीचर्मसाह्वास्वर्णक्षीरीगवाक्षीशिखरिरजनकच्छिन्नरोहाकरञ्जाः।
बस्तान्त्री व्याधिघातो बहळबहुरसस्तीक्ष्णवृक्षात् फलानि श्यामाद्यो हन्ति गुल्मं विषमरुचिकफौ
हृद्रुजं मूत्रकृच्छ्रम्।। (सू., १५/४५)

Analysis

Pāda 1

मगण			रगण			भगण			नगण			यगण			यगण			यगण		
ऽ	ऽ	ऽ	ऽ	।	ऽ	ऽ	।	।	।	।	।	।	ऽ	ऽ	।	ऽ	ऽ	।	ऽ	ऽ
श्या	मा	द	न्ती	क्र	व	न्ती	त्र	मु	क	कु	ट	र	णा	श	ङ्खि	नी	च	र्म	सा	ह्वा

Pāda 2

मगण			रगण			भगण			नगण			यगण			यगण			यगण		
ऽ	ऽ	ऽ	ऽ	।	ऽ	ऽ	।	।	।	।	।	।	ऽ	ऽ	।	ऽ	ऽ	।	ऽ	ऽ
स्व	र्ण	क्षी	री	ग	वा	क्षी	शि	ख	रि	र	ज	न	क	च्छि	न्न	रो	हा	क	र	ञ्जाः

Pāda 3

मगण			रगण			भगण			नगण			यगण			यगण			यगण		
ऽ	ऽ	ऽ	ऽ	।	ऽ	ऽ	।	।	।	।	।	।	ऽ	ऽ	।	ऽ	ऽ	।	ऽ	ऽ
ब	स्ता	न्त्री	व्या	धि	घा	तो	ब	ह	ळ	ब	हु	र	स	स्ती	क्ष्ण	वृ	क्षा	त्फ	ला	नि

Pāda 4

मगण			रगण			भगण			नगण			यगण			यगण			यगण		
ऽ	ऽ	ऽ	ऽ	।	ऽ	ऽ	।	।	।	।	।	।	ऽ	ऽ	।	ऽ	ऽ	।	ऽ	ऽ
श्या	मा	द्यो	ह	न्ति	गु	ल्म	वि	ष	म	रु	चि	क	फौ	ह्न	ट्टु	जौ	मू	त्र	कृ	च्छौ

Śuddhavirāṭ[1y]

This varṇavṛttasamachanda is composed of मगण, सगण, जगण and a guru letter i.e. ten letters in each pāda. Pause is at the end.

Example: अम्बष्ठा मधुकं नमस्करी नन्दीवृक्षपलाशकच्छुराः ।
रोध्रं धातकिबिल्वपेशिके कट्वङ्गः कमलोद्भवं रजः ।। (सू., १५/३८)

Analysis

Pāda 1

मगण			सगण			जगण			गु
ऽ	ऽ	ऽ	।	।	ऽ	।	ऽ	।	ऽ
अ	म्ब	ष्ठा	म	धु	कं	न	म	स्क	री

Pāda 2

मगण			सगण			जगण			गु
ऽ	ऽ	ऽ	।	।	ऽ	।	ऽ	।	ऽ
न	न्दी	वृ	क्ष	प	ला	श	क	च्छु	राः

Pāda 3

मगण			सगण			जगण			गु
ऽ	ऽ	ऽ	।	।	ऽ	।	ऽ	।	ऽ
रो	ध्रं	धा	त	कि	बि	ल्व	पे	शि	के

Pāda 4

मगण			सगण			जगण			गु
ऽ	ऽ	ऽ	।	।	ऽ	।	ऽ	।	ऽ
क	ट्ट	ङ्गः	क	म	लो	द्भ	वं	र	जः

Svāgatā

Svāgatā[1z] is a symetrical varṇachanda composed of eleven letters in each pāda. Compositions are: रगण, नगण, भगण and two guru letters. At the end of each pāda there is a slight pause.

Example: ते रसानुरसतो रसभेदास्तारतम्यपरिकल्पनाय च ।
सम्भवन्ति गणनां समतीता दोषभेषजवशादुपयोज्याः ।। (सू., १०/४४)

Analysis

Pāda 1

रगण			नगण			भगण			गु	गु
ऽ	।	ऽ	।	।	।	ऽ	।	।	ऽ	ऽ
ते	र	सा	नु	र	स	तो	र	स	भे	दा

Pāda 2

रगण			नगण			भगण			गु	गु
ऽ	।	ऽ	।	।	।	ऽ	।	।	ऽ	ऽ
स्ता	र	त	म्य	प	रि	क	ल्प	न	या	च

Pāda 3

रगण			नगण			भगण			गु	गु
ऽ	।	ऽ	।	।	।	ऽ	।	।	ऽ	ऽ
स	म्भ	व	न्ति	ग	ण	नां	स	म	ती	ता

Pāda 4

रगण			नगण			भगण			गु	गु
ऽ	।	ऽ	।	।	।	ऽ	।	।	ऽ	ऽ
दो	ष	भे	ष	ज	व	शा	दु	प	यो	ज्याः

Toṭaka

Toṭaka[1aa] is a varṇavṛttasamachanda containing twelve letters in each pāda. The gaṇas present in each pāda are four सगण. Pause is at the end of the pāda.

Example: लवणोत्तमवह्निकलिङ्गयवांश्चिरविल्वमहापिचुमन्दयुतान्।
पिब सप्तदिनं मथितालुडितान् यदि मर्दितुमिच्छसि पायुरुहान्।। (चि., ८/१६१)

Analysis

Pāda 1

सगण			सगण			सगण			सगण		
।	।	ऽ	।	।	ऽ	।	।	ऽ	।	।	ऽ
ल	व	णो	त्त	म	व	ह्नि	क	लि	ङ्ग	य	वां

Pāda 2

सगण			सगण			सगण			सगण		
।	।	ऽ	।	।	ऽ	।	।	ऽ	।	।	ऽ
श्चि	र	बि	ल्व	म	हा	पि	चु	म	न्द	यु	तान्

Pāda 3

सगण			सगण			सगण			सगण		
।	।	ऽ	।	।	ऽ	।	।	ऽ	।	।	ऽ
पि	ब	स	प्त	दि	नं	म	थि	ता	लु	डि	तान्

Pāda 4

सगण			सगण			सगण			सगण		
।	।	ऽ	।	।	ऽ	।	।	ऽ	।	।	ऽ
य	दि	म	र्दि	तु	मि	च्छ	सि	पा	यु	रु	हान्

Upacitrā

Upacitrā[1bb] is a variety of varṇasamakachanda characterised by sixteen mātra in each pāda, where 9th and 10th mātra are united.

Example: पद्मकपुण्ड्रौ वृद्धितुगद्‌र्ध्यः शृङ्ग्यमृता दश जीवनसंज्ञाः।
स्तन्यकरा घ्नन्तीरणपित्तं प्रीणनजीवनबृंहणवृष्याः।। (सू., १५/१२)

Analysis

Pāda 1

2	3	4	6	8	10	11	12	14	16
ऽ	।	।	ऽ	ऽ	ऽ	।	।	ऽ	ऽ
प	द्म	क	पु	ण्ड्रौ	वृ	द्धि	तु	ग	द्‌र्ध्यः

Pāda 2

2	3	4	6	7	8	10	11	12	14	16
ऽ	।	।	ऽ	।	।	ऽ	।	।	ऽ	ऽ
शृ	ङ्ग्य	मृ	ता	द	श	जी	व	न	सं	ज्ञाः

Pāda 3

2	3	4	6	8	10	11	12	14	16
ऽ	।	।	ऽ	ऽ	ऽ	।	।	ऽ	ऽ
स्त	न्य	क	रा	घ्न	न्ती	र	ण	पि	त्तम्

Pāda 4

2	3	4	6	7	8	10	11	12	14	16
ऽ	।	।	ऽ	।	।	ऽ	।	।	ऽ	ऽ
प्री	ण	न	जी	व	न	बृं	ह	ण	वृ	ष्याः

Upajāti

Upajāti[1cc] is generally a combination of both upendravajra and indravajra. According to their (upendravajra and indravajra) position in different pāda, upajātichanda is of 14 types viz. kīrti, vāṇi, māla, śāla, etc. Upajāti may be possible with any similar two chandas like indravaṁśa with vaṁśastha[10] and svāgatā with rathoddhatā.[11] Besides, mixed types of upajāti is also available among vaṁśastha, indravajra and upendravajra.[3c]

Example: रागादिरोगान् सततानुषक्तानशेषकायप्रसृतानशेषान्।
औत्सुक्यमोहारतिदाञ्जघान योऽपूर्ववैद्याय नमोऽस्तु तस्मै।। (सू., १/१)

Analysis

Pāda 1

तगण			तगण			जगण			गु	गु
ऽ	ऽ	।	ऽ	ऽ	।	।	ऽ	।	ऽ	ऽ
रा	गा	दि	रो	गा	न्स	त	ता	नु	ष	क्तान्

Pāda 2

जगण			तगण			जगण			गु	गु
।	ऽ	।	ऽ	ऽ	।	।	ऽ	।	ऽ	ऽ
अ	शे	ष	का	य	प्र	सृ	ता	न	शे	षान्

Pāda 3

तगण			तगण			जगण			गु	गु
ऽ	ऽ	।	ऽ	ऽ	।	।	ऽ	।	ऽ	ऽ
औ	त्सु	क्य	मो	हा	र	ति	दा	ञ्ज	घा	न

Pāda 4

तगण			तगण			जगण			गु	गु
ऽ	ऽ	।	ऽ	ऽ	।	।	ऽ	।	ऽ	ऽ
यो	ऽपू	र्व	वै	द्या	य	न	मो	स्तु	त	स्मै

Upendravajra[1dd]

It is composed of जगण, तगण, जगण and two guru varṇa respectively. Pause is after eleventh varṇa i.e. pādānta.

Example: विडङ्गसारामलकाभयानां पलत्रयं त्रीणि पलानि कुम्भात्।
गुडस्य च द्वादश मासमेष जितात्मनां हन्त्युपयुज्यमानः।। (चि., १९/३१)

Analysis

Pāda 1

जगण			तगण			जगण			गु	गु
।	ऽ	।	ऽ	ऽ	।	।	ऽ	।	ऽ	ऽ
वि	ड	ङ्ग	सा	रा	म	ल	का	भ	या	नां

Pāda 2

जगण			तगण			जगण			गु	गु
।	ऽ	।	ऽ	ऽ	।	।	ऽ	।	ऽ	ऽ
प	ल	त्र	यं	त्री	णि	प	ला	नि	कु	म्भात्

Pāda 3

जगण			तगण			जगण			गु	गु
।	ऽ	।	ऽ	ऽ	।	।	ऽ	।	ऽ	ऽ
गु	ड	स्य	च	द्वा	द	श	मा	स	मे	ष

Pāda 4

जगण			तगण			जगण			गु	गु
।	ऽ	।	ऽ	ऽ	।	।	ऽ	।	ऽ	ऽ
जि	ता	त्म	नां	ह	न्त्यु	प	यु	ज्य	मा	नः

Vaiśvadevi

Vaiśvadevi[1ee] is a varṇavṛttasamachanda charecterised by twelve letters. Each pāda is composed of two मगण and two यगण. Pauses are after five and then after seven i.e. pādānta

Example: रात्रौ गोमूत्रे वासितान् जर्जराङ्गानह्नि च्छायायां शोषयेत्स्फोटहेतून्।
एवं वारांस्त्रींस्तैस्ततः श्ळक्ष्णपिष्टैः स्नुह्याः क्षीरेण श्वित्रनाशाय लेपः।। (चि., २०/११)

Analysis

Pāda 1

मगण			मगण			यगण			यगण		
ऽ	ऽ	ऽ	ऽ	ऽ	ऽ	।	ऽ	ऽ	।	ऽ	ऽ
रा	त्रौ	गो	मू	त्रे	वा	सि	तान्	ज	र्ज	रा	ङ्गान्

Pāda 2

मगण			मगण			यगण			यगण		
ऽ	ऽ	ऽ	ऽ	ऽ	ऽ	।	ऽ	ऽ	।	ऽ	ऽ
अ	ह्नि	च्छा	या	यां	शो	ष	येत्	स्फो	ट	हे	तून्

Pāda 3

मगण			मगण			यगण			यगण		
ऽ	ऽ	ऽ	ऽ	ऽ	ऽ	।	ऽ	ऽ	।	ऽ	ऽ
ए	वं	वा	रां	स्त्रीं	स्तै	स्त	तः	श्ळ	क्ष्ण	पि	ष्टैः

Pāda 4

मगण			मगण			यगण			यगण		
ऽ	ऽ	ऽ	ऽ	ऽ	ऽ	।	ऽ	ऽ	।	ऽ	ऽ
स्नु	ह्याः	क्षी	रे	ण	श्वि	त्र	ना	शा	य	ले	पः

Vaitāḷīya

Vaitāḷīya[1ff] is a mātrāchanda charecterized by fourteen mātra in each odd pāda and sixteen mātra in each even pāda. In each pāda there is a रगण a laghu and a guru varṇa at the end.

Example: अमृतात्रुटिवेल्लवत्सकं कलिपथ्यामलकानि गुग्गुलुः।
क्रमवृद्धमिदं मधुद्रुतं पिटिकास्थौल्यभगन्दरान् जयेत्।। (उ., २८/३८)

Analysis

Pāda 1

1	2	4	5	6	8	9	11	12	14
					रगण			ल	गु
।	।	ऽ	।	।	ऽ	।	ऽ	।	ऽ
अ	मृ	ता	त्रु	टि	वे	ल्ल	व	त्स	कं

Pāda 2

1	2	4	6	7	8	10	11	13	14	16
						रगण			ल	गु
।	।	ऽ	ऽ	।	।	ऽ	।	ऽ	।	ऽ
क	लि	प	थ्या	म	ल	का	नि	गु	ग्गु	लुः

Pāda 3

1	2	4	5	6	8	9	11	12	14
					रगण			ल	गु
।	।	ऽ	।	।	ऽ	।	ऽ	।	ऽ
क्र	म	वृ	द्ध	मि	दं	म	धु	द्रु	तं

Pāda 4

1	2	4	6	7	8	10	11	13	14	16
						रगण			ल	गु
।	।	ऽ	ऽ	।	।	ऽ	।	ऽ	।	ऽ
पि	टि	का	स्थौ	ल्य	भ	ग	न्द	रान्	ज	येत्

Vamśastha[1gg]

Each pāda of this varṇavṛttasamachanda contains twelve letters. Within it four gaṇas are जगण, तगण, जगण and रगण respectively. Pause is at the end of pāda.

Example: निशाकणानागरवेल्लतौवरं सवह्नित्राप्यं क्रमशो विवर्धितम्।
गवाम्बुपीतं वटकीकृतं तथा निहन्ति कुष्ठानि सुदारुणान्यपि।। (चि., १९/४२)

Analysis

Pāda 1

जगण			तगण			जगण			रगण		
।	ऽ	।	ऽ	ऽ	।	।	ऽ	।	ऽ	।	ऽ
नि	शा	क	णा	ना	ग	र	वे	ल्ल	तौ	व	रम्

Pāda 2

जगण			तगण			जगण			रगण		
।	ऽ	।	ऽ	ऽ	।	।	ऽ	।	ऽ	।	ऽ
स	व	ह्नि	ता	प्यं	क्र	म	शो	वि	व	र्धि	तम्

Pāda 3

जगण			तगण			जगण			रगण		
।	ऽ	।	ऽ	ऽ	।	।	ऽ	।	ऽ	।	ऽ
ग	वा	म्बु	पी	तं	व	ट	की	कृ	तं	त	था

Pāda 4

जगण			तगण			जगण			रगण		
।	ऽ	।	ऽ	ऽ	।	।	ऽ	।	ऽ	।	ऽ
नि	ह	न्ति	कु	ष्ठा	नि	सु	दा	रु	णा	न्य	पि

Vasantatilaka[1hh]

It is varṇavṛttasamachanda composed of one तगण one भगण two जगण and two guru letters (fourteen letters). At the end of the pāda there is a slight pause.

Example: आरग्वधेन्द्रयवपाटलिकाकतिक्तानिम्बामृतमधुरसास्रुववृक्षपाठाः ।

भूनिम्बसैर्यकपटोलकरञ्जयुग्मसप्तच्छदाग्निसुषवीफलबाणघोण्टाः ।। (सू., १५/१७)

Analysis

Pāda 1

तगण			भगण			जगण			जगण			गु	गु
ऽ	ऽ	।	ऽ	।	।	।	ऽ	।	।	ऽ	।	ऽ	ऽ
आ	र	ग्व	धे	न्द्र	य	व	पा	ट	लि	का	क	ति	क्ता

Pāda 2

तगण			भगण			जगण			जगण			गु	गु
ऽ	ऽ	।	ऽ	।	।	।	ऽ	।	।	ऽ	।	ऽ	ऽ
नि	म्बा	मृ	ता	म	धु	र	सा	स्रु	व	वृ	क्ष	पा	ठाः

Pāda 3

तगण			भगण			जगण			जगण			गु	गु
ऽ	ऽ	।	ऽ	।	।	।	ऽ	।	।	ऽ	।	ऽ	ऽ
भू	नि	म्ब	सै	र्य	क	प	टो	ल	क	र	ञ्ज	यु	ग्म

Pāda 4

तगण			भगण			जगण			जगण			गु	गु
ऽ	ऽ	।	ऽ	।	।	।	ऽ	।	।	ऽ	।	ऽ	ऽ
स	प्त	च्छ	दा	ग्नि	सु	ष	वी	फ	ल	बा	ण	घो	ण्टाः

Viyogini

Viyogini[12] is a varṇavṛtta ardhasamachanda. Eleven letters of its even pāda is composed of सगण, भगण, रगण along with one laghu and a guru letter. On the other hand, each odd pāda contains two सगण, जगण and a guru letter.

Example: घृतमाशु निहन्ति साधितं ज्वरमग्निं विषमं हलीमकम् ।

अरुचिं भृशतापमंसयोर्वमथुं पार्श्वशिरोरुजं क्षयम् ।। (चि. १/९१)

Analysis

Pāda 1

सगण			सगण			जगण			गु
।	।	ऽ	।	।	ऽ	।	ऽ	।	ऽ
घृ	त	मा	शु	नि	ह	न्ति	सा	धि	तं

Pāda 2

सगण			भगण			रगण			ल	गु
।	।	ऽ	ऽ	।	।	ऽ	।	ऽ	।	ऽ
ज्व	र	म	ग्नि	वि	ष	मं	ह	ली	म	कम्

Pāda 3

सगण			सगण			जगण			गु
।	।	ऽ	।	।	ऽ	।	ऽ	।	ऽ
अ	रु	चिं	भृ	श	ता	प्र	मं	स	यो

Pāda 4

सगण			भगण			रगण			ल	गु
।	।	ऽ	ऽ	।	।	ऽ	।	ऽ	।	ऽ
र्व	म	थुं	पा	र्श्व	शि	रो	रु	जं	क्ष	यम्

Discussion

Aṣṭāṅgahṛdaya is consisted nearly all subject matter of Caraka and Suśrutasamhita. The composer has used a total of thirty three metres to cover all such matters written in the prose-form in the Caraka and Suśrutasamhita under the domain of metres.

Among the metre the anuṣṭup is used in maximum which also suggests the vastness of the metre in common use. Among the other metres upajāti in combination with upendravajra and indravajra is widely used.

Metres like āryā, indravajra, śālinī, svāgatā, vaiśvadevi and vasantatilaka are used moderately frequent. The frequency of appearance of metres like aupacandaśikā, dodhaka, praharṣiṇī, puṣpitāgrā, rathoddhatā, sragdharā, śārdūlavikrīḍita and upendravajrā are between two to three. The metres namely bhadra, dhīralaḷitā, hāriṇī, kusumitalatavellita, mandākrānta, mattamayūra, narkuṭaka, pṛthvi, śuddhavirāṭ, toṭaka, upacitrā, vaitālīya, vamśastha and viyogini are used in single instance.

Conclusion

Study of chanda is an integral part of classical texts based learning. Proper acquaintance of the samhita cannot be possible without the adequate knowledge of each and every metre. Hence proper and logical study of metre according to composition is mandatory in order to recite and memorize the text rhythmically. The aforesaid presented chanda are scientifically analyzed and documented for the onward propagation of classical knowledge.

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   l) 7/16, P 157; m) 6/15 sutra, P 116; n) 7/21 sutra, P 162; o) 7/14, P 154; p) 7/19 sutra, P 159; q) 7/3 P 147; r) 7/1 sutra, P 146; s) 7/17 sutra, P 158; t) 5/41 sutra, P 97; u) 6/22 sutra, P 134; v) 6/19 sutra, P 132; w) 7/22 sutra, P 164; x) 7/25 sutra, P 167; y) 6/9 sutra, P 113, z) 6/23 sutra, P 134; aa) 6/31 sutra, P 138; bb) 4/46 sutra, P 65; cc) 6/17 sutra, P 119; dd) 6/16 sutra, P 118; ee) 6/41 sutra, P 143; ff) 4/32 sutra, P 58, gg) 6/28 sutra, P 58; hh) 7/8 sutra, P 150.

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TṚVṚT (*OPERCULINA TURPETHUM*) - A SHORT REVIEW

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Abstract: Tṛvṛt (*Operculina turpethum*) is a popular and commonly used drug. It is mainly known for its laxative property and is a constituent of many āyurvedic formulations such as Avipattikara cūrṇam, Tṛvṛdādi cūrṇam, Tṛvṛdādi guṭika, etc. It is also used in various preparations of antidotes against snake and scorpion venom. Apart from being a purgative herb, it possesses properties such as anti carcinogenic, anti spasmodic, anti inflammatory, etc. This article briefly reviews the pharmacological and various therapeutic aspects of tṛvṛt.

Introduction

Latin : *Operculina turpethum* (L.) Silva Manso
Syn. : *Merremia turpethum* (L.) Rendle
Convolvulus turpethum (L.)
Ipomoea turpethum (L.) Robert Brown
Family: Convulvulaceae
Gaṇa : Bhedanīya, Viṣaghna (Carakam)
Adhobhagahara, Śyāmādi (Śusrutam)

Vernacular names:- Tripuṭa, saraḷa, suvāha, recani, tribhandi (Sanskrit); dudh kalmi, tohri (Bengali); Nashotar, nahotara (Gujrati); nisoth, nisotar, pitohri (Hindi); bili tigade, bangada balli (Kannada); trikolpakonna (Malyalam); nisottar, phutkari (Marathi); nagophenia, dudholomo (Oriya); sivadai, kumbam (Tamil); tegada, nallategada (Telugu); transparent wood rose, call of the divine grace (English).

Trade name:- Turpeth, Indian Jalab

It is a large, perennial, climbing creeper, containing milky juice. Stem - simple, triangular, having nodes, hairy; leaves - entire or lobed, alternate, cordate, ovate, minutely reticulately veined, acuminate 2-5" long, with 1" stalks; flowers - pedunculated, white in colour, axillary, large, solitary or in few flowered cymes, bell-shaped, infundibulum corolla, large bracts, tube with 5 vertical smooth bands, in 1-4" long inflorescence; sepals - 5, glaborous, increasing and thickness in fruit, at length splitting irregularly from the tip. Stamens - 5 in number, outer sepals are largest, roundish-ovate in shape, 8mm long filament anthers, contorted at length, pollen not echinulate; ovary - 2 celled, glaborous, ovules 4, style filiform, stigma is globose and 2 in number; fruit - globose, 0.5"-0.75", enclosed in a woody calyx, transparent pulp, often has 4 seeds; seeds - black, 2" long, glaborous, often solitary; roots - thick, fleshy, long, branched, blackish red in colour. (Fig. I a-c)

Microscopic examination

Root: - Mature root shows thin cork, consisting

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Fig. I a-c: *Operculina turpethum*
a leaves; **b** flowers; **c** root samples

of 3-5 rows of brown cells. The secondary cortex is 4-6 layered, and is composed of tangential elongated, thin walled cells. Some of the cortical cells are thick walled appearing as isolated. They are sclerenchymatous cells having oval or sub-rectangular shape having a wide lumen. The secretory cavities are surrounded by subsidiary cells and resin canals found scattered in secondary cortex. The secondary phloem, appears as a wide zone, consists of phloem parenchyma and sieve elements. The vascular bundles are arranged in continuous and discontinuous rings, traversed by uni and biseriate medullary rays. The phloem contains numerous resin cells, which are arranged in longitudinal rows. Xylem is situated as 3-5 radiating arms. Xylem vessels are in singles or 2-3 groups, having simple pits on their walls. Calcium oxalate crystals as prisms and rosettes found scattered in cortex, phloem parenchyma, xylem parenchyma and medullary ray cells. Starch grains, both simple and compound, simple ones elliptical to spherical with central cleft hilum and compound grains consisting of 2-4 components, size vary from 5-44µ in diameter, are also found scattered in cortex, phloem parenchyma, xylem parenchyma and medullary ray cells. (Fig. II a-e)

Distribution

Found throughout India, up to 3000 feet. Also found in tropical America, Mauritius, Philippines, tropical Africa and Australia.

Chemical composition

A brownish yellow, odourless, bitter-pungent glucosidal resin is found in the roots, 95% of which is turpethin. Turpethin is soluble in ether. Besides the resin the roots contain a fatty substance, albumin, starch, volatile oil, a yellow colouring substance, salts, lignin and oxides of iron. Ash content is 4.5%.

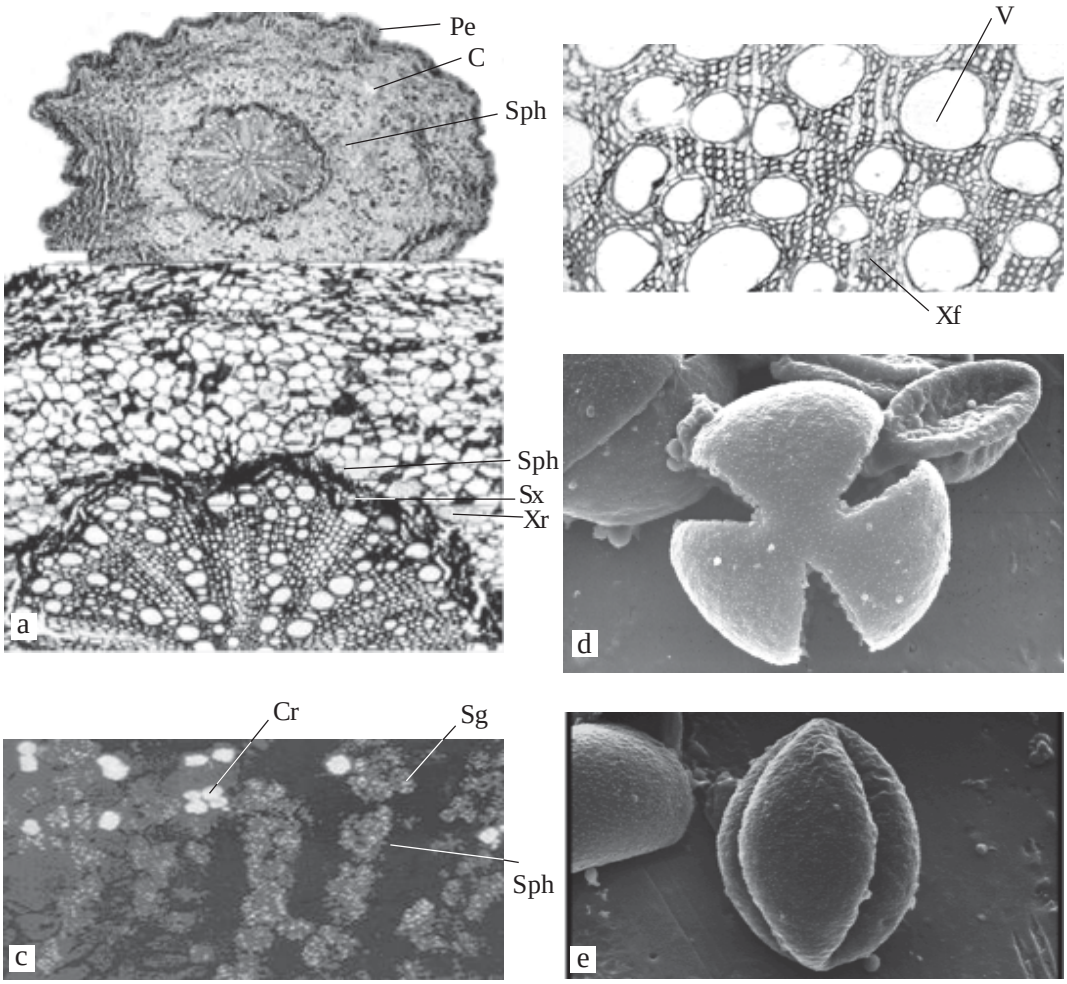

Fig. II a-e: *Operculina turpethum* - Microscopy
a. T.S. of root; b. T.S. of secondary xylem; c. Crystals and starch grains in secondary phloem ray; d&e. Pollen images

C cortex; **Pe** Perderm; **Sph** Secondary phloem; **Sx** Secondary xylem; **Xr** Xylem ray; **V** Vessels; **Xf** Xylem fibres; **Sg** Starch grain; **Sp** Secondary phloem; **Cr** Crystals

Commercial availability

It is easily available in the market. Most of turpeth available in the market is a mixture of stem and roots, or only stems, which are not as effective as the roots, because its purgative property is only in roots. Adulteration and substitution undermine its supposed efficacy. It is used very cautiously as it is a strong purgative and its callous use can cause unwanted effects.

Recognition

Ipomoea turpethum is recognised in Indian Pharmacopoeia list, 1946. The root of its white variety with the bark intact is officially recognised.

Pharmacognosis

The powdered root of *Ipomoea turpethum*, when exposed to UV light, gives off a bluish yellow fluorescence.

Pharmacology

The laxative property of tṛvṛt is attributed to α-turpethin and ß-turpethin content of the plant. In āyurveda, it is classified as bhedanīya and sukhavirecanadravya. Its other actions are: anti-pyretic, anti-helminthic, cathartic and alexiteric.

It is useful in splenomegaly, paralysis, leprosy, fevers (esp. pittaja), relapsing fevers, anaemia, intestinal worms, ascites, leucoderma, itching, liver disorders, constipation, tremors and inflammation. It also has immuno-modulatory action. The flowers are applied to the head in the case of hemicrania. The black variety is a powerful purgative whereas the white variety is moderate or mild cathartic. The white variety does not have any nauseous smell or taste and hence even when it is to be used in larger amounts as compared to the black one, is better for being efficient and mild in taste and action.

Ācārya Caraka says that this drug cures every disease when used in proper form and suitable drug combinations. In the form of compound with other drugs, it is useful in paittika diseases and sannipātajvara. As a constituent of Kalyāṇaka guḍam, it is used in conditions like fevers, micturition difficulty, cough, respiratory problems, tuberculosis, skin disorders, haemorr-hoids, jaundice, fistula-in-ano, anaemia, grahaṇi roga and mandāgni. Its preparation called Vyoṣādi guṭika has efficacy in the above conditions and is also useful for purgation in toxic conditions.

Speciality of *Operculina turpethum* is that with proper formulations it can be used for purgation in any season. It is the only drug described as an all-season-purgative, referred as ṛtu-virecaka.

According to Caraka and Śusruta, the root is also used in the cases of snake bite and scorpion sting; however it is not an antidote to the venom.

Researches and studies

Anticarcinogenic activity:- In recent studies, *Operculina turpethum* was found to have protective effects in experimental rats having breast cancer induced due to oxidative stress by 7, 12-dimethyl benzanthracene induced oxidative stress. The study has reported significant decrease in tumour size and lipid peroxidation activity with increase in anti-oxidant levels.[1]

Antimicrobial activity: - It has reported that the alcoholic extracts of the fresh fruits of *Operculina turpethum* has inhibitory effects against *Micrococcus pyogenes*, *Escherichia coli* and some *Aureus* variety. The drug has potent antibacterial activity against the above microorganisms.[2]

Hepatoprotective activity: - Studies have also shown that *Operculina turpethum* attenuates clastogenicity and N-nitrosodimethylamine induced liver toxicity in experimental rats. It has reported that turpeth can be successfully used as a hepato-protective agent against various hepatic diseases including toxic liver injury.[3]

Significant hepato-protective action of ethanol extract of *Operculina turpethum* against paracetamol induced hepatic damage has experimentally established. Notable lowering of SGOT, SGPT, bilirubin and alkaline phosphatase was seen with positive histopathological examination on liver sections.[4]

Anti inflammatory activity:- The aqueous, ethanolic and ethereal extracts of the drug have reported to possess anti-inflammatory activity against formalin induced arthritis, as well as carrageenin-induced rat paw oedema and cotton pellet induced granuloma, in experimental rats. Among the three types of extracts, the aqueous extract was the most potent fraction against all the three types of models of inflammation in the experiment.[5]

Studies on *Operculina turpethum* root powder and its formulations has shown its effect on reducing gastric hyperacidity and reduced oedema in formalin induced inflammation in experimental rats. It has also shown considerably reduced charcoal movement in the bowels in a charcoal meal test in rat models.[6]

Spasm relieving activity: - The role of uttaravasti with tṛvṛt and laśuna (*Allium sativum*) oil in the management of primary dysmenorrhea has reported significant in a clinical study. Uttaravasti with tṛvṛt and laśuna oil showed encouraging results in udāvartini yonivyāpad. The mode of action can be attributed to anti-inflammatory, vasodilatory, antispasmodic and laxative properties of the trial drugs.[7]

Conclusion

The various experimental studies on *Operculina turpethum* have showed its different activities such as hepato-protective, anti-inflammatory, anti-carcinoma, anti-bacterial, antispasmodic activities and vasodilatory effects. All these prove that the drug is not only a laxative but useful in many other disorders also.

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JĀNUVASTI, RĀSNĀSAPTAKA KVĀTHA AND AŚVAGANDHĀDI CŪRṆA IN JĀNUSANDHIGATAVĀTA W.S.R. TO OSTEO-ARTHRITIS OF KNEE JOINT - A CLINICAL STUDY

Pooja B.A and Santoshkumar Bhatted*

Abstract: Sandhigatavāta is a common disorder seen in aged people. It is described under vātavyādhi characterised by śotha (swelling) and śūla (pain) during prasāraṇa and ākuñcana (flexion and extension). It can be correlated with osteo-arthritis with regard to signs and symptoms. Snehana (oleation) and svedana (sudation) along with oral medications are the main line of treatments. A clinical trial was conducted in 30 cases of sandhigatavāta. Group 'A' was treated by śamanadravyas (oral medications viz. Rāsnāsaptaka kvātha, Aśvagandha, Śatāvari, Madhuyaṣṭi and Copacīni cūrṇa); and Group B was treated with jānuvasti along with oral medication of śamanadravyas. The statistical analysis showed better result in Group B than Group A.

Introduction

Sandhigatavāta is one of the vāta disorders mentioned in āyurveda. Due to kṣaya (degeneration) of dhātu (tissue constituent) and śleṣaka kapha (a type of kapha like synovial fluid) in the sandhis (joints), aggravated vāta gets accumulated in the sandhis and causes kṣaya of dhātu in the sandhi, resulting in sandhigatavāta characterized by śotha (swelling), śūla (pain) during prasāraṇa and ākuñcana (flexion and extension).[1] When such a samprāpti (pathogenesis) takes place in the jānusandhi (knee joint), it is called jānusandhigatavāta. This condition is similar to osteo-arthritis (OA) of the knee in the modern counterpart.

The incidence of OA is ever increasing and so also the impact of analgesics/anti-inflammatory drugs and chances of recurrence; hence a safe and economic treatment modality is necessary. Āyurveda, especially pañcakarma and allied therapies, has been found very effective in the management of sandhigatavāta.

Snehana (oleation) and svedana (sudation) are the prime line of treatment in vāta diseases.[2] As OA is one of vātavyādhis associated with dhātukṣaya and kṣaya of śleṣaka kapha in the sandhis, snehana and svedana together in the form of jānuvasti (oil filling treatment on the knee joint) with Daśamūlataila was opted along with administration of śamana dravyas (palliative drugs) like Rāsnāsaptaka kvātha, aśvagandha, śatāvari, yaṣṭimadhu and copacīni cūrṇa.

Aims and Objectives: - To evaluate the efficacy of Daśamūla taila jānuvasti, Rāsnāsaptaka kvātha and Aśvagandhādi cūrṇa in the management of sandhigata vāta (osteo-arthritis).

Materials and methods

30 patients who fulfilled the diagnostic criteria

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of sandhigatavāta (osteo-arthritis) were selected from the OPD and IPD section of NIA Jaipur, irrespective of sex. The patients were randomly divided into two groups of 15 patients.

The patients in group A were administered the following śamanadravyas in a combination for 15 days:

- Rāsnāsaptaka kvātha - 40 ml twice daily
- Aśvagandha cūrṇa, Śatāvari cūrṇa, Madhuyaṣṭi cūrṇa (1 gm each) and Copacīni cūrṇa (500 mg) - in combination, thrice daily.

The patients in group B were treated with Jānuvasti with Daśamūla taila along with the above śamanadravyas. Follow-up was done after one month.

Diagnostic criteria

- Patients having symptoms like swelling, pain, stiffness and restricted movements in knee joints.
- Positive crepitus on physical examination of the knee joints.
- Degenerative changes in X-Ray of knee joint.

Inclusion criteria: - Patients aged between 30 - 80 years of age having the signs and symptom of sandhigatavāta (osteo-arthritis).

Exclusion criteria: - Cases of severe systemic disorders, infections like tuberculosis of bone and diabetes.

Assessment criteria: - As shown in Table 1

Jānuvasti

Patients were asked to sit comfortably. A ring (about 5-6 cm height and 8-10 cm diameter) made out of black gram powder paste was placed over the knee joint region and fixed properly by pressing its edges from outside and inside. Lukewarm Daśamūla taila poured inside the wall, so that it should cover the whole surface area. According to the patient's tolerance to heat, temperature of the oil was maintained by changing the oil repeatedly and procedure was carried out for 30 minutes.

Observations and results

Of 30 patients, maximum (63.33%) were females and 83.33% between the age of 50-60 years. 53.33% were vāta-kapha prakṛti and 53% were krūrakoṣṭha. 78% were non-vegetarians.

Statistical analysis showed significant result in

TABLE 1
Gradation of cardinal signs & symptoms

Symptoms/signs	Gradation
1. Sandhiśūla (pain in joints)	
- No pain	0
- Occasional pain	1
- Pain during excess work	2
- Constant pain disturbing routine	3
- Severe pain	4
2. Sandhiśopha (swelling in joints)	
- No swelling	0
- Slight swelling	1
- Moderate swelling	2
- Severe swelling	3
3. Sandhigraha (stiffness of joints)	
- No stiffness	0
- Stiffness lasting 5-15 minutes	1
- Stiffness lasting 30 minutes	2
- Stiff. lasting more than 30 min.-1 hr	3
- Stiffness lasting for more than 1 hr	4
4. Sandhisphuṭna (crepitus)	
- No crepitus	0
- Palpable crepitus	1
- Audible crepitus	2
- Fragmented crepitus	3
5. Prasāraṇe ākuñcane ca vedana (pain during movement)	
- No pain	0
- Pain without wincing of face	1
- Pain with wincing of face	2
- Shouts or prevents complete flexion	3
- Doesn't allow the passive movement	4

both the group (Table 2). Group B showed better result during (1month) follow-up (Table 3)

Discussion

Sandhigatavāta is a commonly seen degenerative joint disorder in the old age. Females are more prone to this due to imbalance in hormones. It was observed that maximum female patients belonged to 50 to 60 years age group.

Snehana, svedana and bṛmhaṇa are the main treatments advised for vātavyādhis. Śusruta prescribes snehana (oleation) and svedana (sudation) as the first line of treatment in the management of sandhigatavāta.[4] Jānuvasti is a combination of both snehana and svedana therapy specifically on the knee joint.

Jānuvasti with Daśamūla taila nourishes the sthānika dhātus (local tissues) mainly due to its snigdhaguṇa (unctuous property); and so also this alleviates vāta due to the combined action of snehana and svedana. Provoked vāta is responsible for degeneration of dhātus and manifestation of pain, stiffness and crackles. Snehana helps pacification of vāta and as a part of svedana, the treatment showed marked relief in the symptoms like, śula, stambha, sandhigraha, etc. Modern science also supports the heat therapy by which the local circulation over the particular area is enhanced and thereby inflammation and pain relieved.[5]

Rasnāsaptaka kvātha has actions like srotośodhana (cleanses body channels), vātahara (alleviative of vāta), śūlahara (relieves pain) and śothahara (anti-inflammatory); hence it gave significant improvement in all the sign and symptoms of sandhigatavāta. The ingredient drugs of the kvātha have reported to have

TABLE 2
Effect of the treatment in Group A & B

Parameters	Mean				SD	SE	t	p
	BT	AT	Diff.	n%				
1. Group A (Samanadravya)								
- Sandhiśūla	3.8	1.4	2.4	59.64	0.59	0.15	12.60	<0.001
- Sandhiśopha	2.8	0.73	2.07	73.80	0.79	0.20	10.020	<0.001
- Sandhigraha	3.53	1.06	2.47	69.81	0.74	0.19	12.85	<0.001
- Sandhispuṭana	1.66	0.46	1.2	72	0.56	0.144	8.26	<0.001
- Prasāraṇa ākuñcana vedana	3.33	1.26	2.07	62	0.70	0.18	11.37	<0.001
2. Group B (Śamanadravya & Jānuvasti)								
- Sandhiśūla	3.6	0.8	2.8	74.07	0.72	0.18	14	<0.001
- Sandhiśopha	2.86	0.46	2.4	83.72	0.50	0.13	18.5	<0.001
- Sandhigraha	3.66	0.73	2.9	80	0.70	0.18	16	<0.001
- Sandhispuṭana	1.8	0.2	1.6	88.8	0.50	0.13	12.22	<0.001
- Prasāraṇa ākuñcana vedana	3.46	1	2.46	71	0.74	0.19	12.85	<0.001

TABLE 3
Effect of the treatment after 1 month followup (as a outdoor patients) in Group A & B

Parameters	Mean				SD	SE	t	p
	BT	AT	Diff.	n%				
1. Group A (Śamanadravya)								
- Sandhiśūla	3.8	1.2	2.6	56.64	0.55	0.12	10.60	<0.001
- Sandhiśopha	2.8	0.53	2.27	70.80	0.73	0.18	9.020	<0.001
- Sandhigraha	3.53	1.02	2.51	65.81	0.70	0.16	11.85	<0.001
- Sandhispuṭana	1.66	0.30	1.36	70	0.53	0.112	7.12	<0.001
- Prasāraṇa ākuñcana vedana	3.33	1.12	2.21	61	0.69	0.16	9.25	<0.001
2. Group B (Śamanadravya & Jānuvasti)								
- Sandhiśūla	3.6	1.8	1.8	68.07	0.62	0.15	12	<0.001
- Sandhiśopha	2.86	0.86	2	78.72	0.40	0.9	14.5	<0.001
- Sandhigraha	3.66	1.3	2.3	75	0.65	0.13	12	<0.001
- Sandhispuṭana	1.8	0.6	1.2	80.8	0.40	0.8	9.22	<0.001
- Prasāraṇa ākuñcana vedana	3.46	1.34	2.12	67	0.64	0.12	9.85	<0.001

analgesic activity. The extract of the root of *Pluchea lanceolata*,[6] *Tinospora cordifolia*[7] and *Ricinus communis*[8] has analgesic and anti-inflammatory effect on damaged human osteo-arthritic cartilage.

Aśvagandha (*Withania somnifera*) possesses śothahara (anti-inflammatory), vātahara, vedanāsthāpana, śūlapraśamana (analgesic) and rasāyana (rejuvenative) actions. An experimental study on animal has reported that aśvagandha showed significant analgesic activity.[9] Its root powder has chondroprotective effect.[10]

Śatāvari (*Asparagus racemosus*) has snigdhaguṇa, madhurarasa, vātapittaśāmaka, balya and rasāyana properties. Madhuyaṣṭi (*Glycyrrhiza glabra*) also has vātahara and rasāyana properties. Its anti-inflammatory effect has been testified.[11] Combination of these drugs helps in the nourishment of the dhātu and thereby provides better relief.

Copacīni (*Smilax china*) cūrṇa has tridoṣaśā-maka, śothahara and vedanāsthāpaka properties. Also it has better penetration property and thus it helps in the better absorption.

Conclusion

The study showed marked relief in the signs and symptoms of sandhigatavāta in both groups. However, comparatively Jānuvasti with śamanadravya treated group showed better result. This therapy is safe, economical and effective for the management of sandhigatavāta.

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OZENA (PŪTINĀSA) - A CASE STUDY

N. Vijayalakshmi*

Abstract: Ozena is a disorder of the nasal mucosa in which the sides of the nasal cavity become atrophied with the production of an offensive smell and crusts. There are number of causes and different treatment modalities available for this condition. Generally, after the treatment, the symptoms are reduced but sometimes end up in permanent loss of smell and impairment of taste. In the classics of āyurveda, this ailment is described as pūtināsa (ozena) under the nāsāgata vyādhis (rhinopathy). Vamana (medicated emesis), one of the major purificatory measures, is indicated for ūrdhvajatrugata rogas (diseases of head & neck) in Bṛhattrayī. A case of an 18 year old male who presented with complaints of foul smell from nose, muco-purulent nasal discharge and excoriation of skin of the nasal vestibule is discussed here.

Introduction

Ozena is a special form of chronic atrophic rhinitis, one of the nose diseases characterised by intranasal crusting, atrophy of the nasal mucous membrane and a fetid odour. It may follow chronic inflammation of the nasal mucosa. The treatment of ozena in the modern medicine nasal irrigation and removal of crusts using alkaline solutions, application of 25% glucose to the nasal mucosa to inhibit the growth of foul smelling proteolytic organisms, local antibiotics and surgical interventions.

In āyurveda it can be correlated with putināsa, one of the nāsagata rogas, in which the main symptom is foul smell from the nose and mouth.[1] The main treatment of nāsagata rogas as well as ūrdhvajatrugata rogas is vamana. In putināsa, as the root cause lies in the ūrdhvajatrubhāga, vamana is the treatment of choice.

Case report

An 18 year old male presented with complaints of foul smell from nose, muco-purulent nasal discharge and nasal obstruction on/off since four years. The patient also complained excoriation of the skin of the nasal vestibule once every 15-20 days.

Examination:- A foul smell was present with a thick muco-purulent nasal discharge, mucosal crusting and mild deviation of nasal septum along with excoriation of skin of the nasal vestibule. There was slight tenderness over the tip of the nose. Routine haematology (Hb, TC, DC and, ESR) investigations were done. Hemoglobin % was reduced and ESR was increased.

Past history:- Patient had taken nasal irrigation with alkaline solution and crusts were removed once in 15 days for 6 months in 2010. After discontinuation of the therapy, the condition relapsed.

Treatment

The patient was subjected to vamana. The

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details of the procedure are described in the Table-1.

Before starting vamana, yaṣṭīmadhu (*Glycyrrhiza glabra*) was applied with cow's ghee over the excoriation of skin twice daily for 10 days and it was cured.

Pathya: Advised to follow the samsarjanakarma, laghu and uṣṇa āhāra.

Apathya: - Advised not to take head bath, cold water, dadhi, śīta (cold) āhāra.

Results

The features of vestibulitis disappeared after vamana. The foul smell (ozena) and nasal obstruction disappeared due to the elimination of vikṛtakapha and pitta from the nose. The patient was not given any internal medicines.

Discussion

Normal nasal mucosa is lined with pseudo stratified columnar epithelium and has abundant mucous and serous glands. In atrophic rhinitis the epithelial layer undergoes squamous metaplasia and subsequent loss of cilia. Glands and goblet cells become fewer. The endarteritis of blood vessels causes diminished blood supply to the mucosa. As a result of the loss of ciliated epithelium, thick viscid secretions of the nose get stagnated and results in secondary infections and crust formation.[3]

Indication of vamana: - Mainly vitiated kapha is responsible for causing saṅga (obstruction) in nose. The main treatment for accumulated doṣas in pūtināsa is purification by vamana as śodhana only can completely eliminate the pathology. As mentioned by ācārya Śusruta (uttarasthāna)[4], vamana is the best among all the śodhana therapies (for ūrdhvajatrugata vyādhi located in siras).

Criteria of selection of vamana drugs: - Tila taila (Sesame oil) is used for abhyaṅga in pūrvakarma of vamana due to its snigdha (unctuous) guṇa and tridoṣaśāmaka properties; due to sūkṣma and śrotogāmi properties, it reaches the minute channels. Mukhābhyaṅga (facial massage) increases the blood circulation and helps in mobilization of the doṣas from the site of morbidity to the site of elimination.[5] Sveda-karma causes liquefaction of the accumulated

TABLE 1
Procedure of vamana

Dīpana-pācana drug	Hiṅgvaṣṭakacūrṇa for 3 days with warm water.
Pūrvakarma (prerequisite procedure)	Indukāntaghṛtam[2] for 5 days in increasing order starting from 60 ml in empty stomach. After attaining samyaksnigdhalakṣaṇas, external oleation and sudation were done.
Pradhānakarma (main procedure) (Abhyantara snehapāna)	Vamana with madanaphala (*Catunaregum spinosa*),vaca (*Acorus calamus*), madhu (honey), saindhavalavaṇa (rock salt) mixed in decoction of yaṣṭīmadhu (*Glycerrhiza glabra*) after ākaṇṭha-kṣīrapāna with cow's milk.
Paścātkarma (post procedure)	Dhūmapāna with Rāsna varti
Samsarjanakarma	Peyādikrama observed.

doṣas (especially kapha) and helps to drain out the doṣas due to śrotomukha-viśodhana, anti-microbial, anti-inflammatory, immuno-stimulatory properties. This procedure of sweating also helps in the elimination of doṣas from the affected part into the āmāśaya from where it is removed by vamana.[6]

Madanaphala has madhura, tikta, kaṣāya rasas; laghu, rūkṣa, uṣṇa and tīkṣṇa guṇas; vyavāyi, vikāsi and kaṭu vipāka; uṣṇa vīrya; and properties like kaphaśāmaka, śothahara, śrotośodhana, vātānulomana, lekhana (scraping), kapha-nissāraka, śḷeṣmahara, anti-inflammatory, antibacterial, antiviral, and immunostimulatory.[7,9] Vaca has laghu, tikṣṇa guṇa; kaṭu, tikta rasa; and properties such as pittavardhaka, kapha-vātaśāmaka, śrotośodhana, lekhana, śothahara, vātānulomana, kaphanissāraka, anti-bacterial, anti-inflammatory, and immunomodulatory.[10.] Saindhavalavaṇam, by virtue of its laghuguṇa pacifies the kapha and by mṛduguṇa pacifies pitta and vāta. In larger doses (4-8 drachms*) it is emetic. It is cakṣuṣya and aphrodisiac; avidāhi, can be used for healing process.[10] Yaṣṭīmadhu has tridoṣahara, varṇya, kaṇṭhya, rasāyana, vṛṣya, cakṣuṣya properties; madhura vipāka; śīta vīrya; guru and snigdha guṇas, madhura rasa and vamanopaga.[10] Madhu has lekhana, uttamayogavāhi, tridoṣahara, varṇya, cakṣuṣya, vṛṣya properties; madhura vipāka; śītavīrya; guru and snigdha guṇas; madhura rasa and vamanopaga.[10.]

Mode of action of vamana: - In pūrvakarma of vamana, abhyaṅga and svedana cause mṛdutva and vilayana (liquefaction) of accumulated doṣas; increase the local blood supply and liquefies the mucous; makes the drug absorption faster due to vasodilatation of blood vessels and increased permeability; brings the vitiated doṣas from śākha (not from the extremities from the dhātus) to koṣṭha.[11]

In pradhānakarma, the drugs administered orally enters the āmāśaya (stomach), the ūrdhvajatru, different siras (channels) and spreads to nose, head, throat and removes the morbid doṣas to make śrotośuddhi, anulomagati of vāyu and expel them through the nearest outgoing path of the body.[12] Most of the drugs in vamana procedure are having properties that help to remove the śrotorodha (nasal obstruction) and promote the expulsion of vitiated kapha from the nose. The dīpana and pācana properties of the drugs cause āmapācana, dhātvāgni dīpti and facilitate the formation of sāra dhātus, ojus and thereby increases the immunity. The anti-inflammatory properties of the drugs reduce the inflammation in the nose; by vedanāsthāpana, kaṇṭhya and śrotośodhana properties, they help to provide symptomatic relief in pain, svarabheda and to purify the morbid factors. The antibacterial activity arrests secondary infection and prevents recurrence of the disease. Vamana has śothahara action, samprāptivighaṭana and eliminates the root cause by the virtue of laghu, rūkṣa guṇa; kaṭu vipāka; and properties such as tridoṣaśāmaka, lekhanakāri, chedana, yogavahi and sūkṣmamārgānusāri. Madhu directly acts on the vikṛtakapha besides being a vehicle for the auṣadhadravya.[13]

The drugs used in vamana do santarpaṇa of tissues, and are snehakṛt, mārdavakṛt and balakṛt to tissues. Thus vamana is the effective śodhana procedure to eliminate the saṅga caused by vitiated kaphadoṣa, the rogādhi-sthāna is nāsika which is an ūrdhvajatru aṅga, and putināsa is an ūrdhvajatrugatavikāra.

* 1 drachm = 3.888 gram

Paścātkarma: - After 45 minutes of vamana, dhūmapānam was given to remove the residual kapha to avoid reoccurrence. These procedures clear the passages of nose and throat by removing the kaphadoṣa.[14] In samsarjanakarma, peyādikrama was followed to re-establish the normal digestive fire.[15]

Conclusion

Ozena is a disease which not only affects the body but also produces mental depression. Āyurvedic line of management showed excellent results by reaching the two main goals of the therapy i.e. restoration of nasal hydration and minimization of crusting and debris. The recurrence rate was significantly lower. Complete eradication is possible by regular undergoing of vamana and other pañcakarma procedures season-wise as the disease aggravates even by minute cause.

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EFFECT OF GARBHAPALRASA IN PREGNANCY INDUCED NAUSEA AND VOMITING (NVP)

Mishra Deepa[1], Sinha Mukta[2] and Kumar Vikas[3]

Abstract: Nausea and vomiting are the commonest symptoms experienced in the first trimester of pregnancy and can occur at any time of the day and may be constant. A study was conducted in 94 pregnant women to evaluate the efficacy of Garbhapal rasa in nausea and vomiting during pregnancy. The result was found encouraging.

Introduction

Āyurveda describes certain symptoms, which are due to the pregnant status of the woman. These symptoms are peculiar to pregnancy and are called garbhopadravas; they are nausea, anorexia, vomiting, fever, oedema, anaemia and diarrhoea.[1] Kaśyapa has emphasized that proper management of disorders during pregnancy is helpful protection and development of both mother and fetus.[2]

Nausea and vomiting may be seen in pregnancy. Mild nausea experienced during pregnancy can be normal, and should not be considered an immediate cause for alarm. However, in some severe rare cases (hyperemesis gravidarum) there may be an increased risk of low birth weight, congenital malformations, undescended testicles and hip dysplasia (Weigel *et al*., 1989).

According to the author of Ras Chandanshu (17th century), the drug Garbhpal rasa cures all minor ailments of pregnant women.[1] It contains minerals like hiṅguḷa (Cinnabar - HgS), nāga (lead - Pb), vaṅga (Tin - Sn) and lohabhasma (Iron - Fe); and herbs like dālcīni (*Cinnamomum verum*), ela (*Elettaria cardamomum*), tejpatra (*Cinnamomum tamala*), śuṇṭhi (*Zingiber officinale*), marica (*Piper nigrum*), dhānyaka (*Coriandrum sativum*), cavya (*Piper mullesua*), kṛṣṇajīrakam (*Nigella sativa*), drākṣa (*Vitis vinifera*) and devadāru (*Cedrus deodara*). All ingredients in equal quantity except lohabhasma (half quantity than others) were triturated in the extract of viṣṇukrānta (*Clitoria ternatea*).

Aim of study:- To assess the efficacy of Garbhapal rasa on pregnancy induced nausea and vomiting (NVP).

Materials and methods

Inclusion criteria:- Women belonging to age group 18 to 38 years, having amenorrhoea due to pregnancy, history of spontaneous abortion, history of intra uterine death/still birth, history of preterm delivery or any other obstetric problem during previous pregnancies were included in this study.

Exclusion criteria:- Women having essential hypertension, severe anaemia, severe degree of

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pregnancy induced hypertension, diabetes mellitus, hypo/ hyperthyroidism, liver or renal disorder were excluded.

Grouping of patients: - 94 pregnant women were randomly selected and registered from the OP, Prasutitantra, Sir Sunderlal Hospital, BHU, Varanasi. The cases were categorized as follows:

Group 1:- Patients from first trimester having normal course of pregnancy with no specific obstetric or medical history.

Group 2:- Patients from first trimester with risk factors like history of spontaneous abortion, pregnancy induced hypertension in previous pregnancy, preterm delivery, previous caesarean section within two years, elderly primigravida, TORCH (Toxoplasmosis, Rubella, Cytomegalo-virus, Herpes) infection, on anti-tubercular treatment.

Each group was subdivided into control and trial:

Control group (C_1, C_2):- Patient received routine medication folic acid and B-complex as advised in 'Prasuti' OPD. Combination of pyridoxine and doxylamine succinate advised to patients as per need.

Trial group (T_1, T_2):- Patient supplemented with Garbhpal rasa (120 mg bid with milk and grapes) and folic acid.

Assessment criteria: - According to the intensity of symptoms, scoring was done as follows: 0 - Nil; 1- Mild; 2 - Moderate; 3 - Severe.

Parameter studied: - The effect of the trial drug was assessed considering the following:

1. Pregnancy induced nausea and vomiting.
2. Biochemical and haematological parameters (Haemoglobin, TLC, DLC, Fasting blood sugar, Blood urea, Serum creatinine, Serum bilirubin, SGOT, SGPT, Alkaline phosphatase, Serum protein, Serum albumin), Urine (routine and microscopic) and Ultrasonography (any gross congenital anomaly).

Patients were followed up at 15 days' interval - 3 follow ups from second months onwards. Heamatological and biochemical test were advised before treatment and at 9th month gestation.

Statistical analysis: - All data were expressed in mean ± SD. Symptoms were compared with chi square test. Significant changes were observed in haematological and biochemical parameter through paired and unpaired 't' test.

Result and discussion

Results were assessed mainly on the basis of absence/less incidence or relief in minor ailments (symptoms), untoward effect on haematological and biochemical blood parameters, if any.

Effect of the trial drug

Nausea and vomiting:- Table (1) shows comparison of patients suffering from nausea in trial and control group. Initially symptom of nausea found in 69.23% in the control group while it was found in 67.23% in the trial group. But the severity of symptom was more (5.13% women had severe degree of nausea) in control group. During second follow up, nausea was observed in less number of cases in trial group compared to control, changes were significant in respect to control. In 3rd follow up, nausea remained only in 3.62% women in trial group compared to control (15.38%).

Table (2) shows that initially 60% and 58.97% women in the trial and control group respectively were suffered from vomiting. Severity of symptoms was more in control group (7.96% cases of severe degree of vomiting in

TABLE 1
Effect of Garbhpal ras on nausea

Group	Score	Follow Up*								Initial Vs III
		Initial		I		II		III		
		No.	%	No.	%	No.	%	No.	%	
T=T_1+T2 (n=55)	0	18	32.73	12	21.81	39	70.91	53	96.36	χ^2=14.565 P<0.01 S
	1	29	52.73	32	58.18	16	29.10	2	3.64	
	2	7	12.73	11	20	0	0	0	0	
	3	1	1.82	0	0	0	0	0	0	
Mean ±SD		0.84±0.71		0.98±0.65		0.29±0.46		0.04±0.19		
C=C_1+C_2 (n=39)	0	12	30.77	5	12.82	23	58.97	33	84.62	χ^2=5.183 P<0.05 S
	1	19	48.72	15	38.46	14	35.90	5	12.82	
	2	6	15.38	16	41.03	2	5.13	1	2.56	
	3	2	5.13	3	7.69	0	0	0	0	
Mean ±SD		0.95±0.83		1.44±0.82		0.46±0.60		0.18±0.45		
Intergroup Comparison with Chi-square test		χ^2=0.577 P>0.05 NS		χ^2=8.693 P<0.001 HS		χ^2=0.965 P>0.05 NS		§		

*at very 15 days interval; § Frequency of column is less than 5, so can't be compared.

TABLE 2
Effect of Garbhpal ras on vomiting

Group	Score	Follow Up*								Initial Vs III
		Initial		I		II		III		
		No.	%	No.	%	No.	%	No.	%	
T =T_1+T2 (n=55)	0	22	40	14	25.45	37	67.27	55	100	χ^2=7.165 P<0.01 HS
	1	24	43.63	29	52.73	18	32.73	0	0	
	2	8	14.55	12	21.82	0	0	0	0	
	3	1	1.82	0	0	0	0	0	0	
Mean ±SD		0.78±0.76		0.96±0.69		0.33±0.47		0.00±0.00		
C =C_1+C_2 (n=39)	0	16	41.03	5	12.80	22	56.41	34	87.18	χ^2=1.524 P>0.05 NS
	1	15	38.46	13	33.33	15	38.46	5	12.82	
	2	5	12.80	18	46.13	2	5.13	0	0	
	3	3	7.69	3	7.69	0	0	0	0	
Mean ±SD		0.87±0.92		1.49±0.82		0.49±0.60		0.13±0.34		
Intergroup Comparison with Chi-square test		χ^2=0.259 P>0.05 NS		χ^2=10.391 P>0.01 HS		χ^2=0.734 P>0.05 NS		§		

*at every 15 days interval

§ Frequency of column is less than 5, so can't be compared.

control and 1.82% in trial). In the follow up period, it was seen that relief in vomiting was more in trial group. Statistically significant difference was observed, while compared to 3rd follow up with initial finding in trial group.

Chief doṣa involved in chardi (vomiting) is vāyu, mainly the udāna and vyāna. Drugs exhibit their action by dravyaprabhāva, guṇaprabhāva or both. The ingredient drugs viz. ela, dālcīni and tejpatra, being anulomaka, turned the ūrdhvagāmivāta in downwards direction and thus helped to check chardi. This action can be attributed to dravyaprabhāva. Drākṣa, dhānyaka, pippali, śuṇṭhi, ela, tejpatra, dālcīni being madhura, pacify both vāta and pitta so relieves vamana by guṇaprabhāva.

Āyurvedic sources notify that ginger is the best remedy for morning sickness in pregnancy.[3] Śuṇṭhi plays an effective role against pregnancy related morning sickness.[4] Dhānyaka[3] and ela (Mishra *et al.*, 2007) have also shown similar effect.

Conclusion

Pregnancy induced nausea and vomiting is a natural and physiological phenomenon, hence need not be prevent completely like a disease. Garbhpal rasa manages and also limits the periods of nausea and vomiting. It also improves hemoglobin level. Normal biochemical and haematological blood parameters show non toxic nature of the drug.

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ĀYURVEDIC TREATMENT IN CERVICAL SPONDYLOSIS - A PILOT STUDY

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Abstract: Cervical Spondylosis is a degenerative disc-ailment. Recent study shows that middle aged population is more prone to degenerative disc changes. This may be because of faulty regimen and lifestyle. A study was conducted by nasya, grīvavasti and patrapoṭṭalisveda as a combined treatment to get maximum relief in a minimal period of time. More attentiveness was given to the bahiparimarjanacikitsa to the affected part i.e. grīva and manya pradeśa. The result was satisfactory.

Introduction

Degeneration is a natural process. Sedentary life style and nature of work, over exertion, jerky movements during travelling, sports, all these factors play a major role in producing diseases like cervical spondylosis.

Cervical Spondylosis is the most common disorder of the cervical spine. It is caused by degenerative changes in the vertebrae and intervertebral discs that occur as a result of constant improperly usage of cervical spine, injury, ageing, rheumatoid disease, etc. A number of factors responsible for the development of signs and symptoms of Cervical Spondylosis are:

- Osteophyte (bony growth).
- A narrowed spinal canal present since birth.
- Degeneration of the intervertebral discs.
- Changes in the spinal cord and nerves due to insufficient blood supply.

There is no clinical entity mentioned in āyurvedic classics to correlate with cervical spondylosis but it can be considered as grīvahundana or asthigatavāta because of i) śoṣaṇa of asthidhātu (in cervical region), ii) dūṣaṇa of vāta, iii) increase of rūkṣaguṇa of vāta and iv) āvaraṇa of śḷeṣaka-kapha and its śoṣaṇa by pravṛdhavāta.

It leads to pain and stiffness in neck, radiating pain into arm, headache, vertigo, giddiness, paraesthesia, numbness, etc. Modern medical science provides both conservative and surgical treatment for cervical spondylosis but is not satisfactory.

Materials and methods

An open, randomized, preliminary clinical study was conducted on 7 patients having classical signs and symptoms of cervical spondylosis selected from OPD & IPD of DGM Ayurvedic Medical College & Hospital, Gadag.

Inclusion criteria: - Diagnosed cases of cervical spondylosis based on classical signs and symptoms.

Exclusion criteria:- Patients below 20 and more than 60 years of age and those having the history of fracture, surgical emergencies and systemic

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diseases; patients who are not fit for nasya karma were also excluded from the study.

Assessment criteria:- A special research proforma was prepared incorporating both āyurvedic and modern views. Subjective parameters like manyāśūla, manyāstambha, bāhuśūla, grīvaśūla and objective parameters like flexion, extension, lateral (right & left) flexion, rotation, passive neck flexion were graded for assessment. (Table 1)

Hematological analysis (Hb%, T.C., D.C. and E.S.R.) was done and bio-chemical tests (RBS) were carried out to rule out the possibility of any other diseases. X-ray of cervical spine anterio-posterior and lateral view were taken to rule out fracture, joint obliteration and other possibilities of exclusion.

Treatment

External: - Step 1 - Grīvavasti with Prabhanjanam khuzumbu and Sahacarādi taila; Step 2 - Patra poṭṭalisveda;- Step 3 - Nasya with Dhānvantaram (101)

Internal: - Daśamūlam kaṣāya 15ml twice daily with warm water, before food.

Step 1 - Grīvavasti

Patients are made to prone position or sit on the chair flexing their neck resting on a platform with extended arm so far to expand the cervical spine area. In this position para spinal muscles are completely relaxed. A brim with māṣakalka was prepared around the cervical spine area with due care to expose the affected part of the spine. Warm oil (Prabhanjanam kuzhambu and Sahacarādi tailam mixed in equal quantity) was poured into the brim and constant temperature was maintained by replacing oil periodically for a prescribed time.

TABLE 1
Gradation of subjective & objective parameters

Parameter	Grade
A. Subjective parameters:	
1. Manyāśūla	
- No pain	0
- Mild pain	1
- Moderate but tolerable	2
- Moderate but intolerable	3
- Severe intolerable/often suicidal	4
2. Manyāstambha	
- No movement	0
- Up to 25% of total movement	1
- Up to 50% of total movement	2
- Up to 75% of total movement	3
- Full range of total movement	4
3. Bāhuśūla	
- No pain	0
- Mild (On movement, radiating from the neck)	1
- Moderate (On movement, radiating from the neck)	2
- Severe (Constant pain affecting routine work)	3
- Severe (Constant pain reducing the arm strength)	4
4. Grīvaśūla	
- No pain	0
- Mild pain	1
- Moderate (tolerable)	2
- Moderate (intolerable)	3
- Severe (Intolerable/often suicidal)	4
B. Objective parameters:	
1. Flexion & extension	
- Full range	0
- Restricted movements	1
- No movements	2
2. Lateral flexion & rotation	
- Full range	0
- Restricted movements	1
- No movements	2
3. Passive neck flexion	
- Without any difficulty	0
- With some difficulty	1
- With much difficulty	2
- Unable to do	3

Grīvavasti was carried in ārohaṇa (ascending) and avarohaṇa (descending) pattern for 30 minutes on 1st day and then increased by 5 minutes till 5th day and 6th day onwards decreased by 5 minutes daily till 10th day.

After the grīvavasti, sthānikābhyaṅga was done with the same taila. Abhyaṅga was followed by patrapoṭṭalisveda.

Step 2 - Patrapoṭṭalisveda

Small sized chopped leaves of eraṇḍa (*Ricinus communis*), nirguṇḍi (*Vitex negundo*), arka (*Calotropis gigantia*), karañja (*Pongamia pinnata*), śigru (*Moringa pterygosperma*), nimba (*Azadirachta indica*) and ciñca (*Tamarindus indica*) along with small pieces of lemon, coconut scrapings and saindavalavaṇa (rock salt) were fried in a pan using little quantity of the above taila until turns to golden-brown. Then poṭṭali was prepared; sthānikasveda was done until appearance of samyaksvinnalakṣaṇas.

Step 3 - Nasya

Nasya (errhines) was carried out 5 minutes after patrapoṭṭalisveda. Mukhābhyaṅga was done with the same oil as pūrvakarma, and mṛdusveda was given with a cloth dipped in hot water. The patient was then asked to lie on supine position with neck slightly extended. Dhānwantaram (101 time medicated), was taken in nasyayantra and 8 drops of oil was poured into both nostrils in uninterrupted stream i.e. 'avicchinna dhāra' and asked the patient to slowly inhale the medicine but not to swallow. Patient was asked to keep the same position for 5 minutes and then to spit the medicine that descent in throat. Lukewarm water with a little saindhavalavaṇa was given for gargling and then haridrādhūma was done.

All the procedures were done for 10 days.

Observation

Of 7 patients, 2 were males and 5 females; 4 patients were between the age group of 28-35, 2 were 36-45 and one 46-55. 2 pateints were vegetarians and 5 were non-vegetarians; with regard to occupation, 4 were active workers, 1 sedentary and 2 heavy workers. Distribution of patients according to sex, age, diet and occupation is shown in Table 2.

Most of the symptoms i.e. manyāśūla, manyāstambha, bāhuśūla, grīvaśūla and amśaśūla were present in all the patients. Distribution of the patients according to clinical presentation is shown in Table 3. Among 7 patients, 5 were having vāta-kapha prakṛti and 2 vāta-pitta

TABLE 2
Distribution of patients according to sex, age, diet and occupation

Sl. No	Sex		Age	Diet		Occupation		
	M	F		Vegetarian	Mixed	Active	Sedentary	Labour
1		+	28		+	+		
2	+		32	+			+	
3		+	35		+	+		
4		+	34	+		+		
5	+		46		+			+
6		+	40		+			+
7		+	45		+	+		

prakṛti; With regard to abhigataja kāraṇa, 6 patients were of non traumatic and 1 was having history of injury.

Results

Subjective parameters: - The therapy has shown highly significant (P <0.001) results in all the subjective parameters viz. manyāśūla, manyā-stambha, grīvaśūla and bāhuśūla (Tables 4&5)

Objective parameters: - The effect of therapy in all the objective parameters viz. flexion, extension, lateral flexion, rotation and passive neck flexion was statistically highly significant - P <0.001 (Tables 5&6).

Radiological study not revealed any significant changes in post treatment images. This conclusion was drawn after evaluating the results by Sing's index.

Overall effect:- Pre and post test result were analyzed statistically for 'p' value using paired 't' test and test is significant at 81.26% with p<0.01. The overall result showed that 5 patients got good result; moderate response and mild response were seen in one patient respectively.

TABLE 3
Distribution of patients according to clinical presentation

Symptoms	No. of patients	%
01. Manyāśūla	7	100
02. Manyāstambha	7	100
03. Bāhuśūla	7	100
04. Grīvaśūla	7	100
05. Aruci	5	71.428
06. Śiraśśūla	6	85.714
07. Admana	4	57.142
08. Amśaśūla	7	100
09. Nidrānāśa	6	85.714
10. Angamarda	6	85.714
11. Gaurava	5	71.428
12. Klama	6	85.714
13. Suptata	5	71.428

TABLE 4
Gradation on subjective parameters

Sl.	MS		MSt		BS		GS	
No	BT	AT	BT	AT	BT	AT	BT	AT
1	3	0	3	1	3	0	3	0
2	2	1	3	2	3	2	2	1
3	3	0	2	1	3	0	3	0
4	2	0	3	1	3	2	2	0
5	3	0	3	1	1	0	3	0
6	3	1	3	1	2	1	3	0
7	3	0	2	1	3	0	3	0

MS - Manyāśūla; MSt - Manyāstambha; BS - Bāhuśūla; GS - Grīvaśūla

Discussion

Bṛmhaṇa and rasāyana therapy are indicated in the initial stage. Inter vertebral disc is a cushion-like structure gives protection to vertebral bodies from the friction. Degeneration in the disc leads to undue pressure over the nerve roots. Cervical spondylosis is characterised by degeneration, disc protrusion, calcification and consequent pressure on the nerve roots of the cervical and brachial plexus.

Kṣaya (degeneration) is an integral character of vātadoṣa with associated contribution of kapha and pitta doṣas. Śūla is vāta predominant

TABLE 6
Gradation on objective parameters

Sl.	F		E		LF		R	
No	BT	AT	BT	AT	BT	AT	BT	AT
1	1	0	1	0	1	0	1	0
2	1	0	1	1	1	1	1	0
3	1	0	1	0	1	0	1	0
4	1	0	1	0	1	0	1	0
5	1	0	1	0	1	0	1	0
6	1	0	1	0	1	0	1	0
7	1	0	1	0	1	0	1	0

F- Flexion; E - Extension; LF - Lateral (right & left) flexion; R - Rotation

TABLE 5
Statistical data of subjective and objective parameters

Parameters	Mean		Improvement (%)	SD	SE	't'	P
	BT	AT					
1. Subjective parameters							
- Manyāśūla	2.714	0.285	89.4	0.78	0.297	8.0645	P<0.001
- Manyāstambha	2.714	1.142	57.92	0.534	0.202	7.779	P<0.001
- Grīvaśūla	2.714	0.142	94.8	0.786	0.297	8.619	P<0.001
- Bāhuśūla	2.571	0.857	66.6	0.951	0.359	4.774	P<0.01
2. Objective parameters							
- Flexion	1	0	100	0	0	0	P<0.001
- Extension	1	0.142	85.7	0.377	0.1425	6.0173	P<0.001
- Lateral flexion	1	0.142	85.7	0.377	0.1425	6.0173	P<0.001
- Rotation	1	0	100	0	0	0	P<0.001
- Passive neck flexion	2	0.428	78.6	0.533	0.201	7.820	P<0.001

whereas stambha and gaurava are character of kaphadoṣa. In cervical spondylosis, upastambita vātavikṛtilakṣaṇas are seen more, however, kaphanubandhi associates some times. In the present study, kevala vātajanya lakṣaṇas found more. General line of the treatment of vātavyādhi was adopted in the present study. According to Caraka, one should go for nāvana, tarpaṇa, snehana and svedana as the basic line of treatment of any vātavyādhi.[1] It was in this context nasya with Dhānvantara taila (101), tarpaṇa by means of grīvavasti with Prabhanjanam kuzambu and Sahacarādi taila and svedana by patrapoṭṭali adopted. These upakramas helped in samprāptivighaṭana.

Grīvavasti and abhyaṅga with Prabhanjanam kuzhampu and Sahacarādi taila are indicated in vātavyādis; and grīvavasti as a procedure, does the sthānika bāhya snehana of the affected area. It nourishes the asthi in that particular area and pacifies the vāta, thereby taila doesn't aggravate kapha thus counteracting the pathology. Abhyaṅga softens the skin, gives soothing effect, makes the movements free, reduces the spasticity and rigidity in joint as well as muscle, improves blood circulation to the muscles and relieves the pain. By this the muscle wasting can be prevented.

Patrapoṭṭali type of svedana is of snigdha-rūkṣa type. The patra (leaves) used in this are having vātahara, kaphahara and pittahara properties. It clears the śrotodusṭi or saṅga. The area in contact gets more blood circulation, improves local metabolism, and relieves stiffness and variety of obstructions by widening of the pores which allows the easy movement of the liquefied solid or semisolid materials. Patrapoṭṭali is better because, it relieves para-vertebral muscle spasm; strengthens para-vertebral muscles; strengthen inter vertebral discs; helps repairing damaged myelin sheath and provides local anti-inflammatory effect.

Depending on vyādilakṣaṇas and sthāna of vyādhi i.e. ūrdhvajatru (kaphasthāna), the dusṭi of vāta along with kapha was considered here and treatment (nasya) was planned as indicated. So, the drugs as well as procedure counteract the underlying pathology. Patrapoṭṭalisveda

also helps in relieving āvaraṇa by kaphadoṣa.

Daśamūlakvātha is vāta-kapha-hara and indicated in all vātavyādhi. Its ingredients pacify vātadoṣa and helps in counteracting the process of degeneration. According to Śusrutasamhita, Daśamūlakvātha is the best kapha-pitta-anilāpaha; it does pācana of āma and sarvajvaravināśana as well as vātahara. Bhāvaprakāśa includes it in Guḍūcyādi varga, which is tridoṣaghna, śvāsakāsahara, śirorujahara, tandrahara, śothahara, jvaraghna, pārśvapīḍahara and arucihara.

Conclusion

Cervical Spondylosis is emerging as one of the most common disease especially in urban population. The prevalence of this disease is expected to increase due to improper lifestyle and working, sleeping and sitting postures. Combined effect of grīvavasti, patrapoṭṭalisveda and nasya can offer good benefits in cervical spondylosis. Along with this postural corrections during work, sleep, travel; avoidance of elevated pillows and coupled with regular exercises go on a long way in preventing cervical spondylosis.

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ŚUṆṬHĪYOGA IN THE TREATMENT OF SANDHIGATAVĀTA (OSTEO-ARTHRITIS) - A CLINICAL STUDY

B.K.Bharali,[1] N. C. Das,[2] D.Barua[1] and T. Bora[1]

Abstract: Sandhigatavāta, one among eighty types of vāta disorders, is a common problem seen in the elderly people with a higher ratio of incidence of asthivahaśrota (bone and joint). It can be correlated with osteo-arthritis. A clinical study was conducted on 20 cases of sandhigatavāta with Śuṇṭhīyoga (śuṇṭhi, guggulu and guḍūci). The 45 days' treatment markedly reduced the symptoms viz. pain, stiffness, swelling and tenderness.

Introduction

Sandhigatavāta is a common problem, especially in elderly people. Many theories have been advocated regarding its etiology and treatment. But, only temporary relief is possible in lieu of permanent recovery, thus posing a challenge for the medical profession. It is a chronic progressive/degenerative disorder and the tear process occurs in the articular cartilage of big weight bearing joints in advanced age.

Caraka first described the disease in the name of sandhigata anila and defined it as a disease with the symptoms of śotha (which, on palpation, reveals as air filled bag), śūla on prasāraṇa (flexion) and ākuñcana (extension).[1] In the eighty types of nānātmaja vātavyādhi, the word sandhigatavāta is not seen and a substitute khuḍavāta occupies its place. This has been accepted by Cakrapāṇi as gulphavāta or sandhigatavāta.[2] Śusruta has described sandhivāta as sandhigatavāta with the characteristic features of śūla (pain) and śopha (swelling) and that it leads to diminution of movements that impair the function of joints.[3]

Detailed description of samprāpti (aetio-pathogenesis) of sandhigatavāta is not available in āyurvedic texts. But, study of various texts concludes that sandhigatavāta has various causative factors like intake of unwholesome and contradictory food, lifestyle, aggravated doṣas (specific to vāyu - samāna-vāyu) in the koṣṭha, etc. The elevated vāyu rushes to the periphery for localisation in the joints and gets involved with vyānavāyu, which results in destruction of śleṣaka kapha and leads to manifestation of symptoms of disease.

The śleṣaka kapha devolves its contents more to asthi, as a result, cartilage undergoes degenerative change; putting lipping margins leading to formation of osteophytes, which can be considered as joint failure. The stage of khavaiguṇyata set in within śrota and joint cavity

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through a gradual process. As a result vāyu is filled in to the empty space created due to under nourishment. Vāyu, being rūkṣa, dry up the śḷeṣaka kapha and other kaphaja elements like snāyu and kaṇḍara making the joint dry and causes sandhigatavāta.

The conventional medical treatment focuses on a dangerous pharmaceutical barrage of painkillers, from Aspirin to Acetaminophen, Cortisone to NSAIDs, aimed at relieving the pain associated with arthritis. These medicines are neither corrective nor preventive. In this context, a study was made to explore the effect of specially prepared indigenous formulation Śuṇṭhīyoga [śuṇṭhī (*Zingiber officinale*), gugglu (*Commiphora wightii*) and guḍūci (*Tinospora cordifolia*) in the management of sandhigata-vāta (osteo-arthritis).

Material and methods

A total of 50 numbers of suspected cases registered from the OPD and IPD department of Kāyacikitsa, GAM, Puri. Of 50, 20 cases were found suitable for the trial.

Selection criteria: - The selection was based on the following features: 1) Age above 40 years (either sex), 2) Pain (no pain on rest) and swelling of big joint, 3) stiffness and tenderness of the joint and 4) crepitation and muscular wasting.

Exclusion criteria:- Patients below 40 years of age, having sign of rheumatoid arthritis, infective arthritis, gout, other joint diseases, pregnancy, lactation, diabetes, hypertension and renal pathology.

Study design

- Number of patients - 20
- Duration of study - 45 days.
- Formulation - Śuṇṭhīyoga
- Dose - 3 grams thrice daily, orally

Diet and regimen: - The patients were asked to follow routine diet i.e. wheat, bread, old sali rice and vegetables like snake gourd, brinjal, drumstick, garlic, etc. Meat juice, curd and butter were not allowed. Advised to abstain from heavy exercise, weight lifting, exposure to excessive cold and shower-bath.

Preparation of trial drug: - The trial drug was prepared and standardised in the Department of Rasaśāstra and Baiṣajyakalpana, GAM & Hospital, Puri. The components of the compound drug viz. śuṇṭhī (1 part) and purified guggulu (3 parts) were finely mixed in a khalvayantra. Then guḍūci svarasa (as required) was added and bhāvana was done to make a fine paste; and 3 gram tablets were prepared to form Śuṇṭhīyoga.

Clinical assessment: - The assessment was done every forthright and the improvement on the following subjective and objective symptoms was noted:

- Subjective symptoms: Pain, stiffness, tenderness and crepitation.
- Objective symptoms: Swelling, muscular wasting, walking time and radiological progress.

Laboratory assessment: TLC, DLC, ESR, Hb%, RA factor, Synovial fluid analysis and GCFT were analysed and noted.

Assessment: - The pattern of assessment made for estimation of percentage of relief and the assessment of result are shown in Tables 1&2.

Toxicity profile: - During the course of trial attention was given to note the development of any adverse effects, intolerance, toxicity, etc.

Observation and result

Of patients ranged between 45 to 75 years of

age, the highest incidence was noticed in the six decade (i.e. 50 to 60 years). In occupational study, moderate manual workers were more (60%) compared to others. 11 cases were overweight, vātic group had a predominance (50%) compared to kaphaja and vāta-kaphaja; involvement of knee joint was noticed in 50%; affliction of ankle joint 20% and other joint was significantly low.

There was substantial recovery in pain, stiffness, swelling, tenderness, crepitation, muscular wasting and walking time after 15, 30,

TABLE 1
Assessment scale

1. Pain	
- Severe	Grade III (G3)
- Moderate	Grade II (G2)
- Mild	Grade I (G1)
- No Pain	Grade 0 (G0)
2. Stiffness - Improved/not improved	
3. Swelling - Through measurement.	
4. Tenderness (RAI)	
- No tender	Grade 0 (G0)
- Tender	Grade 1 (G1)
- Tender and winced	Grade 2 (G2)
- Tender, winced and withdrawn	Grade 3 (G3)
5. Crepitation - Improved/not improved	
6. Muscular wasting - Present/absent	
7. Walking time (speed 25 meters)	
- Up to 30 seconds	Grade 0 (G0)
- 30+ to 40 seconds	Grade 1 (G1)
- 40^{+} to 50 seconds	Grade II (G2)
- 50^{+} to 60 seconds	Grade III (G3)
- Unable to walk	Grade 4 (G4)
8. Lab investigation - Unchanged/improved/satisfactory	
9. X-ray - Unchanged/Progress	

Mild - 25% to 50%
Moderate - 50% to 75%
Maximum - 75% and above

TABLE 2
Assessment of result

Improvement	Relief (%) / Grade
1. Joint pain	
- Maximum	G0
- Mild	G2
- Moderate	G1
- No improvement	0
2. Swelling	
- Maximum	Absent
- Mild	>25%
- Moderate	>50%
- No improvement	0
3. Tenderness of RAI	
- Maximum	G1
- Mild	G3
- Moderate	G2
- No improvement	0
4. Stiffness	
- Maximum	Relieved
- Mild	Slightly improved
- Moderate	Improved
- No improvement	0
5. Crepitation	
- Maximum	Improved
- Mild	Not improved
- Moderate	Improved
- No improvement	0
6. Disability score	
- Maximum	G0-G1
- Mild	G3
- Moderate	G2
- No improvement	0
7. Radiological	
- Maximum	Improved in BOC*
- Mild	No any changes
- Moderate	Moderate improvement in BOC
- No improvement	0

*BOC - Bony osteophytic changes

45 days of treatment respectively (Table 3). Marked progress (45%) was seen in radiological finding while 55% remained unchanged (Table 4). This indicates that involvement of deepest tissue and joint may require more days of treatment to obtain satisfactory result. The efficacy of Śuṇṭhīyoga found significant in reducing all the symptoms except body weight. The effectiveness of the trial drug on various sign and symptoms after 15, 30 and 45 days' treatment is shown in the Table 5.

TABLE 4
Radiological finding before and after the treatment

Degree of severity	BT		AT (45 days)
	No	%	
1. G1	2	10	Progress (moderate) 2 Nos
2. G2	10	50	Unchanged 10 Nos.
3. G3	8	40	6 - mild, 1- maximum, 1- unchange.

G1= Osteophyte (Spurring), Narrow joint space, Sub-Chondral sclerosis; G2 = Osteophyte formation; G3 = Early sign of Cartilage destruction.

TABLE 3
Improvement of sign and symptoms after 15, 30 and 45 days of treatment.

Symptoms	BT				AT (15 days)					AT (30 days)					AT (45 days)				
	G0	G1	G2	G3	G0	G1	G2	G3	%	G0	G1	G2	G3	%	G0	G1	G2	G3	%
1. Pain	0	1	9	10	0	9	11	0	36.7	1	17	2	0	55.1	8	12	0	0	59.3
2. Stiffness	0	0	18	2	0	2	17	1	7.1	2	14	4	0	42.8	10	10	0	0	52.4
3. Swelling	0	11	8	1	0	14	5	1	10	2	17	1	0	30	13	7	0	0	33.3
4. Tenderness	0	0	14	6	0	0	16	4	46.3	0	10	10	0	34.8	5	15	0	0	56.5
5. Crepitation	0	5	10	5	0	5	10	5	0	0	5	14	1	10	4	6	10	0	25
6. Muscular wasting	0	14	5	1	0	14	5	1	0	0	15	4	1	3.7	3	15	2	0	18.5
7. Walking time	0	2	15	3	-	-	-	-	-	0	14	6	0	14.9	8	12	0	0	30.8

*Degree of severity: - Maximum - G3= +++ or above; Moderate - G2= ++; Mild - G1= +; Nli - G0

TABLE 5
Statistical analysis showing the effectiveness of trial drug before and after the treatment

Sign and Symptoms	Mean + SD				Diff	p
	BT	AT (15 days)	AT (30 days)	AT (45 days)		
Pain	2.45 + 0.59	1.55 + 0.5	1.05 + 0.38	0.6 + 0.49	19	<0.001
Stiffness	2.1 + 0.3	1.95 + 0.4*	11 + 0.53	0.5 + 0.5	19	<0.001
Swelling	1.5 + 0.6	1.35 + 0.6*	0.95 + 0.4	0.4 + 0.5	19	<0.001
Tenderness	2.3 + 0.45	2.2 + 0.4*	1.5 + 0.5	0.75 + 0.43	19	<0.001
Crepitation	2.05 + 0.80	2 + 0.70*	1.8 + 0.50*	1.3 + 0.78	19	<0.001
Muscular wasting	1.4 + 0.73	1.35 + 0.57*	1.3 + 0.55*	1 + 0.44	19	<0.01
Body weight**	62.75 + 9.03	61.75 + 6.77*		61.75 + 6.77*	19	<0.05
Walking time	45.1 + 5.11		38.55 + 3.81	31.3 + 1.73	19	<0.001

*p = 0.5; **Probable Weight = 63.6 + 3.21
p 0.001 = Highly significant; p 0.05 = Not significant at 0.1% level ; p 0.01 Significant at 1% level
Tabulated value - t_{19}, 0.05 =2.09, t_{-19}, 0.01=2.86, t_{-19}, 0.001=3.88

Conclusion

Sandhigatavāta (osteo-arthritis) is a female predominant disorder, more in manual working group with an involvement of knee joint. Śuṇṭhiyoga is effective in the treatment of sandhigatavāta.

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EFFICACY OF ĀYURVEDIC HERBOMINERAL PREPARATION IN THE MANAGEMENT OF IRON DEFICIENCY ANAEMIA - A CLINICAL EVALUATION

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Abstract: Prevalence of Iron Deficiency Anaemia (IDA) in India is high because of various factors like low dietary intake, poor availability of iron, hook-worm infestation and malaria. A number of preparations are available in āyurveda for the treatment of IDA. A study was conducted to investigate the efficacy of two āyurvedic formulations Dhātrīlauha and Navāyasalauha for correction of IDA. The results showed statistically significant ($p < 0.05$) response of two āyurvedic preparations. Both formulations showed significant role in the management of iron deficiency anaemia.

Introduction

Iron deficiency anemia (IDA) is a widespread nutritional deficiency.[1] Insufficient level of iron in the blood makes fatigue, reduces physical activity, and affects behavior, psychomotor development and academic performance.[2] Iron status is a significant factor in the cognitive performance in women of reproductive age. In pregnancy, it may increase the risk of pre-term delivery, low birth weight, and higher incidences of maternal mortality.[3] WHO states that approximately 2 billion people affects IDA worldwide.[4] It is a very common phenomenon in developing countries including India, Bangladesh and Pakistan and is particularly prevalent in women, infants and young children. A national survey of India has reported that 79.2% in children below 3 years of age, 56.2% in women aged 15-49 years suffering from IDA.[5] Numerous iron containing allopathic formulations are available in the market for the treatment of IDA. They contain one or the other iron salt like ferrous sulphate, ferrous fumarate, etc. Oral administration of simple ferrous salts is inexpensive and satisfactory but long term treatment with iron salts is associated with several side effects like heartburn, nausea, upper gastric discomfort, constipation and diarrhoea.[6] Recently it has been shown that chronic oral administration of additional iron failed to correct the anaemia and resulted in accumulation of iron in duodenal entrecotes which may generate free radicals via Fenton reaction leading to per-oxidative damage of the of the tissue.

A large number of herbomineral preparations for IDA are available in the local market. Some of them are: Amalapittāntakalauha, Candanādi lauha, Dhātrīlauha, Navāyasalauha, Pippallyā-dyalauha, Pittāntakalauha, Pradarāntakalauha, Pradarāri lauha, Punarnavādi maṇḍūra, Rohītaka lauha, Saptamṛtalauha, Sarvajvaraharalauha, Sarveśvaralauha, Śakralauha, Śūlrajalauha,

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Triphalalauha, Vātapittāntakarasa, Vāta-raktāntakarasa, Bṛhat Yakṛtāri lauha and Yakṛtāri lauha. A scientific study of their efficacy as hematinic has not been carried out. Out of these formulations Dhātrīlauha and Navāyasa-lauha were selected for the study because of easy availability and low cost.

Aim: - To evaluate the efficacy of two āyurvedic herbomineral preparations viz. Dhatrīlauha and Navāyasalauha with a placebo controlled preparation.

Materials and methods

Study design: - The study design was randomized placebo controlled trial in patients with clinically established of Iron deficiency anemia.

Sample size and selection: - Total 30 patients (female-18 and male-12) of IDA were selected from the OP and IP of Kāyacikitsa Department, Arogya Shala Hospital, National Institute of Ayurveda, Jaipur.

Inclusion criteria: - Patient ranging from age group 18-70 years of either sex; Hemoglobin level <12 g/dl in men or <11 g/dl in women.

Exclusion criteria

- Patients with hemoglobin level less than 7 gm/dl
- Patients of Thalassaemia, Lead poisoning, Sideroblastic anaemia
- Anemia due to malignancies, Congenital absence of iron binding protein, Hereditory spherocytosis
- Sickle cell anemia, Aplastic anemia, Haemolytic anemia
- Any associated severe complication and having occult blood

Discontinuation criteria

- Blood hemoglobin level becomes less than 5 gm/dl during the course of treatment
- Any other acute illness
- Parents not willing to continue
- Any severe untoward effect

Selection of drugs

Both the drugs Dhātrīlauha[7] and Navāyasa-lauha[8] (Table 1) were purchased in tablet-form from the local market, Jaipur. The starch capsule was collected from Arogya Shala Hospital, National Institute of Ayurveda, Jaipur.

Grouping and administration

Patients were randomly divided into three groups: viz. Group 1 (Control group), Group 2 and Group 3 (Treatment groups). Each group contained 10 numbers of patients. Group-1 was administered one starch capsule daily along with normal water for 30 days continuously. Group 2 and Group 3 were administered Dhātrī-lauha (250 mg) and Navāyasalauha (250 mg) respectively in two divided dosages for 30 days. During the experimental period, proper diet and counseling was followed according to āyurvedic literature.

Assessment criteria

Patients' blood sample was collected before and after the therapy for hematologic parameters like hemoglobin (Hb%), packed cell volume (PCV), mean corpuscular volume (MCV), mean corpuscular hemoglobin (MCH) and mean corpuscular hemoglobin concentration (MCHC). The blood sample was analysed in the central laboratory of National Institute of Ayurveda, Jaipur.

Statistical analysis

Numerical data obtained from this study were expressed as the mean value ± standard error of mean. Differences before and after treatment in different groups were analyzed by using paired

TABLE 1
Composition and concentration of Dhātrilauha & Navāyasalauha (Each 250 mg tablet contains:)

Local name (Botanical name)	Part used	Amount (in mg)
1. Dhātrilauha		
- Citraka (*Plumbago zeylanica*)	Bark	13.88
- Āmla (*Phyllanthus emblica*)	Fruit	142.85
- Lohabhasma (Ferrum)	-	71.42
- Madhuyaṣṭi (*Glycyrrhiza glabra*)	Stem	35.71
2. Navāyasalauha		
- Āmla (*Phyllanthus emblica*)	Fruit	13.88
- Harītaki (*Terminalia chebula*)	Fruit	13.88
- Vibhītaka (*Terminalia bellirica*)	Fruit	13.88
- Ārdraka (*Zingiber officinale*)	Rhizome	13.88
- Pippali (*Piper longum*)	Fruit	13.88
- Marica (*Piper nigrum*)	Fruit	13.88
- Citraka (*Plumbago zeylanica*)	Bark	13.88
- Musta (*Cyperus rotundus*)	Rhizome	13.88
- Viḍaṅga (*Embelia ribes*)	Fruit	13.88
- Lohabhasma (Ferrum)		125

't' test. The significant level was followed at least $p<0.05$ confidence levels.

Results

Before the treatment, the mean hemoglobin (Hb) level was 9.64, 9.28, and 8.89 gm in Group 1, 2 and 3 respectively and after the treatment the level was significantly ($p<0.05$) increased. It is also showed that Group 2 was more improvement than Group 3. The levels of packed cell volume, mean corpuscular hemoglobin and other levels before and after the treatment are shown in the Table 2.

Discussion

Iron is important element in human metabolism.[9] It plays a central role in erythropoiesis and is also involved in many other intracellular processes in all the tissues of the body. The results showed that after the treatment the different haematological parameters decreased in Group 1. On the other hand, in Group 2 (Dhātrīlauha) and in Group 3 (Navāyasalauha) they were significantly ($p<0.05$) increased after 30 days of treatment. The mean corpuscular volume was only changed in Group-2 and the mean corpuscular hemoglobin concentration in Group 3.

Dhātrīlauha and Navāyasalauha contain active ingredients such as *Phyllanthus emblica, Zinziber officinale,* Lohabhasma, etc. Lohabhasma is a natural source of iron and is best for anaemia. It is śita (cold) in guṇa and vīrya and best hematinic in karma. Āmla is the richest source of Vitamin C which helps in the absorption of iron.[10] It increases the bioavailability of Lohabhasma and helps in the formation of hemoglobin. Ārdraka consists of protein, fat, carbohydrate, thiamin, riboflavin, nicotinic acid, calcium, iron and phosphorus. Carbohydrate or protein of ginger help in iron absorption. The other substantial part of these āyurvedic preparations is organic matter like ascorbic acid, sugars, amino acids, organic acids, which also helps the better absorption of non heme iron.[6] Hence āyurvedic drugs promote the increasing iron storage.

Conclusion

It is evident that Dhātrīlauha and Navāyasa-

lauha are effective, well tolerated and clinically safe for the treatment of iron deficiency anaemia.

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EFFECT OF GHṚTASAINDHAVADHĀRA IN THE MANAGEMENT OF PAIN IN SCORPION STING - AN EMERGENCY APPROACH

Sandeep V. Binorkar,* C.M. Sreekrishnan** and Asha K.V.**

Abstract: In scorpion sting, the most predominant symptom suffered by the patient is severe radiating pain at the site. Āyurveda has numerous medicinal preparations for the management of vṛścikadamśa (scorpion sting). One of such preparations is Ghṛta-saindhavadhāra. A randomized clinical study was conducted at the Pappinissery Visha Chikitsa Kendra, Kannur, Kerala. A total of 20 subjects were selected randomly and treated with Ghṛtasaindhavadhāra for one hour. The result was found highly significant in reducing the cardinal symptom, pain in scorpion sting (P<0.001).

Introduction

Scorpion sting is a particularly devastating and an endemic problem. In India, most lethal scorpions are confined to Thane, Raigad and Ratnagiri districts of Maharashtra, Rayalaseema in Andhra Pradesh, Bellary in Karnataka, Chennai and Madurai in Tamilnadu. Scorpion stings are endemic in tropical and subtropical regions.[1] Approximately 1,400 species of scorpion are found worldwide. The commonest species found in south India are *Mesobuthus tamlus* in houses, *Palamaneus swammerdami*, *Buthus landersoni* on coconut and palm trees, *Lychas* and *Isometrus* species.[2] In India, there are 700 species, of which, 50 can cause serious ill-effects.[1] Severe pain at the site of sting, erythema, swelling, vomiting, local urticaria and severe burning sensation are the common signs and symptoms. It can also result in failure of multi-organ system leading to death. It is stated that for every person killed by a poisonous snake, 10 are killed by poisonous scorpions.[1] Common sites of the sting are extremities and during hot season. Though most of the studies have focused on the clinical and epidemiological aspects of scorpion stings, the first and foremost is severe unbearable pain with burning sensation. In case of scorpion sting, it has been stated that more severe the pain, less venomous the scorpion and better the prognosis and vice-versa. [1]

Need of the study: - Extreme local as well as radiating pain with burning sensation is one of the most common symptoms, which may persists for more than 72 hours. It may also effects on mood, functional status, and may cause various problems.

Āyurveda has given numerous medicinal preparations both external as well as internal

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for the management of vṛścīikadaṁśa,[3-5] but so far very little statistical data is available regarding the efficacy of these medicines on pain. This study was an effort to find out the efficacy of one of such preparations viz. Ghṛta-saindhavadhāra (A.H., U. 37/30)[3] in the emergency management of pain. Two more symptoms which are commonly found in scorpion sting are local burning and itching sensations. Effect of this preparation on these two symptoms was also evaluated.

A randomized clinical trial was conducted from July to September in Pappinissery Visha Chikitsa Kendra, Kannur, Kerala. This paper highlights only the effect of dhara which was part of the external therapy given in both groups before starting internal medications.

Materials and methods

A total of 20 scorpion sting cases who met the inclusion criteria were selected. Ghṛtasaindhavadhāra was performed for one hour continuously by pouring the mixture on the site of sting from 8-10 cm above.

A lukewarm mixture of 100 gm ghṛta (ghee) and 5 gm saindhava (Potassium chloride) was used for dhāra. Ordinal grading scale was done to score the intensity of the cardinal symptoms i.e. pain, burning and or itching sensations.

Inclusion criteria

- Subjects irrespective of sex, caste and religion with age between 15 to 65 years.
- Scorpion sting with duration not more than 48 hours.
- Patients with cardinal symptom pain, due to scorpion sting.

Exclusion criteria

- Subjects with severe systemic manifestation due to scorpion sting.
- Patients who have already undergone any other treatment for pain.

Observation and result

Assessment of pain, burning sensation and itching sensation was done with ordinal numerical rating scale.

The mean score of pain before the therapy were 3, which reduced to 1.85 after one hour. The mean score of burning sensation and itching sensation was markedly reduced from 3.4 to 1.65 and from 2.93 to 2.13 respectively. The result found highly significant (P<0.001) (Table 1). The following were the goals of the therapy:

- Decreasing the frequency and/or severity of the pain.
- Inducing general sense of well being.
- Increasing level of activity, return to work.
- Eliminating or reducing medication.

Discussion

Treatment of scorpion envenoming in humans is a difficult problem as current patho-

TABLE 1
Effect of ghṛtasaindhavadhāra in pain, itching and burning sensations (n=20)

Symptoms	BT	AT	M. diff	% relief	SD	SEM	t	P
1. Pain	3	1.85	1.15	38.33	0.364	0.081	14.08	< 0.001
2. Burning sensation	3.4	1.65	1.75	51.47	0.44	0.098	17.74	< 0.001
3. Itching sensation	2.93	2.13	0.8	24.91	0.56	0.144	5.49	< 0.001

physiological and biochemical knowledge of scorpion envenoming is scarce. The conventional treatment prescribed for the management of pain in scorpion sting is administration of local anesthetics which may sometimes results in producing adverse reactions.

Śusrutasamhita describes the mode of absorption of topical applications like oils used in abhyaṅga (Śā. 9/9).[4] This concept can be considered for understanding the mechanism of Ghṛtasaindhavadhāra. Similar concept of percutaneous absorption is envisaged in the modern physiology also.[6] There are three possible routes of absorption. The pilo sebaceous follicles play some part in absorption of many compounds. The trans-follicular absorption, the route of penetration, is through the follicular pores to the follicles and then to the dermis via the sebaceous gland. The permeability of the cells of the sebaceous gland is greater than that of granular layer of the epidermis.

Constant temperature was maintained throughout the procedure of dhāra as it is beneficial for relieving the pain.[7] Ghṛta is considered as one of the best vāta-pittaghna dravya; it also acts as pittaghna by virtue of its properties like rasa, vīrya, vipāka and doṣaghnata.[8,9] Saindhava acts as tridoṣaghna by its vīrya and vipāka properties.[9] It is also used to reduce pain, inflammation and irritation from insect bites.[10] All these properties helped to relieve pain (which is mainly due to predominance of vāta) and burning sensation. The kaphaghna[9] property of saindhava and the lukewarm state of dhāra dravya helped to reduce itching sensation, which is due to the predominance of kapha.

Limitations/recommendations:- Pain is a subjective feeling, precision of intensity is difficult to generalize.[11] In certain cases myocardial involvement is also possible,[12] such cases may require further interventions accordingly. Medicinal plants with anti-venom properties[13] may also be prescribed internally for better results.

Conclusion

Ghṛtasaindhavadhāra showed good results in relieving the pain as an external measure in scorpion sting. The treatment is cost effective, easily procurable and less hazardous as compared to conventional local anesthetic drugs.

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HERBAL ANTIPYRETICS (JVARAHARA DRUGS)

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Abstract: Any infection (bacterial, viral, fungal, etc.) can produce the symptom known as fever. In āyurveda, this symptom is considered as a separate disease called jvara which is mainly due to hypo function of agni (metabolic energy) and most difficult to treat. Āyurvedic classics and various Nighaṇṭus have mentioned many single as well as herbal compounds in the management of jvara. This paper is a review of some herbs reported to have antipyretic activity.

Introduction

Onset of fever is associated with PGE_2 synthesis. It is because of pyrogenic cytokines, which are of 2 types-exogenous and endogenous. The synthesis and release of endogenous pyrogenic cytokines are induced by a wide spectrum of exogenous pyrogens, most of which have recognizable bacterial or fungal sources. Viruses also induce pyrogenic cytokines by infecting cells.[1] Āyurvedic classics like Caraka and Śusruta samhitas have elaborately discussed various types of jvara and their management - single, simple and polyherbal formulations. The therapeutic compendiums and lexicons have also delineated various herbal antipyretics.

Caraka identifies ten drugs (jvarahara daśemāni) in the management of various types of fever.[2] (Table 1) There are 61 jvarahara drugs (antipyretics) mentioned in Dhanvantarī-nighaṇṭu; 42 in Śoḍhalanighaṇṭu; 99 in Kaiyyadevanighaṇṭu; 57 in Madanapala-nighaṇṭu; 114 in Rājanighaṇṭu and 96 in Bhāvaprakāśanighaṇṭu.[3-8] Some common javarahara drugs mentioned in the nighaṇṭus are shown in Table 1.

Details of some herbs reported to have been antipyretic activity are given below:

- *Aegle marmelos*: - It has reported that the alkaloid skimmianine displayed analgesic, antipyretic, sedative and anticonvulsant activities in animal and that its neuroleptic activity was less than that of chlorpromazine.[9]
- *Azadirachta indica*: - In hyperpyretic rabbits, methanolic extracts (leaf, bark), as well as certain further fractions of these and 'nimbidin' have shown antipyretic activity. [10,11]
- *Caesalpinia bonduc*:- Total bitter principles and a particular fraction thereof show antipyretic activity.[12]
- *Calotropis procera*:- Different extracts, ethanolic extract of the aerial parts as well as that of the flowers show antipyretic activity in rats.[13-15]

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TABLE 1
Jvarahara drugs described in āyurvedic classics

Sanskrit name	Botanical name
1. Jvarahara daśemāni (Carakasamhita)	
- Śāriba	*Hemedismus indicus*
- Śarkara	*Saccharum officinarium*
- Pāṭha	*Cissampelos pareira*
- Mañjiṣṭha	*Rubia cordifolia*
- Drākṣa	*Vitis vinifera*
- Pīlu	*Salvadora persica*
- Parūṣaka	*Grewia asiatica*
- Abhaya	*Terminalia chebula*
- Āmalaka	*Phyllanthus emblica*
- Vibhītaka	*Terminalia bellirica*
2. Common jvarahara drugs in Nighaṇṭus	
- Kaṭuki	*Picrorhiza kurrooa*
- Katphala	*Myrica nagi*
- Kākajaṅgha	*Peristrophe bicaliculata*
- Kirātatikta	*Swertia chirata*
- Guḍūci	*Tinospora cordifolia*
- Drākṣa	*Vitis vinifera*
- Paṭola	*Trichosanthes cucumerina*
- Parpaṭa	*Fumaria parviflora*
- Pāṭha	*Cissampelos pareira*
- Priyaṅgu	*Callicarpa macrophylla*
- Bhārṅgi	*Rotheca serrata*
- Śāriba	*Hemedismus indicus*

- *Cassia fistula*: - The plant has significant antipyretic and analgesic activities.[12]
- *Celastrus paniculatus*: - Both alcoholic extract as well as a pure sesquiterpenoid polyol ester (ex seed oil) have antipyretic and analgesic activities.[17-18]
- *Cyperus rotundus*:- Triterpene cut isolated from the petroleum ether extract (vide supra) at 5 mg/kg showed analgesic as well as antipyretic activity.[19]
- *Phyllanthus emblica* :- The traditional use of the plant has testified it as an anti-inflammatory and antipyretic agent.[20]
- *Fumaria parviflora*:- Both hexane and chloroform extracts have antipyretic effect in yeast induced pyrexic rabbits.[21]
- *Glycyrrhiza glabra*:- Glycyrrhetic acid has antipyretic activity similar to that of sodium salicylate on rectal temperature of normal and pyretic rats. In a clinical trial for traumatic inflammation, it was noted that the plant possesses more potent antipyretic effect than oxyphenylbutazone.[22]
- *Hedychium spicatum*:- The 50% alcoholic extract exhibits antipyretic (hypothermia) and mild hypotensive actions.[23]
- *Lawsonia inermis*:- Ethanolic extract of the leaves has significant and dose dependant (0.25-2.0 g/kg) analgesic and antipyretic actions in rats.[24]
- *Nelumbo nucifera*:- Ethanol extract of stalks as well as methanol extract of rhizomes have antipyretic activity.[25]
- *Nigella sativa*: - A clinical record reports that in three mild cases of puerperal fever, the patients cured by intake of boiled powder of seeds (along with jeggery).[26]
- *Psoralea corylifolia*:- Bavachinin, a flavonoid constituent of the seeds, exhibits dose dependent antipyretic action in rats.[27,28]
- *Tinospora cordifolia*: - Aqueous extract of the plant stems exhibits anti-inflammatory, analgesic and antipyretic actions in rats.[29]
- *Valeriana jatamansi*:- The benzene extract of rootstock has antipyretic effect (hypothermia in mice).[30]
- *Zingiber officinale*:- Oral administration of aqueous extract of rhizome (70-140 mg/kg)

has reported antipyretic and analgesic effects in experimental animals.[31]

Poly-herbal formulations

Ayush 64:- Clinical trials of Ayush-64 conducted on 1442 *P. vivax* positive cases of malaria at various Research Institutes and Centers of the Council testifies the effect of herbal formulation. The response of the treatment was 89% and the findings were comparable with known anti-malarial drugs-chloroquine and primaquine.

Sudarśanacūrṇa: - It is a popular polyherbal formulation described in Śārṅgadharasamhita. The formulation that contains 53 ingredients has reported that it significantly decreased the body temperature of rats in brewer's yeast induced pyrexia.[32]

Discussion

The bark of cinchona tree is a cure for fever and later it was found to be antimalarial drug. Willow bark (*Salix alba*) has been used the management of pain and fever. Sodium salicylate was used for fever and pain in 1875 and its great success led to the introduction of Acetyl salicyelic acid (Aspirin) in 1899.

Among the above mentioned drugs certain herbs viz. *Cyperus rotundus* (musta), *Phyllanthus emblica* (āmalaki), *Fumaria parviflora* (parpaṭaka) and *Glycyrrhiza glabra* (yaṣṭīmadhu) have testified to have significant antipyretic activity. These drugs also act as analgesic, anti-inflammatory and antithrombotic drugs through PG synthesis inhibition.

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EXCERPTS FROM CIKITSĀMAÑJARI - LXX

P. Unnikrishnan*

Abstract: The chapter Śirorogacikitsa (treatment of diseases of the head) concludes with this issue. Here, the efficacy of formulations such as Dhurdhūrapatrādi and Nīlībṛṅgādi indicated in falling of hair, etc. are discussed.

Sesame oil medicated with the juices of chinna (*Tinospora cordifolia*), indralatika (*Cardiospermum halicacabum*) ciñca (*Tamarindus indica*), dhurdhūra (*Datura metal*), koṭiñjāli (*Piper betel*), tulasi (*Ocimum tenuiiflorum*), karuka (*Cynodon dactylon*), dhātri (*Phyllanthus emblica*), nīlī (*Indigofera tinctorea*), bakuḷa (*Mimusops elangi*), bhṛṅgaja (*Eclipta prostrata*) and the powders prepared from the following as solid component promotes growth of hair, relieves kṛmi, itching, śirakuṣṭhas and diseases of the head, uncontrollable hair loss, and foul smell of the body.

Trijāta	*Elettaria cardamomum* *Cinnamomum verum* *Cinnamomum tamala*
Yaṣṭi	*Glycyrrhiza glabra*
Ambuja	*Nelumbo nucifera*
Kuṣṭha	*Saussurea costus*
Jāti	*Myristica fragrans* (Nut meg)
Rasa	*Commiphora myrrha*
Ambuda	*Cyperus rotundus*
Takkolabīja	*Piper cubeba*
Marica	*Piper nigrum*
Karpūra	*Cinnamomum camphora*
Mṛganābhi	Musk
Triphala	*Terminalia chebula* *Phyllanthus emblica* *Terminalia bellirica*
Guñjikamūla	*Abrus precatorius*
Candana	*Santalum album*
Agaru	*Aquilaria malaccensis*
Kuṅkuma	*Crocus sativus*

In the preparation of Ārukālādi medicated oil, the juices of kāñjirattila (*Strychnos nux-vomica*), ānayaṭi (*Elephantopus scaber*), parpaṭam (*Oldenlandia corymbosa*), koṭiñjāli, karuka, amariyila (*Indigofera tinctorea*) are also added as liquid component and the above mentioned drugs as solid components.

Alternatively, koṭṭam (*Saussurea costus*), iraṭṭimadhuram (*Glycyrrhiza glabra*) and candanam can be replaced as solid component in the above medicated oil. Itching of scalp, dāraṇaka, ārumkṣika, worm infested lesions, and diseases of the head are relieved by application of this oil.

Oil medicated with the kaṣāya of triphala, varṇavatīyuga (*Curcuma longa* and *Berberis aristata*) and pañcataru (five fig trees - *Ficus*

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racemosa, Ficus microcarpa, Ficus religiosa, Ficus benghalensis and *Ficus arnottiana*) and juice of veḷḷila (*Mussaenda frondosa*), karuka, bala (*Sida alnifolia*), bhṛṅgi (*Eclipta prostrata*), cerupūḷa (*Aerva lanata*), kūla (*Trichosanthes lobata*), bakuḷadaḷa (*Mimusops elangi*), parpaṭaka, karunocci (*Vitex negundo*)), amari, tulasi, karintumba (*Anisomeles malabarica*), koṭiñjāli, paruva (*Streblus asper*), parutti (*Gossypium herbaceum*), uzhiñja (*Cardiospermum halicacabum*) and milk as liquid component and the following as solid components, on application, abscesses and weeping eczemas of the scalp are relieved. [Alternatively, drugs of Elādi group can replace the solid component]

Triphala	*Terminalia chebula*
	Phyllanthus emblica
	Terminalia bellirica
Guñjikamūla	*Abrus precatorius*
Candana	*Santalum album*
Agaru	*Aquilaria malaccensis*
Kuṅkuma	*Crocus sativus*

Dhurdhūrapatrādi taila:- Oil medicated with the juice from the leaves of dhurdhūra (*Datura metal*) as liquid component and its seeds as solid component relieves itching and hair fall. Oil medicated with the juice from the leaves of dhurdhūra and buffalo's milk as liquid component, and powder of yaṣṭi as solid component, promotes growth of hair.

Nīlībhṛṅgādi oil: - Oil medicated with the juice of nīlī (*Indigofera tinctorea*), bhṛṅgarāja (*Eclipta prostrata*), śatakratulata (*Cardiospermum halicacabum*), dhātriphala (*Phyllanthus emblica*), goat's milk, coconut milk, buffalo's milk and cow's milk as liquid components and yaṣṭyāhva (*Glycyrrhiza glabra*), guñja (*Abrus precatorius*) and añjana (black antimony) as solid component makes hair growth even on the palms, then what to say on hair growth in scalp!

Alternatively, the juices from teṅṅinpūkkula (inflorescence of *Cocos nucifera*), kamukinpūkkula (inflorescence of *Areca catechu*) and panaṅkula (inflorescence of *Borassus flabelliformis*) as liquid component, and koṭṭam, iraṭṭimadhuram, candanam, rāmaccham (*Vetiveria zizanioides*), nannāṛikkizhaṅgu (*Hemidesmus indicus*), iruveli (*Plectranthus vettiveroides*) and kunnivēr (*Abrus precatorius*) as solid component can also be added in the above oil. Powdered añjanakkallu (black antimony) added to the vessel used for collecting filtered oil as pātrapāka relieves falling and breaking of hair.

Taila of ākṣa (*Terminalia bellirica*) medicated with the ripe tuber of kadaḷi (*Musa paradisiaca*), sahacarakusumam (flower of *Barleria prionitis*), ketakīmūlam (root of *Pandanus odoratissimus*), purāṇakiṭṭam (Ferric oxide), bhṛṇgīrasam (juice of *Eclipta prostrata*), triphala and powdered iron, on regular application, turns thin and lusterless hairs to thick and black. If Ākṣataila is not available, a taila prepared by grinding eḷḷu (*Sesamum orientale*) and ākṣabīja (seed of *Terminalia bellirica*) can be used.

Oil medicated with the juice of vaṇṭunīr (*Eclipta prostrata*) and milk as liquid component, and a paste prepared from the following as solid component, on application on the head, promotes growth of hair; and used as nasya it gives strength to shoulders. It is effective in falling of hair, loosening of teeth and hair loss secondary to kozhipparaṅki (kozhippen).

Jīvanti	*Holostemma ada-koedien*

Bṛṅgi	*Eclipta prostrata*
Takaram	*Valeriana jatamansi*
Śatakuppa	*Anethum graveolens*
Rāsna	*Alpinia galanga*
Yaṣṭi	*Glycyrrhiza glabra*
Vizhālari	*Embelia ribes*
Paṭu	Rock salt
Ūrubūka	*Ricinus communis*
Tutha	Blue vitriol

Oil medicated with the paste of the following prepared in goat's milk is effective in hair growth.

Nīlotpala	*Nymphaea nouchali*
Uśīra	*Vetiveria zizanioides*
Tagaram	*Valeriana jatamansi*
Nāgakesaram	*Mesua ferrea*
Śāriba	*Hemidesmus indicus*
Kuṣṭha	*Saussurea costus*

A paste prepared from the following in goat's milk, is said to be so effective that it makes growth of hairs even on nails.

Madhūka	*Madhuca longifolia*
Añjana	Black antimony
Tilakusuma	*Sesamum orientale*
Lohita	*Pterocarpus santalinus*
Gopī	*Hemidesmus indicus*
Haṭha	*Careya arborea*
Ambu	*Plectranthus vettiveroides*
Dhātri	*Phyllanthus emblica*

A kaṣāya prepared from nellikka, veṅga (*Pterocarpus marsupium*), amṛta (*Tinospora cordifolia*) aḷi (*Eclipta prostrata*), phalatraya (*Terminalia chebula*, *Phyllanthus emblica*, *Terminalia bellirica*) is used to mix powders of the following to make a paste in an iron spatula. Oil medicated with this paste is good for the eyes and hairs.

Hima	*Santalum album*
Abda	*Cyperus rotundus*
Madhūka	*Madhuca longifolia*
Añjana	Black antimony
Kunni	*Abrus precatorius*
Sevya	*Vetiveria zizanioides*

Oil medicated with the juice of ketaka (*Pandanus odoratissimus*), dhātri, bhṛṅgi, amṛta and milk as liquid components, and a paste of nāḷikeravalka (coconut shell) and dhātri as solid component is good for hair growth. (*Incomplete*)

Iraṭṭimadhuram made to a paste in the milk of buffalo applied on the head is good for hair growth. Oil medicated with the juice of ciṭṭamṛtu, amari, kaññuṇṇi, tānnittoli (bark of *Terminalia bellirica*) and milk as liquid component and paste of the following as solid component, on application, cures falling of hairs.

Koṭṭam	*Saussurea costus*
Iraṭṭimadhuram	*Glycyrrhiza glabra*
Triphala	*Terminalia chebula*
	Phyllanthus emblica
	Terminalia bellirica
Nannāṛi	*Hemidesmus indicus*
Candanam	*Santalum album*
Rāmaccam	*Vetiveria zizanioides*
Iruveli	*Plectranthus vettiveroides*

Oil medicated with kaṣāya prepared from ciṭṭamṛtu, kuṛuntoṭṭivēr (*Sida alnifolia*), nellittoli (*Phyllanthus emblica*), kāññirattinvēr (*Strychnos nux-vomica*), āvaṇakkinvēr (*Ricinus communis*) and milk as liquid component, and kalka of Triphaladi taila (detailed elsewhere) as solid component, relieves burning of the head, headache and churning pain.

In indralupta (alopacia), vēppintol (bark of *Azadirachta indica*) ground in a rough surface to make a fine paste with the milky latex of erukku (*Calotropis gigantia*) is prescribed. This paste is to be applied on the scalp added with a small

quantity of butter. Application of cāndu (a soot preparation used by females for adorning the forehead) mixed with the ashes of karimpaṭa (woolen cloth or blanket) on the scalp is effective. A paste prepared from powdered ginger tied in a cloth, warmed and applied on the scalp initially kills worms. Application of oil medicated with the juices of ummattila (*Datura metal*), karintumba (*Anisomeles malabarica*). amariyila (*Indigofera tinctorea*), kaññanniyila (*Eclipta prostrata*), kunniyila (*Abrus precatorius*) as liquid component, and fine paste prepared from the following, on the head is good for dark hairs. Application of leeches to relieve contaminated blood is also good.

Koṭṭam	*Saussurea costus*
Iraṭṭimadhuram	*Glycyrrhiza glabra*
Kariñcīrakam	*Nigella sativa*
Triphala	*Terminalia chebula*
	Phyllanthus emblica
	Terminalia bellirica
Urukkupoṭi	Ferrum

Nellikka ground to a paste in the juice of cōnakanāraṅṅa (*Citrus lemon*) is prescribed to apply on the head.

The juice of puḷiyila (*Tamarindus indica*) kept in a copper vessel in the previous day night and in the next day, made warm in the sun, on application on the scalp, relieves dāraṇaka (dandruff).

A paste prepared from the following in the juice of tender coconut husk, fresh tuber of black kadaḷi (*Musa paradisiaca*) and tender coconut water, and added with buffalo's milk, on application on the scalp, relieves itching and other diseases of the scalp.

Sindhūtha	Rock salt
Kuṣtha	*Saussurea costus*
Rajanīdvaya	*Curcuma longa*
	Berberis aristata
Kṛṣṇa	*Piper longum*
Rambhākanda	*Musa paradisiaca*

Diseases of jatru (region above neck) are 231 in number (ekatrimśadadhika śatadvayam) i.e. netra 94, karṇa 25, nāsa 18, mukha 75 and śirogata 19.

Sages consider human body as a tree with root on the head and branches below it. Diseases that spread to upper part of the body are to be treated diligently. All sense organs are situated in the head, and life is dependent on the head, hence the safety of head (uttamāṅga or prime organ) is of utmost importance.

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