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EDITORIAL

AyuCaRe - A New Journal for Ayurveda Case Reports

The Indian systems of medicine have age old acceptance in the communities in India and in most places they form the first line of treatment in case of common ailments. Of these, Ayurveda is the most ancient medical system with a time tested impressive record of safety and efficacy. These systems were well known to Indian population and their acceptability in population is already there as they form the part of house hold remedy, life style and dietetic management of the society.

Majority of the world's population in developing countries still relies on herbal medicines to meet their health needs. They are often used to provide first-line and basic health service to people living in remote and poor areas. Even in areas where modern medicine is available, the interest on traditional practices has been increasing rapidly in recent years because of many reasons. Contribution of traditional practices, in particular of Ayurveda in global health care cannot be ignored by any science for its qualitative strength and clues provided in the field of therapeutics. India enjoys the largest traditional health care, which is fully functional with a network of qualified registered practitioners, research institutions and licensed pharmacies.

Ayurveda can play a major preventive, curative, and promotive role in community health. The effectiveness of Ayurveda in different disease conditions need to be shown to the community, for which, we need to proceed in a systematic manner.

Study design is an important issue. Ill-designed studies are unlikely to add any value either to science or to Ayurveda. A comprehensive custom to explore evidences on effectiveness in Ayurveda is the need of

hour to generate databases regarding the usefulness of Ayurveda approaches in global healthcare.

Well-established, randomized controlled clinical trials are undisputed gold standards and can provide highest level of evidence for efficacy facilitating acceptance of medical practices. These conventional concepts of clinical research design may be difficult to apply when using practices of traditional medicine. Methods such as randomization and use of a placebo etc. may not always be possible in Ayurveda clinical trials as they may involve many technical problems. In addition; prevention, diagnosis, treatment etc. in Ayurveda are based on specific needs of an individual patient. Hence, approaches like Whole Body Systems, MOST, STROBE, Case Reports etc. possibly may benefit Ayurveda studies. Initiatives are to be made to enrich AYUSH professionals with these methodologies.

Case reports significantly can contribute and disseminate Ayurveda potentialities to the global community. They have an advantage of being adaptable to the clinical needs of the patient and the therapeutic approach of the practitioner. It is observed that, many Ayurveda physicians have success stories for clinical conditions, where no satisfactory answers are available in contemporary field. Dissemination of such success practices is a way of sharing knowledge that will help in shaping the health care system. Case Reports help practitioners to share their experiences with peers, researchers, students and other interested. Ayurveda currently need more and more evidence based success stories.

A suitable platform is needed to communicate all such experiences. Considering this acute need; All India Institute of Ayurveda, New Delhi is creating an unique platform Journal of Ayurveda Case Reports

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(AyuCaRe) for all stakeholders of AYUSH to share their experiences. AYUCaRe invites Case Reports and provides opportunities for students, researchers and faculty of AYUSH and allied medical sciences to share their experiences. This initiative is expected to play a pivotal role in researches, further generating evidence base for the claims and principles of Ayurveda practices in a systematic way.

I take this opportunity to invite all the stakeholders of Ayurveda to use this platform and share Case Reports in the benefit of traditional practices. At AIIA, we are

committed to put Ancient wisdom of Ayurveda in Evidence Based Practice.

Prof Abhimanyu Kumar

Editor-in-Chief

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Research in Traditional Systems of Medicine

I am very glad to see the first issue of the case study focused Ayurveda journal by All India Institute of Ayurveda in India.

India has a rich heritage in traditional systems of medicine which include Ayurveda, Unani, Siddha, Yoga, Naturopathy, Homeopathy and others.

Traditional herbal medicines an important part of most traditional systems of medicine including Ayurveda. Many people in developing countries still rely on herbal medicines to meet their health needs, particularly in rural and remote areas. Even in areas where modern medicine is available, the interest in herbal medicines has been increasing rapidly in recent years because of their potential contributions to health and well-being, because lifestyle-related diseases are becoming more common across the world.

Traditional herbal medicines are believed to have much to offer in the health promotion, disease prevention and management, particularly for lifestyle-related diseases, through their holistic approach.

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The WHO Traditional Medicine strategy 2014-2023, promotes safe and effective use of traditional medicines and has one important strategic objective, that is to build and strengthen the knowledge base on traditional medicines through research. This need for an improved knowledge base was reinforced at the regional consultation on traditional medicine for the WHO South-East Asia region in 2015.

This journal is, therefore, important to build and strengthen evidence-based knowledge in Ayurveda through case studies and their documentation in this region.

I strongly believe that this journal can provide a platform to discuss, share and exchange experiences and knowledge among eminent experts and researchers. This will contribute to promoting evidence-based practices in traditional systems of medicine.

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GUEST EDITORIAL

All India Institute of Ayurveda Launching Quarterly Journal of Ayurveda Case Reports

I am delighted to learn that All India Institute of Ayurveda, New Delhi is launching a quarterly journal of Ayurveda Case Reports (AyuCaRe). I wish this new journal a grand success. The success of any such periodical publication depends on the quality of its contents and its uninterrupted production with realistic peer reviewing and growth of its readership among the educators, researchers and practitioners of Ayurveda. In spite of some progress in the area of research by way of MD, Ph.D theses and few institutional research project mode researches; the rate of quality publication from AYUSH sector has remained disappointing. Some recently launched journals such as J-AIM, AYU, ASL and AAM have shown steady growth but have not succeeded to earn any impact factor. Traditional Chinese medicine and Yoga have shown better performance than Ayurveda, which is really a matter of concern. The reason for this slow turnover of publications is due to lack of quality research in this sector besides lack of core competency and lack of skill for research writing. The third important factor is the dearth of good journals in this field willing to consider Ayurvedic research submissions.

I am really happy to notice the initiatives of AIIA to launch a new journal. Rapid publication needs rapid growth of quality research yielding publishable data. It is hoped that Central Council for Researches in Ayurvedic Sciences will pool its resources and expertise to promote Ayurvedic research both in fundamental and applied aspects specially clinical researches through appropriate scientific research methodology. I have been closely

involved in teaching, research and practice of Ayurveda for over 50 years. My experiences suggest that one of the main barriers in AYUSH research is non-availability of appropriate research methodology which may test Ayurveda as it is in true sense. Most of the present day researchers conduct small scratchy researches ignoring the Ayurvedic approach and principles using hurriedly borrowed conventional methodology resulting in baseless data throwing no light on Ayurveda. As a matter of fact, Ayurveda research is facing a serious methodology crisis.

It cannot be overemphasized that Ayurveda has greater strength in its unique principles, concepts and approaches, not so much in its medications. But the entire R&D effort is devoted in drug development through conventional methods with little outcome. The methodology of clinical drug research too is standing on the crossroads seeking right directions in the changing scenario. The double blind placebo controlled clinical trials which were considered the gold standards of drug testing during mid-20th century are no more considered gold standards as they are full of fallacies and flaws specially when applied to Ayurvedic research.

The reverse pharmacology approach with pragmatic clinical trials and careful and critical clinical case studies are now considered as more authentic methods of clinical evaluation of the safety and efficacy of a drug or a procedure. In view of this trend, it is in fitness of things that, AIIA is launching a quarterly journal of Ayurveda Case Reports (AyuCaRe). But this enterprise will be purposeful only if clinicians keep good records and carry case reporting in a duly critical and intensive manner and not in a casual way. Each case report should be peer-reviewed by three reviewers without

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any conflict of interest. Clinical case reports need more rigorous scrutiny than the reports of controlled clinical trials.

Many Indian journals who claim that they are peer reviewed, treat the peer reviewing process as a formality and as an academic ritual serving no purpose. There is also an acute shortage of willing and competent reviewers. The important issues like conflict of interest and authenticity of investigational data are often ignored. Most journals are starving of publishable submissions and there is not much choice of selection of papers for running the life-line of a journal. Most of the journals appear quarterly and there is hardly a good monthly journal in AYUSH sector. Hence there is a simultaneous need of fast track promotion and enhancement of good research in Ayurveda on one hand and similar activism on quality publication. Research and publication have to go hand in hand. The educational institutions need to be vitalized to produce talented and skilled postgraduates who may have work-culture and scientific temper with willingness and passion to opt research and teaching as a career.

The role of good practitioners in the professional field, public or private, is equally important. Our practitioners could conduct good clinical research in practice settings and could submit good clinical research reports for publication in AIIA Journal. All India Institute of Ayurveda should organize periodical workshops and training program for postgraduate students and faculty members to learn the skill of writing Ayurveda research papers and proposals. This is absolutely essential because the main reason why Ayurvedic academia is trailing behind is the poor performance on research and publication frontiers. AIIA being the apex institution of higher studies in Ayurveda, its mandatory responsibility is to play activism. There is need of Action Now, no more tomorrows.

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Management of Avascular Necrosis through Panchakarma

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ABSTRACT

Keywords:

Asthikshaya,
Avascular necrosis,
Case report,
Tikta ksheera vasti,
Virechana

Avascular necrosis of hip joint has emerged as one of the most disabling conditions of present era of Orthopedics. It poses a challenge in front of the medical fraternity due to non-availability of accurate management for this condition. Surgery offers hip joint replacement that is not so commonly available and expensive too. Ayurveda can provide a suitable answer through appropriate *Panchakarma* modalities useful in *Asthi dhatu kshaya*. A diagnosed case of Avascular necrosis with complaints of pain at bilateral hip joint and restricted movements approached the out-patient division of the hospital and was managed by *Udwartana*, *Virechana* and *Tikta ksheera vasti* by following classical principles of Ayurveda. Significant improvement was noticed after the treatment. Pain was reduced significantly and the patient was able to walk and climb stairs at the end of the treatment. Results obtained were encouraging and restricted disease progression was observed.

Introduction: Avascular necrosis (AVN), also known as osteonecrosis, bone infarction, aseptic necrosis and ischemic bone necrosis is cellular death of bone components due to interruption of blood supply, because of which the bone tissue dies and the bone collapses.^[1-3] If AVN affects the bones of a joint, it often leads to destruction of the articular surfaces. It primarily affects epiphysis of long bones such as the femur and also involves shoulder, knee and hip joints etc. Other common sites include the humerus, shoulders, knees, ankles and the jaw.^[4] Many people have no symptoms in the early stages of avascular necrosis. As the condition worsens, the affected joint may hurt under stress.

Pain can be mild or severe, localized and develops gradually. Pain may be limited to groin, thigh or buttock if AVN affects hip. Pain location tends to be most specific in anterior hip and lower pelvis. Can be acute in onset (acute infarct phenomenon), which can mimic an acute injury. Range of motion will be reduced affecting the gait. No satisfactory therapy is available in conventional system of medicine, while the available procedures are not affordable by all. Prognosis of all such approaches are not convincing.^[5]

This condition can be correlated to *Asthi majja gata vata* and / or *Asthi dhatu kshaya* manifesting symptoms like *Bhedo asthi parvanam* (breaking type of pain in bones and joints), *Sandhi shula* (joint pain), *Mamsakshaya* (muscular wasting), *Balakshaya* (weakness), *Aswapna santataruk* (disturbed sleep due to continuous pain) and *Sandhi shaithilyam* (afflicted joints) with *Shiryanti iva cha asthini durbalani* (destruction of bony tissue causing generalized

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weakness), *Pratata vata rogini* (other aggravated features of vata) etc.^[6] Wide range of treatment modalities have been mentioned in Ayurveda that are effective in such manifestations.

Case report: A 35 years male patient visited Department of Panchakarma, Institute for Post Graduate Teaching and Research in Ayurveda, Gujarat Ayurved University, Jamnagar with chief complaints of pain at bilateral hip joints with restricted movements, difficulty in walking, unable to stand-up from sitting position and difficulty in forward bending since four months.

Patient noticed a jerk on sudden lifting of weight of about 40-45 kg followed by pain at both hip joints and left gluteal region four months back. Pain aggravated on next day, restricting movements of hip joint without radiating to any parts. A brief warm-up of five minutes was providing mild relief, but the improvement was time limited. No history of tingling sensation or numbness of lower limbs was reported.

Initially patient was managed with homeopathic medicines with which mild relief in pain was noticed. But, restricted movements were persisting with increased morning stiffness. Patient had a history of facial palsy about one and a half years back for which he was prescribed with corticosteroids and got significant relief.

The *Shareera prakriti* of the patient was *Kaphavataja*, had *Krura koshta* (on the basis of bowel habits), *Madhyama bala* (optimum physical strength) with good *Satva* (psychological strength). He had mild *Agnimandya* (decreased digestion and appetite) and habit of occasional drinking alcohol.

Dosha dushya lakshana: Predominant *Dosha* in the disease is *Vata* in association with *Pitta* and *Kapha*. Since, there was a history of sudden jerk that may be responsible for local inflammation, vitiating *Pitta*. Besides, *Avarana* of *Kapha* and *Meda* over *Vata* may also be considered to play an important role in the manifestation of symptoms like stiffness and restricted movements of hip joint in the patient.

Assessment Criteria: Pain, stiffness and difficulty in walking (Table 1), Visual Analogue Scale (VAS) and improvement in the movements of flexion, extension and abduction were assessed at various stages of treatment.

Table 1: Grading of pain and other symptoms

| | |
|---|---|
| Pain | |
| No Pain | 0 |
| Mild pain with no difficulty in walking | 1 |
| Moderate pain with slight difficulty in walking | 2 |
| Severe pain with severe difficulty in walking | 3 |
| Visual Analogue Scale | |
| No Pain (0) | 0 |
| Mild (1-3) | 1 |
| Moderate (4-6) | 2 |
| Severe (7-10) | 3 |
| Stiffness | |
| No Stiffness | 0 |
| Stiffness of mild grade, need no intervention | 1 |
| Stiffness relieved by topical medicaments | 2 |
| Stiffness relieved by oral medication | 3 |
| Stiffness not responded by medicine | 4 |
| Difficulty in walking | |
| No pain, normal movements | 0 |
| Mild pain with mild restriction of movements | |
| Moderate pain with restriction of movement | 2 |
| Severe pain with restricting movements | 3 |
| Complete restriction of movements | 4 |

Investigations: MRI of Hip joint was conducted before and after the treatment. MRI Findings were suggestive of AVN of bilateral femur with minimal joint effusion (AVN Stage II). The lesions involved from 9 to 4^o clock on sagittal images. No evident sub-chondral collapse or secondary degenerative osteoarthritis was found.

Management of the condition: The patient was admitted in the Panchakarma IPD and treatment was planned considering involved *Dosha* and *Dushya*. *Tikta ksheera vasti* was planned for eight days that was preceded by *Rukshana* therapy comprising of *Udwartana* (dry powdered massage), followed by *Virechana karma*

(Table 2). *Udwartana* was done for five days with mixture of 200 g of *Yava churna* and 50 g of *Triphala churna* that was made warm and rubbed firmly over the bilateral hip region for 25 to 30 minutes for five days. Internally, patient was advised to take *Siddha jala* [water processed one part of drug and 16 parts potable water] of *Dhanyaka* (*Coriandrum sativum*), *Shunthi* (*Zingiber officinale*) and *Shatapushpa* (*Anethum sowa*) for *Deepana* and *Pachana* for five days.

Table 2: Plan of treatment

| Procedure | Duration | Drugs used |
|-------------------------|----------|---|
| <i>Ruksha udwartana</i> | 5 days | <i>Triphala and Yava churna</i> |
| <i>Snehapana</i> | 5 days | <i>Goghrita</i> |
| <i>Virechana</i> | | <i>Nimbaamritadi Eranda taila and Triphala kwatha</i> |
| <i>Vasti</i> | 8 days | <i>Tikta ksheera vasti</i> |

After assessment of *Agni*; *Snehapana* with *Go-ghrita* was planned that was given to the patient before 6.30 AM and continued till the appearance of *Samyak snigdha lakshana*. It took five days to observe these features. Dose of *Go-ghrita* was increased daily observing the digestive

capacity of the patient. *Go-ghrita* was administered at a dose of 30 ml, 70 ml, 110 ml, 140 ml and 170 ml on 1st, 2nd, 3rd, 4th and 5th day respectively. This was followed by *Abhyanga* and *Swedana* (sudation in a steam chamber) for three days. Patient was advised to take diet like *Mudgayusha* and fruit juice like orange or pomegranate twice a day for three days. At the end of this, drugs for *Virechana* were administered and *Madhyama shuddhi* was obtained.

After completion of *Sansarjana krama* (specific diet regimen after *Shodhana*) for *Madhyama shuddhi* (for five days), patient was advised a gap of three days that was followed by *Tikta ksheera vasti* made-up of 50 ml of *Madhu* (honey), 5 g of *Saindhava lavana* (rock salt), 100 ml of *Go-ghrita* (ghee), 25 g of *Kalka* (paste) prepared out of powders of *Guduchi* (*Tinospora cordifolia* Miers.) and *Yasthimadhu* (*Glycyrrhiza glabra* Linn.), and around 450 ml *Kwatha* (decoction) of *Guduchi* and *Erandamoola* (roots of *Ricinus communis* Linn.). The plan of *Vasti* is presented at Table 3.

Observations and Results: Mild improvement was reported in pain, stiffness and range of movements after *Udwartana* with a feeling of lightness in the affected area. During *Snehapana* for *Virechana*, it took around 6-8 hours to feel hunger by the patient on 1st

Table 3: Plan of Vasti

| Day | Dose (ml) | Time of administration | Time of Vasti pratyagamana | Observations | Complications if any |
|-----|-----------|------------------------|----------------------------|--|----------------------|
| 1 | 500 | 11 AM | 15 min | Feeling of lightness in body, Two bowel evacuations | None |
| 2 | 500 | 11.15 AM | 20 min | A bowel evacuation, Lightness present in body, Mild relief in pain and stiffness | |
| 3 | 600 | 11 AM | 10 min | A bowel evacuation, No other specific observations | |
| 4 | 600 | 11.30 AM | 15 min | A bowel evacuation, Improvement in range of hip joint movements | |
| 5 | 600 | 10.30 AM | 20 min | | |
| 6 | 600 | 10.45 AM | 15 min | | |
| 7 | 600 | 11 AM | 20 min | A bowel evacuation with feeling of lightness in body, Significant relief in pain and stiffness | |
| 8 | 500 | 11 AM | 30 min | A bowel evacuation with significant relief in pain, stiffness and improvement in hip joint movements | |

and 2nd day of *Snehapana*, while it was increased to 10 hours on 3rd and 4th day and 13 hours on the 5th day. Unctuousness in stools, downward movement of flatus and greasiness of skin were observed from 4th day onwards. An average retention time of *Vasti* was around 18 minutes. No untoward effects were noticed during *Vasti* regimen (Table 9). Mild relief was reported in pain, stiffness and range of movements after *Udwartana* with a feeling of lightness in the affected area. After *Virechana*, marked improvement was observed in pain, stiffness, improvement in range of movements at hip joint region. After completion of *Vasti*, there was further improvement in the movements due to decreased pain and stiffness.

Pain, stiffness and difficulty in walking responded with *Virechana* and *Tikta ksheera vasti* (Table 4). Patient was able to walk and climb stairs without any external support. Body weight was reduced from 90 kg to 83 kg after classical procedures of *Udwartana*, *Virechana* and *Vasti*. Observations of Visual Analogue Scale (VAS) came down from 4 to 1 by the end of treatment. Improvement was also found in the range of movements of hip joint (Table 5).

Discussion: *Prakriti* of the patient was *Kaphavataja* and weight was 90 kg. Main symptoms present were pain, stiffness and decreased range of movements that is an indication of *Vata* as the main *Dosha* leading to *Asthi kshaya*. Considering *Vata* as main *dosha*, *Vasti* was planned in the management. Since *Asthi* was the main involved *Dhatu*; *Tikta dravya siddha vasti* was selected.^[7] *Erandamoola* (roots of *Ricinus communis*) was used considering its *Vata shamaka* properties.^[8] Milk was added in *Vasti* that nourishes *Dhatu*s and specifically *Asthi dhatu*. Powders of *Guduchi* (*Tinospora cordifolia* Willd.) and *Yashtimadhu* (*Glycyrrhiza glabra* Linn.) used in the formulation may help in rebuilding the bone tissue.^[9]

AVN of hip joint develops basically due to obstruction of small blood vessels supplying to femoral head leading to gradual development of necrosis due to reduced vascular supply. Thus, *Rakta vaha sroto rodha* becomes prime cause leading to *Asthi dhatu kshaya* in the hip joint. To counter this *Rakta dushti*; *Virechana* was planned before proceeding to *Vasti*.^[10] *Virechana* also helps in *Dhatu vishodhana*.^[11]

Patient suffered from facial palsy about one and a half years ago and there was a history of steroid drug intake for the same, for six months, until recovery. Patients having a history of oral steroid usage are more prone to develop AVN.^[12] Glucocorticoid-induced AVN causes significant morbidity and accounts for around 10% of all cases of total hip replacement in the United States.^[13] The prevalence of gluco-corticoid induced AVN is between 3% and 38%, depending on the underlying diseases, gluco-corticoid dosage and route of administration.^[14] Patient had a history of having alcohol occasionally, which is also one of the causes making more proneness for developing AVN.^[15] *Virechana* was selected as a therapy to be used here for *Shodhana* to produce detoxifying effects since there was a history of steroid and alcohol intake. *Virechana* also provides stability to *Dhatu* countering *dhatu sthairya*,^[16] that is needed especially in conditions like AVN. Besides this, there are chances for better absorption of *Vastidravaya* after *Shodhana*, thus chances of better results.

In this trial, *Nimbaamritadi eranda taila* was used for *Virechana*.^[17] The purpose was to perform *Snigdha virechana* considering *Vata* predominant nature of disease and involvement of *Asthi dhatu* that have *Ruksha* and *kharaguna*. Besides, *Eranda taila* is said to act on *Vatadosha* and when it is processed along with *Tikta rasa dravyas* like *Nimba* and *Guduchi*; act on *Asthi dhatu* and help as *Rakta prasadaka* too.

Before *Virechana*; *Udwartana* was planned for external *Rukshana* as the patient was of *Kapha vataja prakriti* with body weight of 90 kg. *Rukshana* would be the procedure of choice to remove any *Avarana* caused by *Kapha* and *Meda* before commencing with the main treatment for better action and bio availability of subsequent therapies. About 200 g of *Yavachurna* and 50 g of *Triphala churna* were used in *Udwartana*. Reduction in stiffness, weight loss and lightness in body were observed after completion of this process. But, severity of pain was persisting during walking and on attempt to climb stairs. Reduction of stiffness could be due to the *Rukshaguna* of *Yava* cause neutralization of *Kapha*, *Pitta*, *Meda* and produce required *Lekhana* effect.^[18] *Triphala churna* also helps in removing excessive *Kapha*, *Meda* and *Twakgata kleda*.^[19] Once the *Avarana* of *Kapha* and *Meda* is resolved; platform for

better action of *Virechana* and *Vasti* is expected on *Vayu*. This could also be the reason for loss of weight and the relative lightness in patient. Internal *Deepana*, *Pachana* with *Dhanyaka* and *Shatapushpa* also lead to increased appetite and proper bowel evacuation on daily basis. Most of the subjective and objective parameters showed marked improvement after the *Virechana karma*.

Eighteen *Virechana vegas* with *Shleshma pravritti* in last two *vegas* indicating optimum procedure (*Samyak shuddhi*) of *Virechana*. No weakness was reported by patient on the day of *Virechana* or subsequent days of *Samsarjana krama*. Considerable improvement in pain and stiffness in hip joints probably owing to *Vata shamaka* and *Ama nirharana* properties of *Eranda taila*.^[20] *Snigdha virechana* was planned owing to counteract the *Ruksha* effect created by *Vataprakopa*. *Tikta* drugs present in it like *Nimba*, *Amrita*, *Patola*, *Kantakari*, etc. nourish *Asthi dhatu* too. After *Virechana karma*, *Tikta ksheera vasti* was administered. Improvement in range of hip joint movements owes to the significant reduction in stiffness and pain produced

after *Virechana*. Marked improvement was observed in abduction, flexion and extension of hip joint.

Honey is the first component of *Vasti*, the base in which the emulsion for other ingredients are prepared. It is also said to possess *Asthi sandhaniya* properties that helps in rebuilding damaged *Asthi*.^[21] *Vasti* with *Tikta dravya*, *Ghrta* and milk is indicated in *Asthi kshaya janya roga*. *Guduchi* is said to be an excellent *Rasayana* drug, known to prevent ageing and degeneration of the tissues, especially *Asthi dhatu*.^[22-23] *Guduchi* is grouped under *Asthi sandhaniya maha kashaya*.^[24] It also has a role in enhancing *Rakta dhatu*,^[8] thus may have a role in providing nourishment to hip joint by re-channelizing blood vessels supplying to it.

Erandamoola is the other *Dravya* used in *Vasti kwatha*, which is said to have *Vata shamaka* properties, thus producing significant relief in pain. It is also said to help as *Ama dosha nirharana* that is responsible for production of stiffness and thus bringing about a considerable improvement in the range of movements at hip joint.

Table 4: Changes observed in pain, stiffness and walking after treatment

| Features | BT | | After <i>Udwartana</i> | | After <i>Virechana</i> | | After <i>Vasti</i> | |
|-----------------------|-------|------|------------------------|------|------------------------|------|--------------------|------|
| | Right | Left | Right | Left | Right | Left | Right | Left |
| Pain at hip joint | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 1 |
| Stiffness | 4 | 4 | 2 | 2 | 1 | 1 | 1 | 1 |
| Difficulty in walking | 4 | 4 | 3 | 3 | 1 | 1 | 1 | 1 |

Table 5: Changes observed in range of Hip Joint Movements

| | RIGHT | | | LEFT | | |
|-----------|-------|------------------------|--------------------|------|------------------------|--------------------|
| | BT | After <i>Virechana</i> | After <i>Vasti</i> | BT | After <i>Virechana</i> | After <i>Vasti</i> |
| Flexion | 44° | 59° | 79° | 34° | 56° | 66° |
| Extension | 29° | 32° | 34° | 29° | 32° | 30° |
| Abduction | 31° | 35° | 36° | 27° | 32° | 32° |



Fig 1: Changes observed in range of Hip Joint Movements

After completion of treatment, patient was prescribed with *Shamana* drugs for a month to nourish *Asthi dhatu* and thus preserving the effects produced by *Panchakarma*. Two tablets of *Abha guggulu* (each 500 mg) twice a day with 60 ml *Rasna saptaka kwatha*, a blend of *Guduchi churna* (2 g), *Ashwagandha churna* (2 g) and *Godanti bhasma* (250 mg) were advised. Patient was advised to consume warm water and easily digestible food items. Exposure to cold air, maintaining one particular posture

for a longer duration, frequent jerky movements and lifting weights were asked to be avoided.

Patient was advised to re-visit the hospital after a month to re-evaluate the features. No further deterioration in the symptoms was noticed after a month. Pain was present in hip joints but only during walking and climbing stairs. Range of movements like flexion, extension and abduction at hip joints were restricted but showed no significant deterioration as compared to the observations made just after completion of therapies. MRI scans of the hip joint after the follow up period showed no further deterioration in the gradation (Grade II) of Avascular necrosis, which suggests that the disease progression was stopped. He was advised to revisit hospital after one month for next treatment regimen.

Conclusion: AVN is an orthopedic condition that poses a challenge in front of whole medical fraternity owing to the impeding of routine activities produced. The adopted therapy in the current case provided marked relief from pain, tenderness, general debility and improvement in the gait. The grade of AVN did not worsen and was maintained. This was a pilot study to evaluate the efficacy of *Udwartana*, *Virechana* and *Vasti* in the management of AVN and the results produced were encouraging enough not only on the subjective and objective scales but also provided a check in disease progression. It is advisable to conduct this particular study on a larger number of samples for a greater span of time to draw more concrete conclusions. More awareness among general public should be created towards management of AVN using Ayurveda to promote earlier diagnosis that might lead to better prognosis.

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References:

1. https://en.wikipedia.org/wiki/Avascular_necrosis#cite_note-nawazkhan-1 last accessed on Dec 1, 2016 at 13.01.
2. Digiovanni CW, Patel A, Calfee R, Nickisch F. Osteonecrosis in the foot. The Journal of the

- American Academy of Orthopaedic Surgeons 2007; 15(4): 208-17.
3. <http://emedicine.medscape.com/article/333364-overview> last accessed on Dec 1, 2016 at 13.15.
 4. Chapman C, Mattern C, Levine WN. Arthroscopically assisted core decompression of the proximal humerus for avascular necrosis. *Arthroscopy* 2004; 20(9): 1003-1006.
 5. Kadlimatti SM, Subbanagouda PG, Sanakal AI, Milind D. Ayurvedic Management of Avascular Necrosis of the Femoral Head - A Preliminary Study. *AYU* 2008; 29(3): 154-160.
 6. Kashinatha shastri, editor. Charaka samhita of Agnivesha, Chikitsa sthana, Vatavyadhi Chikitsa, chapter 28, verse 33, Chaukhambha Sanskrit Sansthan; Varanasi: reprint 2007. p. 196.
 7. Kashinatha shastri, editor. Charaka samhita of Agnivesha, Sutra sthana, Vividhashita pitiya adhyaya, chapter 28, verse 27, Chaukhambha Sanskrit Sansthan; Varanasi: reprint 2007. p. 432.
 8. Kashinatha shastri, editor. Charaka samhita of Agnivesha, Sutra sthana, Yajjapurushiyam, chapter 25, verse 40, Chaukhambha Sanskrit Sansthan; Varanasi: reprint 2007. p. 438.
 9. Kashinatha shastri, editor. Charaka samhita of Agnivesha, Sutra sthana, Shad virechana shata shrityam, chapter 4, verse 9, Chaukhambha Sanskrit Sansthan; Varanasi: reprint 2007. p. 60.
 10. Kashinatha shastri, editor. Charaka samhita of Agnivesha, Sutra sthana, Vidhi shonitiam, chapter 24, verse 18, Chaukhambha Sanskrit Sansthan; Varanasi: reprint 2007. p. 302.
 11. Satyapal bhishag, editor. Kashyapa samhita of Vriddha jivaka, Siddhi sthana, Tri lakshana siddhi, Chaukhambha Sanskrit Sansthan, Varanasi: 2012. p. 150.
 12. David TF, Jennifer JA. Across section study and evaluation of association between steroid dose and bolus dose and avascular necrosis of bone. *The Lancet* 1987; 329(8538): 902-906.
 13. Mankin HJ. Non traumatic necrosis of bone (osteonecrosis). *N Engl J Med.* 1992;326(22):1473-1479.
 14. Assouline DY, Chang C, Adam G, Yehuda S, et al. Pathogenesis and natural history of osteonecrosis. *Seminars in Arthritis & Rheumatism.* 2002; 32(2): 94-124.
 15. Matsuo K, Hirohata, Tomio, Sugioka, et al. Influence of Alcohol Intake, Cigarette Smoking, and Occupational Status on Idiopathic Osteonecrosis of the Femoral Head, Clinical orthopedics and related research. 1988, (234): 115-23.
 16. Shailja S, editor, (4th ed.) Sharangadhara samhita of Sharangadhara, Uttara khanda, Virechanavidhi adhyaya, chapter 4, verse 18, Chaukhambha Orientalia, Varanasi: 2005. p. 347.
 17. Atrideva gupta, editor, Ashtanga hridayam of Vagbhata, Chikitsa sthana, Vatavyadhi Chikitsa, chapter 21, verse 58-61, Chaukhambha Sanskrit Sansthan; Varanasi: 2005. p. 420.
 18. Brahmashankara misra, editor, Bhava prakasha of Bhava misra, Madhyama khanda, Navamo dhanya varga, chapter 21, verse 29-30, Chaukhambha Sanskrit Sansthan; Varanasi: 2012. p. 640.
 19. Atrideva gupta, editor, Ashtanga hr idayam of Vagbhata, Sutra sthana, Anna swaroopa vigyaniya, chapter 6, verse 159, Chaukhambha Sanskrit Sansthan; Varanasi: 2005. p. 65.
 20. Brahmashankara misra, editor, Bhava prakasha of Bhava misra, Madhya khanda, Amavata Chikitsa, chapter 26, verse 50, Chaukhambha Sanskrit Sansthan; Varanasi: 2000. p. 286.
 21. Kashinatha shastri, editor, Charaka samhita of Agnivesha, Sutra sthana, Shad virechana shata shrityam, chapter 4, verse 5, Chaukhambha Sanskrit Sansthan; Varanasi: reprint 2007. p. 60.
 22. Shailja S, editor, (4th ed.) Sharangadhara samhita of Sharangadhara, Poorva khanda, Deepana pachanadi kathanam, chapter 4, verse 14, Chaukhambha Orientalia; Varanasi: 2005. p. 33.
 23. Yadavji trikamji, editor, Charaka samhita of Agnivesa, Chikitsa sthana, Rasayana, chapter 1, verse 7, Chaukhambha Surabharati Prakashan; Varanasi: 2006. p. 376.
 24. Kashinatha shastri, editor. Charaka samhita of Agnivesha, Sutra sthana, Shad virechana shata shrityam, chapter 4, verse 5, Chaukhambha Sanskrit Sansthan; Varanasi: reprint 2007. p. 60.



Jalaukavacharana (Leech application) and adjuvant therapy in the management of infected wound

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ABSTRACT

Keywords:

Case report,
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Katupila,
Leech application,
Panchavalkala,
Wound

Infected wounds are manifested as a complication of trauma or due to various pathological conditions and are difficult to manage because of their non-healing nature. In Ayurveda, infected wounds can be compared with *Dusta vrana*. Besides other modalities of treatment; leech application has been emphasized in the management of such manifestations. A male patient of 45 years age having *Vata kaphaja prakriti* visited OPD of *Shalya tantra* with complaints of severe pain, swelling with ulceration over the dorsum of right foot and intermittent fever with history of unknown insect bite for the past two weeks. Local examination revealed an ulcer covered with necrotic tissue with progressive inflammatory changes. Based upon the history and clinical findings; the case was diagnosed as *Dusta vrana* due to *Kita dansha*. Leech application was done by following classical guidelines of Ayurveda. Simultaneously, cleaning of wound with *Panchavalkala Kwatha* and dressing with powder of *Katupila (Securinega leucopyrus)* mixed with *Tila Taila (sesame oil)* was done daily. Changes in size, shape, floor, and margin of the ulcer were recorded at regular interval. Pain, discharge were completely subsided after three consecutive sittings of leech application. The ulcer was completely healed within two months with minimal scar formation. Leech application along with local application of *Katupila* has significant role in controlling inflammation and promoting healing of infected wounds without any adverse effect.

Introduction: Ayurveda explains a wide range of factors in the manifestation of *Vrana like Abhigata* (physical trauma), exposure to *Amla dravya* (chemical), *Kita damsas* (insect bite) etc.^[1]

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On accidental exposure, *Kitas* (insects) emit poisonous substances into the blood through saliva and cause formation of *Vrana* (ulcer) and *Sopha* (inflammation) at the site of bite. If appropriate interventions are not taken at right time; other generalized reactions like *Toda* (burning pain), *Paka* (suppuration), *Shotha* (swelling), *Vaivarnya* (discoloured skin), *Vrana kledana* (foul discharge from ulcer), *Ruja* (pain), *Jwara* (pyrexia) etc. will manifest.^[2]

Insect bite and sting cases are commonly seen in rural clinical practice. Venom is composed of proteins and other substances, which is responsible in developing allergic reactions of various stages depending upon the nature of the venom as well as patient's resistance power. Initially burning pain and redness appears followed by gradual localized swelling. There may be presence of visible sting or a small puncture at the site of bite. The bites may cause manifestations like acute generalized exanthematous pustulosis (AGEP) or toxic pustuloderma, anaphylactic reaction etc.^[3] In routine; rest to the affected part, application of ice packs, compression and elevation of the affected part etc. are advised to reduce inflammation and pain. In addition, other medications like anti-allergic drugs, anti-inflammatory drugs, antibiotics etc are also recommended to combat symptoms.

Exclusive description of wound and its management can be observed in the texts of Ayurveda. Specifically, *Rakta mokshana* (blood-letting) through *Jalauka* (Leech) is emphasized in the management of *Savisaja vrana* (poisonous wound).^[1] Various clinical studies have reported rapid, effective and long-lasting potential of leech application in managing painful conditions.^[4]

Case report: A 45 years old male auto driver of *Vata kaphaja prakriti* visited OPD of *Shalya tantra*, Institute for Post Graduate Teaching and Research in Ayurveda, Gujarat Ayurved University, Jamnagar with complaints of severe pain, swelling with ulceration over the dorsum of right foot and intermittent fever for the past two weeks. History revealed an unknown insect bite during sleep. Burning pain was noticed immediately after the bite that was increased gradually. On 2nd day, affected foot was swollen with symptoms of cellulitis. Patient had taken antibiotics, analgesics and anti-allergic drugs for ten days from a private hospital. He did not get relief and the severity of pain, size of ulcerative lesion was increased. Routine laboratory investigations were normal except slight variation on percentage of neutrophil and lymphocyte count.

On local examination, a progressive ulcer at dorsum of left foot just above the meta-tarso-phalangeal joint, about 5x7 cm in size, with irregular, inflamed margins was found. Floor was covered with necrotic tissue

with foul smell and purulent discharge (Figure 1). On palpation, local temperature was raised and the surrounding area was tender (+++). Distal neurovascular status was normal. Radiological examination of foot revealed no bony abnormality. Based upon the signs and symptoms; case was diagnosed as *Dushta vrana* due to insect bite and planned for *Jalaukaavacharana* (leech application).

Before application of *Jalauka*, necrotic tissue was removed surgically and surrounding skin of the ulcer was cleaned with *Panchavalkala kwatha* [decoction of barks of five trees i.e. *Vata* (*Ficus bangalensis* Linn.), *Udumbara* (*Ficus glomerata* Roxb.), *Ashwattha* (*Ficus religiosa* Linn.), *Parisha* (*Thespesia populnea* Solan ex Correa), and *Plaksha* (*Ficus lacor* Buch-Ham.)].

Jalaukas were applied over the floor and at the border of the ulcer (Figure 2). *Jalaukaavacharana* was started with four *Jalauka* on first day and three *Jalauka* on 3rd and 5th day of admission (Figure 3-4). This was followed by cleaning of the area with *Panchavalkala kwatha* and dressing with paste of *Katupila* (*Securinega leucopyrus* [Willd.] Muell) and *Tila taila* (sesame oil) regularly till complete healing. All the *Jalaukas* used on 1st day were died after 15 minutes of blood-letting, while *Jalaukas* used on 3rd and 5th day were died after an hour.



Fig 1: Wound covered with necrotic tissue with inflamed margins (On the day of admission)

Observations: Swelling and pain were reduced remarkably on 5th day of leech application. On 15th day of regular dressing; necrotic tissue disappeared completely and wound became clean with exposed tendons (Figure 5). After 30 days, healthy granulation tissue was observed and exposed tendons were covered with healthy granulation tissue (Figure 6). Gradually,

the ulcer size was reduced with remarkable wound contraction. After 45 days, the wound became small and

wound was healed completely by the end of two months (Figure 7-10) without any internal medication.



Fig 2: Application of leeches



Fig 3: On 3rd day (after debridement and application of Jalauka)



Fig 4: On 5th day (after debridement and application of Jalauka)



Fig 5: On 15th day (granulation tissues developed)



Fig 6: On 30th day (contracted wound with healthy granulation tissue)



Fig 7: On 35th day (covered surface with healthy granulation tissue with contracted margin)



Fig 8: On 42nd day



Fig 9: On 49th day



Fig 10: On 56th day (healed wound with minimum scar)

Discussion: About 67 varieties of *Kitas* (insects) are mentioned in the classics of Ayurveda. The group of *Tikshna Kita* produces severe cutaneous reactions in form of *Sopha* (inflammatory lesions), *Granthi* (swellings), *Pidakas* (vesicles) and other systemic manifestations like *Jwara* (fever), *Daha* (burning pain), *Angamarda* (bodyache), *Murchchha* (anaphylactic reactions) etc. by virtue of their *Ushna* (hot), *Tikshna* (sharp), *Shukshma*

(penetrating into minute channels of the body), *Vyavayi* (rapidly permeating into the whole body), *Avipaki* (disturbing the tissue metabolism) etc. characters.^[5] Due to *Ushna guna*; *Kita visha* vitiates *Rakta* and *Pitta dosha* and produces *Daha*, *Sopha* at the local site. Being dry in nature, it causes pain by vitiating the *Vata*. *Shukshma guna* probably takes the poisons to the deeper tissues and by spreading it causes cellulites.

In modern dermatology, these reactions are found when body comes in contact with offended arthropods that produce injury to the skin in a variety of mechanisms.^[6] Mites are also considered as aetiological factors in the manifestation of dermatological reactions. Contact may cause erythematous papules, pruritus and formation of vesicles etc.^[7]

Raktamokshana is being practiced in India since long in the management of *Dusta vrana* (infected wounds), *Granthi* (cystic lesions), *Arbuda* (Neo Plasm) etc. *Jalaukaavacharana* is one type of *Raktamokshana* that counters vitiated *Rakta* and *Pitta*. After piercing the skin, leech sucks the blood and injects number of biological substances into the blood stream. A medium size leech sucks 5-15ml of blood in one sitting.^[8] In this study, approximately 7-8 cm size leeches were used and they consumed 10-15 ml of blood in each sitting. As, leeches sucked vitiated *Rakta dosa* (blood with toxins and unwanted metabolites) from the site of ulcer; reduction in pain and inflammatory signs were noticed.

Patient was reported reduction in pain suggesting poisonous substances might have been removed through the blood by leeches. The inborn quality of *Jalauka* i.e. *Shita* (cold) and *Madhura* (sweet) are opposite to *Pitta dosa* and these qualities might help in pacifying vitiated *Pitta*.^[9] Hirudin, Hyaluronidase, Kallikrein, Histamine, Collagenase, Bdelins, Eglins present in saliva of leech possesses activity of wound healing. Hirudin is capable to increase surface perfusion due to its anti-coagulation effect. Presence of Histamine, a vasodilator constituent improves blood circulation by dilating capillary bed in that area and might help in flushing out of the unwanted substances from the ulcer. Thus, possibly cellulites was controlled. Other substances like hyaluronidase, bdellins, eglins possesses anti-inflammatory and antibiotic properties. All these in combination, possibly played a great role in controlling inflammation and helped in wound healing.^[10-12]

Panchavalkala kashaya helps in wound healing by the virtue of its *Kashaya rasa* (astringent taste),^[13] that brings back the *Vrana* to *Shudhha avastha* (clean stage) besides checking excessive discharge.^[14] Paste of *Katupila* with *Tila taila* is traditionally in use for dressing wounds and its wound healing efficacy is reported.^[15] *Snigdha guna*

of *Tila taila* helps in facilitating the process of overall wound healing.

It is observed that the progressive phase of ulcer was managed successfully by three sittings of *Jalaukavacharana* and regular dressing with paste of *Katupila* and *Tila taila*. No other medicines were used during the course of treatment.

Conclusion: *Jalaukavacharana* along with local application of paste of *Katupila* mixed with *Tila taila* is an effective and safe treatment modality for the management of *Dusta vrana* caused by insect bite. This modality may even be beneficial in other types of infective and non-healing ulcers. However, such usefulness needs to be evaluated through well-defined clinical trials.

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References:

1. Singhal GD. editor. (2nd ed) Sushruta samhita of Sushruta, Chikitsa sthana, Dwivraniya Chikitsa, chapter 1, verse 6, Chaukhambha Sanskrit Sansthan; New Delhi: 2007. p. 140.
2. Shastri KN, Pandey GS. editor. Charaka samhita of Agnivesha, Chikitsa sthana, Visha Chikitsa, chapter 23, verse 178, Chaukhambha Sanskrit Sansthan; Varanasi: reprint 2007. p. 577.
3. Bhat YJ, Hassan I, Sajad P, Atiya Y, Wani R. Acute Generalized Exanthematous Pustulosis due to Insect Bites? Indian Journal of Dermatology 2015; 60(4): 422.
4. Detlev K, Biebertaler BGH, Michael A, Thomas R. Medicinal leech therapy in pain syndromes: a narrative review. Wiener Medizinische Wochenschrift 2014; 164(5): 95-102.
5. Singhal GD. editor. (2nd ed) Sushruta samhita of Sushruta, Kalpa sthana, Kita Kalpa, chapter 8, verse 5-18, Chaukhambha Sanskrit Pratishtan; New Delhi: 2007. p. 630-631.
6. Kar S, Dongre A, Krishnan A, Godse S, Singh N. Epidemiological Study of Insect Bite Reactions from Central India. Indian Journal of Dermatology 2013; 58(5): 337-341.

7. Krinsky WL. Dermatoses associated with the bites of mites and ticks (Arthropoda:Acari). International Journal of Dermatology 1983; 22(2): 75-91.
8. Abdullah S, Latief MD, Rashid A, Tewari A. Hirudotherapy / Leech therapy: Applications and Indications in Surgery. Archives of Clinical and Experimental Surgery 2012; 1(3): 172-180.
9. Singhal GD. editor. (2nd ed) Sushruta samhita of Sushruta, Sutra sthana, Kita Kalpa, chapter 13, verse 6, Chaukhambha Sanskrit Pratishthan; New Delhi: 2007. p. 87.
10. Porshinsky BS, Saha S, Grossman MD, Beery II PR, Stawicki SP. Clinical uses of the medicinal leech: A practical review. Journal of Postgraduate Medicine 2011; 57(1): 65-71.
11. Shankar KMP, Rao SD, Umar SN, KV. A clinical trial for evaluation of leech application in the management of Vicarcika (Eczema). Ancient Science of Life 2014; 33(4): 236-241.
12. Abdualkader AM, Ghawi AM, Alaama M, Awang M, Merzouk A. Leech Therapeutic Applications. Indian Journal of Pharmaceutical Sciences. 2013; 75(2): 127-137.
13. Acharya YT, editor. Charaka samhita of Agnivesha, Sutra sthana, Atreya bhadraakaapyeeya, chapter 26, verse 43, Rashtriya Sanskrit Sansthan; New Delhi: reprint 2002. p. 145.
14. Ajmeer AS, Dudhamal TS, Gupta SK, Mahanta VD. Katupila Securinega leucopyrus as a potential option for diabetic wound management. Journal of Ayurved and Integrative Medicine. 2014; 5(1): 60-63.
15. Ajmeer AS, Dudhamal TS, Gupta SK. Management of Madhumehajanya Vrana (diabetic wound) with Katupila (Securinega leucopyrus [Willd] Muell.) Kalka. AYU 2015; 36 (3): 353-55.



Management of Hashimoto's Thyroiditis through Ayurveda

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ABSTRACT

Keywords:

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Thyroiditis

Hashimoto's Thyroiditis (HT) is the most common auto-immune thyroid disease and the commonest cause of hypothyroidism. In conventional medicine, treatment of choice for HT is replacement of thyroid hormone. A case of HT was managed at the OPD level by following Ayurveda principles and found to be effective. A treatment protocol was designed based on the signs and symptoms and assigned in this patient. *Snehapana* followed by *Vamana* and *Virechana* and at the end *Shamana* was done with *Varunadi kwatha bhavita shilajatu* for a period of three months with two months follow up. The treatment protocol was found to be effective in symptomatic and biochemical profiles of the patient. Patients of HT should be able to have a choice against the lifelong hormone therapy. This can be achieved by adequate evaluation of the individual action of the therapies adapted here and replicating the same in a much larger group.

Introduction: Hashimoto's Thyroiditis (HT), is the most common auto-immune thyroid disease, with fluctuating thyroid function and the commonest cause of hypothyroidism in iodine sufficient areas of the world.^[1,2] It is primarily a disease of women, with a sex ratio of approximately 7:1 and can also occur in children.^[2] In an epidemiological study conducted in India, prevalence of >20% was recorded.^[3] Incidence rate of HT is 0.54% in India. The cause of HT is thought to be a combination of genetic susceptibility and environmental factors.

It is characterized clinically by gradual thyroid failure,

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with or without goitre formation, due to auto-immune-mediated destruction of the thyroid gland involving apoptosis of thyroid epithelial cells.^[4] Graves' disease and HT are closely related patho-physiologically.^[2] HT has many serious complications like infertility, suppurative thyroiditis, recurrent miscarriages, preterm birth, heart failure etc. Diagnosis of HT is made clinically and biochemically. 90 per cent of HT patients have high anti-thyroid peroxidase (TPO) and anti-thyroglobulin (Tg) antibody which confirms the autoimmune pathology.^[5]

The treatment of choice for HT is replacement of thyroid hormone. The drug of choice is individually tailored and titrated levothyroxine sodium administered orally.^[6] But, a long term hormonal therapy is not always free from complications as well as side effects. Moreover, it

is unfeasible to revert the antibody blood parameters in HT with modern medicine.

Currently, hypothyroid patients are opting for Ayurvedic management due to dissatisfaction in modern regime. A case of HT was managed through treatment protocol based on the clinical features and managed by following Ayurveda guidelines.

Case report: A 48 year old male patient, painter by profession, who was apparently well fourteen years back, developed progressive fatigue and drowsiness initially. Then after two years (2005), he gradually developed mild neck swelling that became diffuse, painless and slowly increased in size. These symptoms were followed by sleeplessness, weight loss and palpitation. He was diagnosed as Hyperthyroidism and was put on Tab. Methimazole 20 mg/day (anti-thyroid medication) for two years (2007 - 2009). Then he was on irregular follow up for one year. In 2011, he developed new complaints like constipation, nocturnal itching associated with mild eruptions, cold intolerance, depression, hoarseness of voice, dry hair and skin. Blood investigations at this stage revealed Hypothyroidism. Radio iodine uptake and Fine needle aspiration cytology (FNAC) were advised in 2011 to rule out malignancy. Radio iodine study detected enlarged thyroids with high uptake, no cold area and retrosternal extension suggestive of multi nodular goiter (MND) and Thyrotoxicosis. Aspirate of FNAC showed occasional groups of follicular cells and few collection of lymphocytes and histocytes in a background of blood and colloid, suggestive of Thyroiditis and he was administered Tab. Levothyroxine. He was kept on varying doses of drug (50 mg - 100 mg) based on his hormone level. But he didn't get much relief from any of the above symptoms. As, Thyroid Stimulating Hormone (TSH) levels were not coming into physiological range, he stopped the medication against medical advice four months before his first visit to OPD of Govt. Ayurveda College, Thiruvananthapuram in July 2012. Symptoms like severe sleeplessness due to nocturnal itching, weight loss, excessive appetite, constipation and cold intolerance were the chief complaints during his visit to the OPD. On examination there was mild swelling of thyroid gland, dryness of skin and palpitation.

Patient was provisionally diagnosed as *Kapha avrita vata* (*vata* obstructed by *Kapha*) with *Pitta-anubandha* (associated with *Pitta*) based on the presenting complaints like *Sheeta asahishnuta* (cold intolerance), *Swara graha* (hoarseness of voice), *Dourbalya* (tiredness).^[7] *Avarana* (obstruction) is the encompassing of metabolic pathways by vitiated body humors. Symptoms like *Galapaka* (inflammation of thyroid gland), *Atyagni* (excessive appetite) can be attributed to *Pittanubandhatwa*.

The treatment was started with internal and external *Rookshana* (desiccating) therapy. The treatment protocol assigned for this patient was *Rookshana* and *Snehapana* (internal administration of medicated ghee) followed by *Vamana* (therapeutic emesis) and *Virechana* (therapeutic purgation) followed by *Shamana* (pacification) with *Varunadi kwatha bhavita shilajatu gutika*. Treatment schedule followed is enlisted at Table 1.

Observations: Clinical features, Serum Thyroid function test (TFT) values, TPO and Tg Antibody titre and Thyroid gland sonography were assessed before and after the treatment [Table 2]. Patient reported increased appetite and normal bowel movements after *Deepana* and *Pachana*. But, mild constipation and dryness of skin was observed during *Udwartana*. By *Achapana*, complaints like itching, constipation, sleeplessness and dryness of skin were alleviated. Itching was completely subsided after *Vamana* and palpitations after *Virechana*. Enhanced complexion was also noticed after *Virechana*. After administration of *Shamana* drug; relief in depressive symptoms were observed. Blood parameters were improved approaching towards normal value after *Shamana chikitsa*. Both thyroid lobes were normal in size, hypoechoic and showed coarsened parenchymal echotexture with increased vascularity before trial. But after the trial, normal size of the lobes was maintained with changed texture to hyperechoic, showing a good prognosis.

After two months follow up, TSH level came down to 10.3 mIU/L and with in the next month, it became 6 mIU/L. No recurrence of previous symptoms were observed till date. The treatment made a pleasing improvement in his quality of life.

Table No 1: Treatment Schedule

| Treatment | Drug of Choice | Duration |
|--|--|--------------|
| <i>Deepana</i> and <i>Pachana</i> (correction of digestion and metabolism) | <i>Guduchyadi kwatha</i> (90 ml) and <i>Panchakola choorna</i> (5 g) in Butter milk (200 ml) | 8 days |
| <i>Udwartana</i> (herbal powder massage) | <i>Kola kulathadi choorna</i> | 3 days |
| <i>Snehapana</i> | <i>Tiktaka ghrita</i> ^[8] (started with a dose of 50 ml and increased to 250 ml) | 7 days |
| <i>Swedana</i> (Fomentation) | <i>Abyanga</i> (external oleation) with <i>Dhanwantaram taila</i> ^[9] followed by <i>Ushma sweda</i> (fomentation therapy) | 1 day |
| <i>Vamana</i> | <i>Madana pippali</i> (seeds of <i>Randia dumetorum</i> Retz.) and <i>Yashtimadhu phanta</i> (hot infusion of <i>Glycyrrhiza glabra</i> Linn.) | 1 day |
| <i>Peyadi sansarjana krama</i> (Dietary prescriptions) | | 3 days |
| <i>Mridu virechana</i> (mild therapeutic purgation) | <i>Avipattikara choorna</i> ^[10] (20 gm) | One day |
| <i>Peyadi sansarjana krama</i> (Dietary prescriptions) | | One day |
| <i>Shamana chikitsa</i> | <i>Varunadi kwatha bhavitha shilajatu</i> (1g twice a day with cold water) | Three months |

Table 2: Effect on TFT & Thyroid Antibody parameters

| Parameters | Normal Values | Before Trial | After Trial |
|------------------|---------------|--------------|-------------|
| TSH (mIU/ mL) | 0.4 - 4.2 | 46 | 16 |
| T3 (ng/dl) | 80 - 200 | 110 | 119 |
| T4 (µg/dl) | 4.6 - 10.5 | 7.3 | 7.2 |
| Anti TPO (IU/ML) | <34 | 208.7 | 32 |
| Anti Tg (U/ML) | <60 | 1270 | 56 |

Discussion: Autoimmunity is the main culprit in Hashimoto's Thyroiditis, impairing cellular metabolism. Use of immuno-modulatory, anti-inflammatory drugs and other molecules that clears the nutrition pathway through correction of digestion and metabolism will help in breaking the pathology.

On analysis of signs and symptoms, the patient was found to have *Vata kapha pradhaana sannipatika doshadushti* (vitiating of all three body humors). An apt drug in this condition should cause *Sroto shodhana* (removes blocks in metabolic pathways) by elimination of vitiating *kapha pitta* and *Anulomana* of *Vata*. Patient was responding positively to *Deepana* and *Pachana* (corrects digestion and metabolism through augmenting the digestive fire), *Rookshana* (desiccating), *Ushna* (hot), and *Vamana* treatment procedures.

Thus, the patient was treated on the line of mitigation of *Kapha* and pacifying *Vata* (*vata anulomana*). As the patient was having vitiating of *Pitta* too; *Pitta hara* drugs and therapies were also included in the protocol. *Agni deepana* (kindle digestive fire) was done initially to correct the digestion and metabolism.

So, *Guduchyadi kashaya*^[11] and *Panchakola choorna*^[12] in *Takra* was advised in the initial stage to achieve *Ama pachana*, *Agni deepana* and to subside vitiating *Kapha* and *Pitta*. *Rookshana* was induced by means of *Panchakola choorna* internally and *Udwartana* with *Kola kulathadi choorna*.^[13] This was followed by *Sneha pana* as *Poorva karma* of *Shodhana*. Both *Vamana* and *Virechana* are

adopted as *Shodhana* procedures in this case. *Vamana* helps in eliminating vitiated *Kapha dosha*, while *Virechana* helps in eliminating vitiated *Pitta dosha*. *Shamana* drug prepared by doing seven *Bhavana* of *Shilajatu* in *Varunadi Kwatha*. Both the drugs have *Katu vipaka* and *Ushna virya* in general. They also possess *Agni deepana*, *Medohara* and *Lekhana* properties. *Shilajatu* is *Tridosha shamaka* and *Varunadi gana* is *Kapha vata prashamaka*. Thus these qualities of drug intensely suit the disease condition.

Micro-level Dosha correction will be ensured by the *Varunadi kwatha bhavita shilajatu* and the reach of the drug up to *Medo dathu* level explains the rationale behind the success of the treatment protocol.^[14,15] Moreover the drug *Shilajatu* opted here is a *Rasayana* with multifaceted action.

Conclusion: The treatment protocol containing *Rookshana*, *Snehana*, *Vamana* and *Virechana* followed by *Shamana* drug *Varunadi kwatha bhavita shilajatu* is followed in this case of HT. This protocol is found to be effective in clinical, biochemical and sonological aspects. Though no drugs were given during the follow-up period, symptomatic relief was maintained. Patients of HT should be able to have a choice against the lifelong hormone therapy. This can be achieved by adequate evaluation of the individual action of the therapies adapted here and replicating the same in a much larger group.

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References:

1. Jaume JC. Endocrine autoimmunity. In : Gardner DG, Shoback DM, editors. Greenspan's basic & clinical endocrinology. New York: McGraw-Hill Medical; 2007. p. 59-79.
2. <http://www.uptodate.com/contents/pathogenesis-of-hashimotos-thyroiditis-chronic-autoimmune-thyroiditis> last accessed on Aug 1, 2016 at 16.47.
3. Ambika GU, Sanjay K, Rakesh KS, Ganapathi B, et al. Prevalence of hypothyroidism in adults: An epidemiological study in eight cities of India. Indian journal of Endocrinology and Metabolism 2013; 17(4): 647-652.
4. George JK, Tanja D, Jennifer G, Michael K, et al. Thyroid Stimulating Antibodies Are Highly Prevalent in Hashimoto's Thyroiditis and Associated Orbitopathy. J Clin Endocrinol Metab 2016; 101(5): 1998-2004.
5. Debmalaya S. Spectrum of Hashimoto's thyroiditis: Clinical, biochemical & cytomorphologic profile, Indian J Med Res. 2014; 140(6): 710-712.
6. <https://misc.medscape.com/pi/iphone/medscapeapp/html/A120937-business.html> last accessed on Aug 15th 2016 at 11.34.
7. Acharya YT, editor. Commentary Ayurveda Dipika of Chakrapanidatta on Charaka Samhita of Agnivesha, Chikitsa Sthana; Vata vyadhi Chikitsa: chapter 28, verse 221-230. Chaukhamba Krishnadass Academy; Varanasi: Reprint 2011. p. 626.
8. Harishastri P, editor. (9th ed.) Commentary Sarvangasundara of Arunadatta on Ashtanga Hridayam of Vagbhata, Chikitsa Sthana; chapter 19, verse 7-10. Chowkhambha Orientalia; Varanasi: 2005. p. 711.
9. Harishastri P, editor. (9th ed.) Commentary Sarvangasundara of Arunadatta on Ashtanga Hridayam of Vagbhata, Shareera Sthana; chapter 2, verse 47-52. Chowkhambha Orientalia; Varanasi: 2005. p. 372.
10. Harishastri P, editor. (9th ed.) Commentary Sarvangasundara of Arunadatta on Ashtanga Hridayam of Vagbhata, Kalpa Sthana; chapter 2, verse 21-23. Chowkhambha Orientalia; Varanasi: 2005. p. 743.
11. Acharya YT, editor. (9th ed.) Sushruta Samhita of Sushruta, Sutra Sthana; chapter 38, verse 51. Choukambha Orientalia; Varanasi: Reprint 2009. p. 167.
12. Pandey GS, editor. (7th ed.) Commentary of Chunekar KC on Bhavaprakasha Nigantu of Bhavamishra, Hareetakyadi varga; chapter 1, verse 72-73. Choukambha Bharati Academy; Varanasi: 2010. p. 25.
13. Shivaprasad S, editor. Ashtanga Sangraha of Vagbhata, Chikitsa Sthana; chapter 23, verse 2. Chowkhambha Sanskrit Series; Varanasi: 2008. p. 564.

14. Kashinatha Shastri, editor. *Rasa Tarangini* of Sadananda Sharma, chapter 22, verse 84-87. Motilal Banarasi Das; Varanasi: 2004. p. 586.
15. Harishastri P, editor. *Ashtanga Hridayam* of Vagbhata, Sutra Sthana; chapter 15, verse 21. Chowkhambha Orientalia; Varanasi: 2005. p. 236.

Ayurvedic Management of Ankylosing Spondylitis

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ABSTRACT

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Ayurveda serves best in many disease conditions where conventional system face several limitations. Ankylosing spondylitis is one such condition, whose effective management is becoming a challenge. It is a systemic auto-immune rheumatic disease, which shows a strong association with genetic factor HLA-B27. Early stages of disease show inflammation of spine and other symmetrical small joints and other soft tissues, whereas chronic stage presents with axial deformity and pain. NSAIDs and steroids are generally prescribed in conventional systems, but are not a complete remedy. The signs and symptoms of this disorder are not mentioned in Ayurveda, but, based upon the clinical picture, treatment can be planned. A male 24 years patient diagnosed with axial and peripheral Ankylosing spondylitis having HLA-B27 positive case was managed with *Panchakarma* procedures followed by suitable Ayurvedic medicines. After completion of the treatment, pain in the sacro-iliac region, morning stiffness of joints were significantly reduced with reduced ESR and CRP. As the signs and symptoms of this disease are not mentioned in Ayurveda classics; specific treatment protocol and formulations cannot be given. Selection of drugs may differ from case to case. The treatment plan followed in this study may be adopted in future cases changing the selection of drugs based upon the necessity to obtain good results.

Introduction: The only system of holistic health management that existed since the dawn of man's history is the Indian system of Ayurveda. There is now enough evidence to say that this was the mother of all other systems of medicine.

But in spite of the greatness of this science, Ayurveda has to satisfy itself in the seat of alternative medicine, although it was the chief system of medicine till the emergence of modern allopathic medicine. But credit should be definitely given to allopathic system of medicine because it has made the life of human being more comfortable with the help of various researches and advancement in treatment modalities. But in certain disease conditions like auto immune diseases; allopathic system of medicine has still not found any successful remedies. Ankylosing spondylitis is one such

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auto-immune rheumatic disease that shows a strong association with genetic factor HLA-B27.^[1]

In early stages of disease, there is inflammation of spine with symmetrical small joints and other soft tissues. Chronic stage is characterized by marked axial immobility or permanent deformity and pain. It usually starts in late teens and early twenties and can lead to progressive bony fusion of sacro-iliac joints and the vertebral column. Extra-articular manifestations may also manifest in a few patients.^[2] In allopathic system of medicine, NSAIDs and steroids are generally prescribed along with physiotherapy. But still it remains as a symptomatic approach. If Ayurvedic approaches are intervened appropriately, further progression of the disease can be prevented. In this attempt, a case of Ankylosing spondylitis has been successfully managed with Ayurvedic treatment approaches.

Case report: A 24 year-old male patient visited the OPD with complains of early morning stiffness with asymmetrical inflammation of left knee, right ankle and inter-phalangeal joints of hands since one year. He was diagnosed with axial and peripheral Ankylosing spondylitis having HLA-B27 positive.

Pulse was 84/min, regular; Blood Pressure - 120/80 mm of Hg, Temperature - 99.6 °F, Respiratory rate - 18/min. Respiratory, Cardiovascular and Central nervous system did not show any specific abnormality. Per abdomen examination was normal. Tenderness was present over bilateral sacroiliac joints. Morning stiffness of joints with oedema over left knee and right ankle joint was present. Achilles tendinitis was present in right leg causing pain in lower part of leg. Hemoglobin levels were below 9.5% for past one year whereas ESR was 100mm and CRP level 76 mg/l.

Past treatment history: The patient was under the supervision of a rheumatologist for eight months, where combinations of different drugs have been prescribed (Table 1).

No improvement was observed with these medicines, subsequently all these medicines were withdrawn. The patient was advised to continue Voveran (Diclofenac sodium) tablet as an analgesic agent to relieve pain. Patient lost 16 kg weight within the six months time and

developed other symptoms like hyperacidity and loss of appetite.

Table 1: Conventional drugs prescribed to the patient

| | |
|--|---|
| 1 | Tab. Saaz DS (Sulphasalazine) 1000 mg twice a day |
| 2 | Tab. Folistax (Methotrexate) 15 mg once a week |
| 3 | Tab. Etoshine (Etoresoxib) 120 mg twice a day |
| 4 | Tab. Medrol (Methyl prednisolone) 8 mg once / day |
| 5 | Tab. Voveran SR (Diclofenac Sodium) 75 mg twice / day |
| 6 | Tab. Folvite (Folic acid) 5mg once a day |
| 7 | Tab. Ultracet (Tramadol Hydrochloride 37.5 mg & Acetaminophen 325 mg) twice a day |
| The above drugs were used for three months by the patient under the supervision of the rheumatologist. As the response was very minimal, the prescription was changed and the below drugs were prescribed. | |
| 1 | Inj. Depo-medrol (Methyl prednisolone Acetate) 120 mg once daily |
| 2 | Inj. Folistax (Methotrexate) 15 mg once a week |
| 3 | Tab. Myospaz (Chlorzoxazone 250 mg + Paracetamol 500 mg) twice a day |
| 4 | Tab. Lefunomide 10mg once a day |

Ayurveda perspective: Ankylosing spondylitis cannot be mirrored with any particular disease condition directly that is elaborated in Ayurveda classics. It can be compared to some extent with *Ama vata*, or *Gambhira vatarakta*, or *Asthi-majjagata vata*.^[3-5] Taking this into consideration, the patient was evaluated according to Ayurvedic perspective. *Prakriti* of the patient was *Vata pitta*. *Agnimandya* was noticed in the patient and presented with *Ama lakshanas* in *Mala* and *Jihva*. Though, *Vata* and *Pitta* were the dominating *doshas* in this manifestation; involvement of *Kapha dosha* was also noticed. All the three vitiated *Doshas* affected *Rasa*, *Rakta*, *Mamsa*, *Asthi*, *Majja dhatu*s. Considering the condition of

the patient; *Panchakarma* procedures were planned that were followed by internal medications for 45 days (Table 2).

Besides these procedures; *Kaishora guggulu* (500 mg thrice), *Sanshamani vati* (250 mg twice), *Punarnavadi kwatha* (15 ml twice) and a blend of *Amalaki*, *Musta*, *Guduchi* powders (1 g each with warm water) were administered during the first two weeks of the management.

This was followed by *Kaishora guggulu* (500 mg thrice), *Sanshamani vati* (250 mg twice), *Rasna erandadi kashayam* (15 ml twice), powder of *Ashwattha twak* (1 g twice with honey) and *Lepa guti* for external application over swollen, inflamed parts.

Table 2: Ayurvedic treatment plan

| Panchakarma Treatment | Duration |
|--|----------|
| <i>Dipana pachana</i> (<i>Amruttotara kashayam</i>) | 5 days |
| <i>Snehapana</i> (<i>Indukantam ghritam</i>) | 5 days |
| <i>Abhyanga</i> (<i>Tila taila</i>) | 2 days |
| <i>Swedana</i> (Fomentation) | 2 days |
| Virechana (<i>Trivrutadi avaleha</i>) | 1 day |
| <i>Samasarjana krama</i> (Dietary regime) | 7 days |
| Karma vasti | 15 days |
| <i>Anuvasana vasti</i> (<i>Sahacharadi taila</i>) | |
| <i>Yapana vasti</i> (<i>Mustadi yapana</i>) | |
| <i>Shastishali pinda swedana</i> | 15 days |
| <i>Saravanga swedana</i> [with <i>Nirgundi</i> (<i>Vitex negundo</i> Linn.) and <i>Shigru patra</i> (leaves of <i>Moringa oleifera</i> Lam.)] | 15 days |
| <i>Upanaha swedana</i> | 10 days |
| <i>Jalaukacharana</i> (Leech therapy) At right ankle and left knee joint | 3 days |

Observations: All the allopathic medicines were gradually withdrawn by 21st day of commencement of Ayurvedic treatment. After withdrawing NSAIDs; both pain and swelling were aggravated, but they were tolerable. After completion of *Panchakarma* therapy, sacro-iliac joint pain was completely reduced, while morning stiffness was reduced significantly. Mild swelling was observed over left knee and right ankle joints especially in the morning hours, which was reduced with physiotherapy. After one month of follow up, only mild tolerable swelling over right ankle was complained. This swelling was further reduced with continuous physiotherapy. Hematological profile of the patient was significantly improved. Good improvement in hemoglobin percentage was seen. ESR and CRP were also reduced suggesting reduction in inflammation (Table 3). Patient gained 8 kg weight within two months after completion of the treatment. By the end of treatment, no need of conventional analgesics or anti-inflammatory drugs was needed by the patient.

Discussion: Patient was analysed by following Ayurvedic principles. On examination; it was observed that patient had symptoms of *Ama*, so *Ampachana* was suggested with *Amrutottaram kashayam*^[6] that is generally used in vitiation of Tridoshas and is also indicated in *Jwara*. *Ama pachana* is a crucial step that is done before *Snehapana* followed by *Virechana*. Considering severity of the disease and *Samata* of *Mala*, as well as dominancy of *Vata* and *Pitta*; *Virechana* was planned. *Snehapana* with *Indukantam ghritam*^[7] was planned, as it plays an important role in *Rasa pradoshaja* diseases. *Virechana* was given with *Trivrutadi avaleha*^[8] considering vitiation of *Pitta* and *Kapha*. *Trivrit* helps in eliminating *Pitta* followed by *Kapha* and is also well tolerated by the patient. After *Virechana*, patient was given *Karma vasti* with alternate *Anuvasana* and *Yapana vasti*. *Anuvasana vasti* was given with *Sahacharadi taila*^[9] that acts very well on lower part of the body. *Mustadi yapana vasti*^[10] was given considering *Madhyama bala* of the patient as well as its efficacy on *Vaata dosha*. *Mustadi yapana* is good in the involvement of *Asthi* and *Majja*. *Shastika shaali pinda sweda*^[11] and *Upanaha sweda*^[12] were given for the relief of pain and swelling, *Sarvanga sweda* with *Nirgundi* and *Shigru* was also given for relief of pain and removing *Stambha*. Internal medicine such as *Kaishora guggulu*^[13] and *Sanshamani vati*^[14] were selected considering their

action on *Vata*, *Pitta*, *Kapha*, *Rasa*, *Rakta* and *Mamsa*. *Amalaki*, *Guduchi* and *Musta* in a combination is known for its role in *Asthi majja gata jwara pachana*.^[15]

Table 3: Changes in Hemotological profile

| Investigations | Before treatment | Immediately after Pancha karma | After 45 days of Pancha karma |
|-----------------------|------------------|--------------------------------|-------------------------------|
| Hb (gm%) | 9.5 | 9.3 | 12.7 |
| RBC (million / cmm) | 3.95 | 3.8 | 4.84 |
| ESR | 106 | 76 | 32 |
| CRP (mg/L) | NA | 27 | 14.30 |
| Platelets (per c. mm) | 5,96,000 | 3,72,000 | 4,53,000 |

Punarnavadi kwatha^[16] also shows action on *Rasa*, *Rakta*, *Mamsa* and possess *Shothahara* property. *Rasna erandadi kashayam*^[17] added to the list of medicines in further stages of treatment, as it pacifies pain due to *Vata* mainly in lower limbs and back. It also reduces *Shotha* due to *Vata*. *Ashwattha churna*^[18] was administered as it controls vitiated *Vata* and *Rakta*. *Jalaukacharana*^[19] (Leech therapy) was done over right knee and left ankle to reduce the pain and inflammation occurring due to Achilles tendinitis. *Lepa guti*^[20] was added in follow up treatment to control *Vedana* and *Shopha* (analgesic and anti-inflammatory) action locally. Physiotherapy with stretching exercises were advised to relieve stiffness of muscles as well as joints.

Conclusion: Concept of pill for every ill is becoming an outdated concept in the Modern era. The present patient was examined and treated following to Ayurvedic principles. For auto immune diseases, such as Ankylosing spondylitis, where there is no satisfactory proven treatment in conventional medical systems; Ayurveda can be used effectively. Though single case report cannot prove treatment for all such auto immune manifestations; well designed clinical trials may be planned in order to validate actual potency of treatment patterns and principles applied in this case.

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References:

- Zochling J, Van der Heijde D, Burgos-Vargas R, Collantes E, et al. ASAS / EULAR recommendations for the management of ankylosing spondylitis. *Annals of Rheumatic Diseases* 2006; 65: 442-452.
- Khan MA. Clinical features of ankylosing spondylitis. In: Hochberg MC, Silman AJ, Smolen JS, Weinblatt ME, Weisman MH, editors. *Rheumatology*, 3rd ed., London, 2003; 1161-1181.
- Lakshmi pati shastri, editor. *Yogaratanakara*, *Amavata Nidana*, *Chaukhambha Sanskrit Sansthan*, Varanasi: 2009. p. 564.
- Tripathi B, editor. (1st ed) *Charaka samhita of Agnivesha*, *Chikitsa sthana*, *Vata shonita chikitsa*, chapter 29, verse 21, *Chaukhambha Surabharti Prakashan*, Varanasi: 2005. p. 986.
- Tripathi B, editor. (1st ed) *Charaka samhita of Agnivesha*, *Chikitsa sthana*, *Vata vyadhi chikitsa*, chapter 28, verse 33, *Chaukhambha Surabharti Prakashan*, Varanasi: 2005. p. 942.
- Sharma RN, Sharma S, editors. *Sahasrayogam*, *Kashaya prakaranam*, *Chaukhamba Sanskrit Pratishthan*, Delhi: 2007. p. 4.
- Sharma RN, Sharma S, editors. *Sahasrayogam*, *Ghrita Prakaranam*, *Chaukhamba Sanskrit Pratishthan*, Delhi: 2007. p. 42.
- Sharma RN, Sharma S, editors. *Sahasrayogam*, *Leha Prakaranam*, *Chaukhamba Sanskrit Pratishthan*, Delhi: 2007. p. 204.
- Sharma RN, Sharma S, editors. *Sahasrayogam*, *Taila Prakaranam*, *Chaukhamba Sanskrit Pratishthan*, Delhi: 2007. p. 90.
- Tripathi B, editor. (1st ed) *Charaka samhita of Agnivesha*, *Siddhi sthana*, *Uttara vasti siddhi*, chapter 12, verse 15, *Chaukhambha Surabharti Prakashan*, Varanasi: 2005. p. 1324.
- Tripathi B, editor. (1st ed) *Charaka samhita of Agnivesha*, *Sutra sthana*, *Swedadhyaayam*, chapter 14, verse 41, *Chaukhambha Surabharti Prakashan*, Varanasi: 2005. p. 295.
- Tripathi B, editor. (1st ed) *Charaka samhita of Agnivesha*, *Sutra sthana*, *Swedadhyaayam*, chapter

- 14, verse 37, Chaukhambha Surabharti Prakashan, Varanasi: 2005. p. 294.
13. Shastri V, editor. (1st ed) Sharangadhara Samhita of Sharangadhara, Madhyama khanda, Gutika prakarana, chapter 7, verse 70, Chaukhambha Orientalia, Varanasi: 2006. p. 203.
14. Anonymous. (1st ed) Ayurveda Pharmacopoeia compiled by Gujarat State Bhashaja Samiti, Health Department, Gujarat state. 1966. p. 521.
15. Tripathi B, editor. (1st ed) Charaka samhita of Agnivesha, Chikitsa sthana, Jwara Chikitsa, chapter 3, verse 202, Chaukhambha Surabharti Prakashan, Varanasi: 2005. p. 186.
16. Shastri V, editor. (1st ed) Sharangadhara Samhita of Sharangadhara, Madhyama khanda, Kwatha kalpana, chapter 2, verse 118, Chaukhambha Orientalia, Varanasi: 2006. p. 159.
17. Sharma RN, Sharma S, editors. Sahasrayogam, Kashaya Prakaranam, Chaukhambha Sanskrit Pratishthan, Delhi:2007. p. 33.
18. Tripathi B, editor. (1st ed) Charaka samhita of Agnivesha, Chikitsa sthana, Vata shonita chikitsa, chapter 29, verse 158, Chaukhambha Surabharti Prakashan, Varanasi: 2005. p. 1007.
19. Sharma A, editor. Sushruta samhita of Sushruta, Sutra sthana, Jalaukavacharaneeyam, chapter 13, verse 19, Chaukhambha Surabharti Prakashan, Varanasi: 2004. p. 97.
20. Gokhale B, Chikitsa Pradeepa, Dhanvantari Pratishthan, Pune: 1989. p. 137.



Management of Frozen Shoulder in Diabetics through Panchakarma

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ABSTRACT

Keywords:

Apabahuka,
Case report,
Diabetes,
Frozen shoulder,
Panchakarma,
Udvaartana,
Vasti

Diabetes is having a steep rise in prevalence and is on the way to take shape of a global epidemic, mostly associated with improper diet and lifestyle. Musculoskeletal problems are common in diabetics but are not so well-known as compared to other complications of the disease. Frozen Shoulder, one such musculoskeletal problem, is estimated to affect diabetic patients five times more as compared to non-diabetics, resulting in pain and limited range of movement and is compared to *Apabahuka* in Ayurveda. Conventional treatment modalities like analgesics, NSAIDs, steroids and surgery etc have certain limitations. Hence, alternatives are being searched from other systems of medicines. A 64 years old female patient, presented with pain and restricted movements of left shoulder joint; was treated with *Udvaartana* followed by local *Swedana* with *Jambeera pinda* and *Panchatikta panchaprasritika vasti* for five five days. After completion of therapy, pain was subsided and satisfactory improvement was found in the shoulder joint movements. *Panchakarma* in the form of *Basti* regimen and external therapies is surely a result oriented therapy in the management of Diabetes and such complications like Frozen shoulder. *Panchakarma* in the form of external therapies and *Vasti* regimen is a result oriented therapy in the management of Frozen Shoulder and also effective in Diabetes.

Introduction: Diabetes has emerged as one of the most common non-communicable diseases globally and it is threatening to be the most challenging health problem of this century. Complications from diabetes, such as coronary artery disease and peripheral vascular disease, diabetic neuropathy, diabetic nephropathy

etc are resulting in increasing disability, reduced life expectancy and enormous health cost for every society.

Among them muscle cramps, muscle infarction, neuropathic joints, carpal tunnel syndrome, tenosynovitis, diffuse idiopathic skeletal hyperostosis, dupuytren's contracture and adhesive capsulitis are commonly seen. Among these, Adhesive Capsulitis of Shoulder also known as Frozen Shoulder is the most common manifestation, that affects diabetic patients five times more as compared to non-diabetics.^[1] Hence, high blood sugar is a big risk factor for the development of

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frozen shoulder. Studies reported increased prevalence of frozen shoulder in diabetic patients (26.25%), comparatively more in non dominant shoulders of females with type II DM.^[2]

Primary pathology in frozen shoulder is within the glenohumeral joint capsule which becomes adherent to the humerus head, resulting in pain and limited range of movements. Pain mostly worsens at night and there is progressive loss of passive range of movement (PROM) and active range of movement (AROM). It predominantly occurs unilaterally but both shoulders may get affected in about 10-20% of cases.^[3] Other Risk factors include female sex, older age, shoulder trauma, surgery, parkinsons disease,^[4] increased body mass index, cardiovascular and thyroid disorders etc.^[5-9] Clinically, frozen shoulder develops in three symptom-related phases; first one is freezing or painful phase characterized by insidious onset of pain, which gradually increases in intensity with gradual PROM & AROM. It lasts for few weeks to nine months followed by frozen or adhesive phase of about four to nine months and finally thawing or recovery phase in which resolution starts with the gradual returning of shoulder joint to almost normalcy in six to twenty four or more months.

Sign and symptoms of frozen shoulder have resemblance with *Apabahuka* described in Ayurveda, which is a condition of deranged *Vata* and *Kapha*.^[10] Hence *Vata kapha* pacifying management was planned in the present case study.

Though it is a self limiting condition, but recovery process is quite slow, which hampers daily routine of patients leading to frustration at times. Modern science uses treatment options like Analgesics, Non Steroidal Anti-inflammatory Drugs, Steroids, Physiotherapy & Surgery etc in the management which are not satisfactory and are known to develop adverse effects too. Hence, alternatives are being searched from other systems of medicines. In this attempt, a patient presenting with symptoms of frozen shoulder was managed with Ayurveda principles.

Case report: A 64 years aged female patient, visited OPD of Panchakarma, Institute for Post Graduate Teaching and Research in Ayurveda, Gujarat Ayurved University,

Jamnagar with complaints of pain, stiffness and restricted movements at left shoulder joint since 8 months. The pain was dull initially, gradually increased in severity, specially exacerbating at night (around 2 or 3 am). Pain usually was aggravating with movements of shoulder and was being relieved after intake of analgesics or with hot fomentation. Gradually the condition was worsened and the majority of shoulder joint movements were restricted. Routine activities including combing hair, bathing etc badly affected.

Patient had regular bowel and bladder habits. Appetite was slightly reduced and sleep was altered due to shoulder pain and stiffness. Detailed examination following *Ashta vidha* and *Dasha vidha pareeksha* was done.^[11-12]

The patient was a known diabetic, hypertensive and was on anti-hypertensive drugs (Amlodipine 5 mg + Atenolol 50 mg once daily, Losartan 50 mg twice daily), hypoglycemic drugs (Glimepiride twice daily) and analgesics (Tramadol SOS). Besides medicines, patient also attended physiotherapy sessions for six months.

Blood pressure (138/86 mm of Hg), pulse (80/min) and respiratory rate (22/min) were within the physiological limits. Respiratory system examination revealed bilateral adequate air entry with no added sounds. Cardio vascular system revealed normal audible S1, S2. Abdomen was soft with no tenderness, no organomegaly or no lump. All the movements at left shoulder joint were limited both actively and passively.

Investigations: Routine haematological, urine and biochemical investigations were carried out to exclude other pathology and to know the underlying cause, which were within normal limits except blood sugar level i.e. fasting & post prandial blood sugar levels were 232 mg/dl and 189 mg/dl respectively. Radiograph of left shoulder joint (AP view) showed normal study.

Treatment protocol: After assessing the *Dosha* (*Vata-kapha*), *Aushadha* (*Tikta*, *Ushna*, *Teekshana*), *Desha* (*Jangala*), *Kala* (*Sheeta*), *Satmya* (*Madhyama*), *Satva* (*Madhyama*), *Agni* (*Manda*), *Vaya* (old age) and *Bala* (*Madhyama*),^[13] local *Udvardana* was done for five days, which was followed by *Jambeera Pinda Sweda* along with *Panchatikta*

panchprasritika vasti for the next five days.^[14] Patient was advised to take lukewarm water during the procedure. Total duration of the study was 10 days. No oral drugs were administered during this study period, while

conventional anti-hypertensive and anti-diabetic drugs taking earlier were continued. Brief details of drugs used in the treatment are mentioned at Table 1.

Table 1: Treatment Protocol

| Procedure | Ingredients | Duration |
|--|--|--------------------|
| <i>Udvardana</i> | <i>Yava choorna</i> (powder of <i>Hordeum vulgare</i> Linn.) - 100 g <i>Triphala choorna</i> - 20 g | First to Fifth Day |
| <i>Jambeera pinda sweda</i> | Four <i>Jambeera</i> (<i>Citrus medica</i> Linn.) of medium size <i>Haridra choorna</i> (powder of <i>Curcuma longa</i> Linn.) - 5 g <i>Saindhava lavana</i> (Rock salt powder) - 10 g | |
| <i>Panchatikta pancha prasritika vasti</i> | Kwatha dravya: 400 ml of <i>Patola</i> (<i>Trichoxanthes dioica</i> Roxb.), <i>Nimba</i> (<i>Azadirachta indica</i> A. Juss.) <i>Bhunimba</i> (<i>Andrographis paniculata</i> Nees.), <i>Rasna</i> (<i>Pluchea lanceolata</i> Oliver & Hiern.), <i>Saptaparna</i> (<i>Alstonia scholaris</i> (Linn.) R. Br.) Kalka Dravya: 20 g of <i>Sarshapa</i> (<i>Brassica campestris</i> Linn.) Sneha: 100 ml of <i>Go-ghrita</i> | Sixth to Tenth Day |

Assessment criteria: Visual Analogue Scale (VAS), Stiffness, Range of movements using Goniometer and Blood sugar were assessed before and after treatment (Fig 1 and Table 2).

Figure 1: Visual Analogue Scale

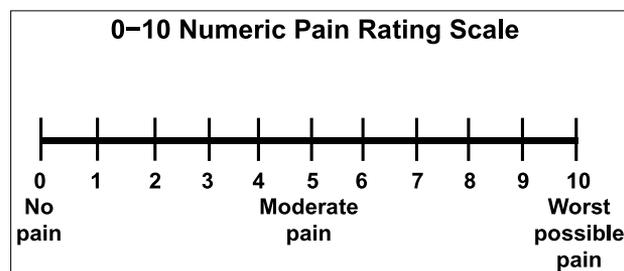


Table 2: Gradation of Stiffness

| Stiffness | |
|-----------|---|
| 0 | No Stiffness |
| 1 | Stiffness; no medication |
| 2 | Stiffness, relieved by external application |
| 3 | Stiffness, relieved by oral medication |
| 4 | Stiffness, not responded by medicine |

Observations and Results: Satisfactory improvement in overall functional status after ten days treatment was observed. No analgesics were needed by the patient during the treatment period and one month of follow up. No untoward effects were noticed during the whole procedure. Pain and stiffness were relieved completely by the end of treatment (Table 3) with significant improvement in the range of shoulder movements (Figure 1 and Table 4). FBS and PPBS came down to 168 mg/dl and 93 mg/dl from 232 mg/dl and 189 mg/dl respectively. No aggravation in pain or stiffness was reported by the patient during follow up period of about one month after completion of therapy.

Table 3: Effect of therapy on VAS, Stiffness and Weight

| | Before treatment | After treatment | After Follow up |
|-----------|------------------|-----------------|-----------------|
| VAS | 6 | 0 | 0 |
| Stiffness | 3 | 0 | 0 |
| Weight | 55 kg | 54 kg | 54 kg |

Table 4: Effect of Therapy on Range of Movement

| | | F | E | Ab | IR | ER |
|-------|----|------|-----|------|-----|-----|
| Left | BT | 55° | 30° | 55° | 50° | 30° |
| | AT | 110° | 50° | 115° | 90° | 60° |
| Right | BT | 135° | 45° | 110° | 90° | 65° |
| | AT | 135° | 45° | 110° | 90° | 65° |

F=Flexion, E=Extension, Ab=Abduction, ER=External Rotation

Discussion: Most of the complications of DM usually intervene with various functions of visceral organs. But, excess sugar in the blood stream seems to cause other problems also like musculoskeletal complications, out of which Frozen Shoulder is most common. Glucose molecules can adhere to collagen and make it sticky. Collagen is a major building block in the ligaments that holds the bones together in a joint. In Diabetics, this adhesion due to extra sugar molecules in blood stream can contribute to abnormal deposits of collagen in the cartilage and tendons of the shoulder, which causes stiffness of the affected shoulder and restricts its movements.^[15]

In addition, poor perfusion leads to abnormal collagen repair and degenerative changes. The theory is that platelet derived growth factor is released from abnormal or ischemic blood vessels, which will then act as a stimulus to local myofibroblast proliferation.^[16]

The pathology of frozen shoulder includes a chronic inflammatory response with fibroblastic proliferation, which may be immuno-modulated. Characteristically, pain precedes stiffness in frozen shoulder, which suggests an evolution from inflammation to fibrosis. These clinical and macroscopic features support the pathological findings of both inflammation and fibrosis.^[17] That is why *Udvardana* was planned to reduce inflammation followed by *Jambeera pinda sweda* to act on fibrosis owing to its *Snigdha*, *Amla* and *Ushna guna*. Moreover, *Swedana* enhances local microcirculation, by increasing the blood circulation rate of peripheral arterioles, delivering higher level of oxygen and nutrients to the injured cells.

Prameha has been mentioned as *Santarpanotha vyadhi*

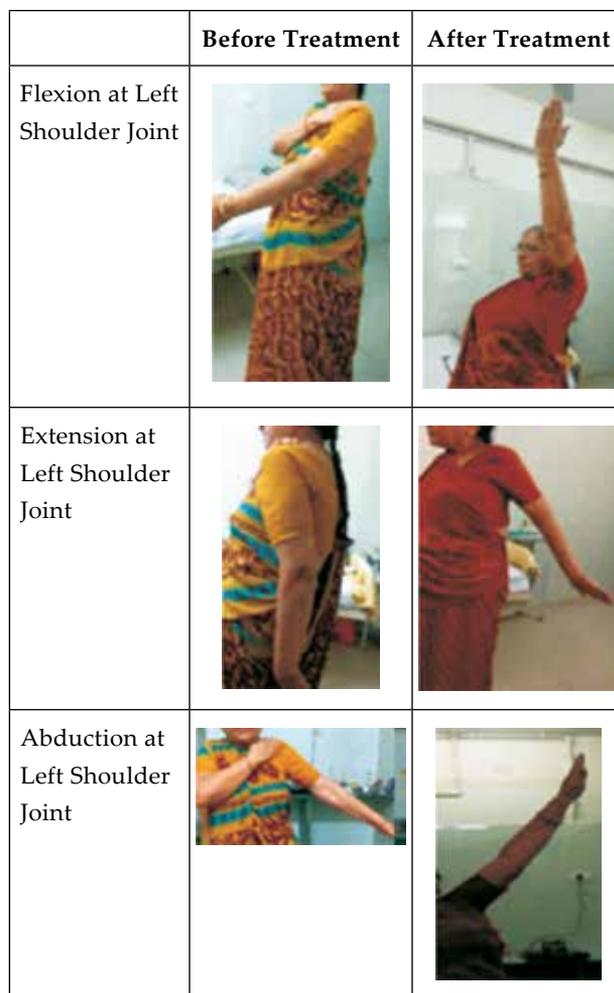


Figure 1: Improvement of the shoulder movements before and after therapy

and *Virukshana kriya*, *Udvardana* has been indicated in its management.^[18-19] So due to *Rukshana kriya*, excess *Kleda* in *Pramehi* may get absorbed due to opposite *Guna*. This may also cause reduction in viscosity due to increased sugar molecules attached to collagen. Thus, this could be helpful in reducing pain, stiffness and improving the range of shoulder movements.

Apabahuka is having *Vata kapha dosha* dominancy,^[20] after mobilization of dried *Kapha* and *Shoshana* of *Kleda* by *Udvardana*; dominancy of *Vata dosha* remains to be dealt with. Besides this, chronicity of the disease also leads to *Vata prakopa* up to some extent, for which *Jambeera pinda sweda* was applied, which is supposed to pacify *Vata dosha* due to its *Amla*, *Lavana*, *Snigdha* and *Ushna guna*.

Though *Vasti* is not a choice of treatment for *Prameha*;

Asthapana vasti can be administered.^[21] However, *Panchatikta pancha prasritika vasti* finds a special mention for *Prameha*.^[22]

The *Rasa panchaka* of the ingredients of *Vasti* possess mainly *Snigdha*, *Ushna guna*, *Ushna virya* and *Kapha vataghna* effects,^[23] which would be helpful in pacifying the *Vata kapha dosha* involved in the *Samprapti* of *Apabahuka*. Besides this, *Tikta rasa* is supposed to have direct effect on *Asthi dhatu*.^[24]

Pharmacological properties of *Vasti* drugs exhibit Hypoglycaemic, Hypotensive, Anti-inflammatory, Analgesic, Diuretic, Immuno-stimulant and Anti-oxidative effects (Table 5). Hence, the hypoglycemic effect found after *Vasti* regimen in the biochemical reports and the analgesic effect may be attributed to these properties of drugs.

Table 5: Pharmacological properties of ingredients of Panchatikta Panchaprasritika Vasti

| Ingredient | Properties |
|-------------------|---|
| <i>Patola</i> | Hypoglycaemic ^[25] |
| <i>Nimba</i> | Hypoglycaemic, Hypotensive, Analgesic, Sedative, Anti-inflammatory, Diuretic ^[26] |
| <i>Bhunimba</i> | Anti-hyperglycaemic, Anti-inflammatory, Immuno-stimulant, Hypotensive, Analgesic, Antioxidant ^[27] |
| <i>Rasna</i> | Analgesic, Anti-inflammatory ^[28] |
| <i>Saptaparna</i> | Hypotensive ^[29] |
| <i>Sarshapa</i> | Anti-inflammatory, Anti-oxidant ^[30] |

Conclusion: Though, Frozen Shoulder is a self limiting disease, Ayurvedic treatment modalities can shorten the recovery time. *Rukshana kriya* like *Udvaartana* followed by *Jambeera pinda sweda* can be helpful in reducing pain, stiffness and improving the range of shoulder movement in frozen shoulder. *Panchatikta panchaprasritika vasti* is effective in reducing the blood sugar level and improving the quality of life of diabetics. Thus, *Udvaartana* followed by *Jambeera pinda sweda* along with *Panchatikta panchaprasritika vasti* is found effective in the management of frozen shoulder associated with

diabetes. To further establish this treatment protocol in frozen shoulder, a study involving larger sample size is needed.

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Conflicts of interest: None declared

References:

- Zreik NH, Malik RA, Charalambos CP. Adhesive capsulitis of the shoulder and diabetes: a meta-analysis of prevalence. *Muscle, Ligaments and Tendons Journal*. 2016; 6(1): 26-34.
- Pooja DP, Deshpande P, Ranade P. Prevalence of adhesive capsulitis in diabetic patients - an observational study. *Sinhgad e-Journal of Physiotherapy*. 2015; 1(1): 8-10.
- Pandey S, Pandey AK. *Clinical orthopaedics diagnosis, shoulder joint*, 3rd edition, Jaypee brothers medical publishers; 2009; 123.
- Riley D, Lang AE, Blair RD, Birnbaum A, Reid B. Frozen shoulder and other shoulder disturbances in Parkinson's disease. *Journal of Neurology, Neurosurgery & Psychiatry*, 1989; 52(1): 63-66.
- Milgrom C, Novack V, Weil Y, Radeva-Petrova DR. et al., Risk factors for idiopathic frozen shoulder. *Israel Medicine Association Journal*. 2008; 10(5): 361-364.
- Wohlgethan JR. Frozen shoulder in hyperthyroidism. *Arthritis & Rheumatology*, 1987; 30(8): 936-939.
- Bowman C, Jeffcoate WJ, Pattrick M, Doherty M. Bilateral adhesive capsulitis, oligoarthritis and proximal myopathy as presentation of hypothyroidism. *British Journal of Rheumatology* 1988 Oct; 27(1): 62-64.
- Li W, Lu N, Xu H, Wang H, et al. Case control study of risk factors for frozen shoulder in China. *International Journal of Rheumatic Diseases*. 2015; 18(5): 508-513.
- <http://www.mayoclinic.org/diseases-conditions/frozen-shoulder/basics/risk-factors/con-20022510> last accessed on Mar 10, 2015 at 15.25.
- Acharya YT, editor. *Sushruta Samhita of Sushruta*,

- Nidana sthana, Jwara Chikitsa, chapter 1, verse 82, Chaukhambha Orientalia; Varanasi: reprint 2014. p. 269.
11. Tripathi I, Tripathi DS, editors. (3rd ed) Yogaratnakara, Roginam ashtasthana pariksha, verse 1, Chaukhambha Krishnadas Academy; Varanasi: 2011. p. 4.
 12. Acharya YT, editor. Charaka samhita of Agnivesha, Vimana sthana, Roga bhishagjitiya, chapter 8, verse 94, Chaukhambha Orientalia; Varanasi: reprint 2011. p. 276.
 13. Acharya YT, editor. Charaka samhita of Agnivesha, Siddhi sthana, Bastisutriyam, chapter 3, verse 6, Chaukhambha Orientalia; Varanasi: reprint 2011. p. 691.
 14. Acharya YT, editor. Charaka samhita of Agnivesha, Siddhi sthana, Prasritayogiyam, chapter 8, verse 8, Chaukhambha Orientalia; Varanasi: reprint 2011. p. 713.
 15. <http://www.healthline.com/diabetesmine/the-411-on-diabetes-frozen-shoulder> last accessed on Dec 7, 2011 at 15.45.
 16. Ronald Grisanti. Frozen Shoulder: The Diabetic Connection. American Chiropractic Magazine. 2010;32(5).
 17. Hand GC, Athanasou NA, Matthews T, Carr AJ. The pathology of frozen shoulder. The Journal of Bone & Joint Surgery. 2007; 89(7): 928-932.
 18. Acharya YT, editor. Charaka samhita of Agnivesha, Sutra sthana, Santarpaniyam, chapter 23, verse 5, Chaukhambha Orientalia; Varanasi: reprint 2011. p. 122.
 19. Acharya YT, editor. Charaka samhita of Agnivesha, Chikitsa sthana, Prameha Chikitsa, chapter 6, verse 50, Chaukhambha Orientalia; Varanasi: reprint 2011. p. 448.
 20. Acharya YT, editor. Commentary Nibandha sangraha of Dalhana on Sushruta Samhita of Sushruta, Nidana Sthana; Vatavyadhi, chapter 1, verse 82. Chaukhambha Orientalia; Varanasi: Reprint 2014. p. 269.
 21. Acharya YT, editor. Sushruta Samhita of Sushruta, Chikitsa Sthana; Netra basti pramana pravibhagam, chapter 35, verse 22, Chaukhambha Orientalia; Varanasi: 2014. p. 527.
 22. Acharya YT, editor. Charaka samhita of Agnivesha, Siddhi sthana, Prasrita yogiyam, chapter 8, verse 8, Chaukhambha Orientalia; Varanasi: reprint 2011. p. 713.
 23. Sharma PV, Dravya guna Vijnana, Volume II, Chaukhambha Bharati Academy; Varanasi: reprint 2009. p. 39, 149, 152, 544, 697, 702.
 24. Acharya YT, editor. Charaka samhita of Agnivesha, Sutra sthana, Vividhashita pitriyam, chapter 28, verse 27, Chaukhambha Orientalia; Varanasi: reprint 2011. p. 180.
 25. Anonymous. Database on medicinal plants used in Ayurveda, Vol 5, Central Council for Research in Ayurveda and Siddha, Department of ISM & H, Ministry of health & Family welfare, Government of India. 2002. p. 269.
 26. Anonymous. Database on medicinal plants used in Ayurveda, Vol 1, Central Council for Research in Ayurveda and Siddha, Department of ISM & H, Ministry of health & Family welfare, Government of India. 2000. p. 289.
 27. Anonymous. Database on medicinal plants used in Ayurveda, Vol 4, Central Council for Research in Ayurveda and Siddha, Department of ISM & H, Ministry of health & Family welfare, Government of India. 2002. p. 34.
 28. Anonymous. Database on medicinal plants used in Ayurveda, Vol 7, Central Council for Research in Ayurveda and Siddha, Department of ISM & H, Ministry of health & Family welfare, Government of India. 2005. p. 375.
 29. Anonymous. Database on medicinal plants used in Ayurveda, Vol 1, Central Council for Research in Ayurveda and Siddha, Department of ISM & H, Ministry of health & Family welfare, Government of India. 2000. p. 384.
 30. Anonymous. Database on medicinal plants used in Ayurveda, Vol 8, Central Council for Research in Ayurveda and Siddha, Department of ISM & H, Ministry of health & Family welfare, Government of India. 2007. p. 309.

Efficacy of *Triphaladya guggulu* and *Punarnavadi kashaya* in the management of Hypothyroidism

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ABSTRACT

Keywords

Case report,
Hormone replacement
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Punarnavadi kashaya,
Triphaladya guggulu

Changed life style of current scenario has provoked several disharmonies in the biological system. Hypothyroidism is one such manifestation, which is believed to be a common health issue in India. The pathogenesis of Hypothyroidism according to Ayurveda is basically due to the abnormal functioning of *Agni*, which in turn affects *Dhatwagni*, eventually brings out pathological sequence and ultimately the disease condition develops. This condition can be managed by Ayurveda principles. A diagnosed case of Hypothyroidism presenting with puffiness of face and eyelids, weakness, lethargy, fatigue, prolonged intermenstrual period, dry and coarse skin, was managed with *Triphaladya guggulu* (1000 mg twice a day) and *Punarnavadi kashaya* (50 ml twice a day) for a period of 45 days. Thyroxine (100 mcg) that was being used by the patient since one year was withdrawn one week before starting the treatment. Serum TSH levels were reduced from 93.250 μ IU/ml to 53.701 μ IU/ml by the end of treatment. *Triphaladya guggulu* and *Punarnavadi kashaya* are beneficial countering signs and symptoms and bringing down the TSH levels. As the observations were drawn from a single case; can be revalidated through well designed clinical trials.

Introduction: Hypothyroidism is one of the most common and challenging disease conditions in today's era. The prevalence of hypothyroidism in India is around 11%.^[1] Hypothyroidism is a condition in which the thyroid gland does not produce enough Thyroxine (T4) and Tri-iodothyronine (T3).

Iodine deficiency and auto-immunity are the main causes of Hypothyroidism, out of which auto-immunity is common in the areas of iodine replete. There is no promising cure in contemporary systems for Hypothyroidism. The only available treatment is lifelong use of synthetic thyroxine that invites complications in the long run.

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Concept of *Agni* (digestive fire) and *Ama* (unwanted by product of improper digestion) are the central dogma of Ayurvedic therapeutics in general and in particular in the management of auto-immune pathologies. *Agni*, when becomes *Manda* (weak), is unable to metabolize

leading to accumulation of intermediate metabolic by-products in the body at different levels. Such unwanted by-products (sometimes may act as free radicals) becomes toxic and may initiate pathologies of auto-immunity.

As most body cells have receptors for thyroid hormones; T₃ and T₄ exert their effects throughout the body.^[2] These hormones stimulate diverse metabolic activities in most tissues, leading to an increase in basal metabolic rate. Without thyroid hormones, almost all the chemical reactions of the body would become sluggish. These hormones can be considered as a part of *Kayagni* on which the entire metabolic activities depends.^[3] Hence, impaired metabolism can be compared with vitiation of *Agni* according to Ayurveda. Thus, principles that correct the functioning of *Agni* will be beneficial in treating various pathologies. Following these guidelines, a case of Hypothyroidism was managed.

Case report: A 30 years old female suffering with Hypothyroidism attended Panchakarma OPD, Institute for Post Graduate Teaching and Research in Ayurveda, Gujarat Ayurved University, Jamnagar with the complaints of puffiness of face and eyelids, weakness, lethargy, fatigue, prolonged inter menstrual period, dry and coarse skin since one year with elevated levels of Serum TSH (Thyroid Stimulating Hormone). She was under Hormone replacement therapy (Tab Thyroxine 100 mcg OD) since one year. No positive family history was noticed.

The *Prakriti* was found to be *Vata pitta*. Despite of continuous consumption of Thyroxine for one year; she could not get satisfactory relief in the signs and symptoms and approached Ayurveda for better management.

As malfunctioning of *Agni* is considered in the pathogenesis; *Triphaladya guggulu* (1000 mg twice a day) along with *Punarnavadi kashaya* (50 ml twice a day) were chosen in the current case and were administered for a period of 45 days.^[4-5] Composition formulation of these two formulations has been placed at Table 1-2.

Triphaladya guggulu was prepared by dissolving *Triphala shodhita guggulu* in *Kanchanara twak kwatha* until it attained a sticky consistency, followed by addition of powders of *Trikatu* and *Triphala* along with quantity

sufficient honey for making pills of 500 mg size. It was administered in a dose of two pills (1000 mg) twice a day with luke warm water after meal for a period of 45 days.

Table 1: Composition of Triphaladya guggulu

| Drug | Botanical Name | Part used | Quantity |
|-------------------|--|--------------|----------|
| <i>Shunthi</i> | <i>Zingiber officinale</i> Roxb. | Rhizome | 1 Part |
| <i>Pippali</i> | <i>Piper longum</i> Linn. | Fruit | 1 Part |
| <i>Maricha</i> | <i>Piper nigrum</i> Linn. | Fruit | 1 Part |
| <i>Amalaki</i> | <i>Emblica officinale</i> Gaertn. | Pericarp | 1 Part |
| <i>Haritaki</i> | <i>Terminalia chebula</i> Retz. | Pericarp | |
| <i>Bibhitaki</i> | <i>Terminalia belerica</i> Roxb. | Pericarp | |
| <i>Kanchanara</i> | <i>Bauhinia variegata</i> Linn. | Stem bark | 6 Parts |
| <i>Guggulu</i> | <i>Commiphora mukul</i> (Hook ex Stocks) Engl. | Resin | 10 Parts |
| <i>Madhu</i> | Honey | - | Q.S |

Table 2: Composition of Punarnavadi kashaya

| Drug | Botanical Name | Part used | Quantity |
|------------------|--|-----------|----------------------------|
| <i>Punarnava</i> | <i>Boerhavia diffusa</i> Linn. | Root | 1 part |
| <i>Devadaru</i> | <i>Cedrus deodara</i> (Roxb.) Loud. | Stem | 1 part |
| <i>Shunthi</i> | <i>Zingiber officinale</i> Roxb. | Rhizome | 1 part |
| <i>Guggulu</i> | <i>Commiphora mukul</i> (Hook ex Stocks) Engl. | Resin | 1/30 th part |

For preparation of *Punarnavadi kashaya*; patients were advised to add 400 ml potable water to 25 g of coarse powder of the ingredients and reduce to 50 ml and consume on empty stomach twice daily for a period of 45 days.

Along with the oral medication, *Pathya* and *Apathya ahara* and *Vihara* (wholesome and unwholesome diet and lifestyle) were also advised to the patient. She was asked to consume luke warm water in place of normal / cold water during the treatment period. In addition, was advised to avoid consuming diet that is difficult to digest; consuming diet before complete digestion of earlier diet; frequent and excessive intake of curd and day sleep. Thyroxine (100 mcg) that was being used by the patient was withdrawn one week before starting the treatment. Tests for thyroid profiles were conducted and the patient was assessed on subjective parameters before starting the treatment and after 45 days of treatment.

Assessment criteria: Improvement was assessed on the basis of percentage relief observed in the presenting complaints. Grading criterion being followed in the institute was adopted to assess the effectiveness of the therapy.^[6] (Table 3).

Table 3: Grading criteria

| | |
|--|---|
| a) Puffiness | |
| Absent | 0 |
| Occasional | 1 |
| Peri-orbital edema in the morning, relieved later | 2 |
| Persistent | 3 |
| b) Weakness | |
| Able to exercise without difficulty | 0 |
| Able to do mild exercise | 1 |
| Able to do only mild work | 2 |
| Able to do mild work with difficulty | 3 |
| Not able to do even mild work | 4 |
| Unable to do even day to day routine work | 5 |
| c) Lethargy | |
| Doing work satisfactorily with proper vigor in time | 0 |
| Doing work without desire but in time | 1 |
| Doing work without desire, unsatisfactorily, with lot of mental pressure & not in time | 2 |

| | | |
|--|--------------------|----------------------------|
| Not starting any work in his/her own responsibility, doing little work very slow | 3 | |
| Does not have any initiation & not want to work even after pressure | 4 | |
| d) Fatigue | | |
| Normal | 0 | |
| Patient likes to stand in comparison to walk | 1 | |
| Patient likes sit in comparison to stand | 2 | |
| Patient likes to lie down in comparison with sitting | 3 | |
| Patient likes to sleep in comparison with lying down | 4 | |
| e) Muscle ache | | |
| No | 0 | |
| Relieved by rest | 1 | |
| Not relieved by rest. Relieved by external application | 2 | |
| Requires external application and internal medication | 3 | |
| Present consistently | 4 | |
| f) Dry and coarse skin | | |
| No dryness | 0 | |
| Dryness after bath only | 1 | |
| Dryness over all body but relieved by oil application | 2 | |
| Dryness not even relieved by oil application | 3 | |
| g) Interval between two cycles | | |
| 25-29 days | 0 | |
| 35-39 days | 1 | |
| 40-45 days | 2 | |
| >45 days | 3 | |
| h) Constipation | | |
| Frequency | Consistency | Straining |
| Once a day - 0 | Shithila - 0 | No - 0 |
| Once in two days - 1 | Madhyama - 1 | Occasionally Bearable - 1, |
| Once in three days - 2 | Kathina - 2 | Frequently, Severe - 2 |
| Once in more than three days - 3 | Granthil - 3 | |

Observations and Results: Considerable improvement was noticed in complaints as placed at Table 4.

Discussion: Thyroid hormones stimulate diverse metabolic activities in most tissues, leading to an increase in basal metabolic rate, may be playing the role of *Kayagni*, which possess its *Amshas* (components) and influence all over the body.^[7] A role of the gut bacteria is to assist in converting inactive T_4 into the active form of thyroid hormone T_3 . About 20% of T_4 is converted to T_3 in the gastrointestinal tract, in the form of T_3 sulfate (T_3S) and tri-iodoacetic acid (T_3AC). The conversion of T_3S and T_3AC into active T_3 requires an enzyme called Intestinal sulfatase. This intestinal sulfatase is released from healthy gut bacteria. Intestinal dysbiosis, an imbalance between pathogenic and beneficial bacteria in the gut, significantly reduces the conversion of T_3S and T_3AC to T_3 .^[8] All of these connections make it clear that one can't have a healthy thyroid without a healthy gut and vice versa. Fixing the gut is the foremost step to achieve a healthy thyroid.

Table 4: Effect of therapy on chief complaints

| Complaints | Before Treatment | After Treatment |
|-----------------------------------|------------------|-----------------|
| Weight (kg) | 60 | 56 |
| Puffiness of face and eyelids | 3 | 0 |
| Weakness | 3 | 1 |
| Lethargy | 3 | 0 |
| Fatigue | 2 | 0 |
| Constipation | 2 | 0 |
| Muscle ache | 1 | 0 |
| Dry and coarse skin | 1 | 0 |
| Interval between menstrual cycles | 3 | 0 |

Ingredients of *Punarnavadi kashaya* exert diverse activities. *Punarnava* (*Boerhaavia diffusa* Linn.) owing to its *Shothahara* property is an excellent remedy for treating generalized oedematous condition and its roots are

reputed to be diuretic and laxative.^[9-10] *Devadaru* is *Kapha vata shamaka* and acts as *Deepana pachana* in addition to its immunomodulatory and anti-inflammatory activity.^[11-12] *Shunthi* has *Agni deepana* property.^[13]

Triphladya guggulu is especially indicated for the management of *Gandamala*. Acharya Sushruta has indicated *Guggulu* in *Shotha*^[14] that is one of the most commonly observed clinical manifestation in cases of hypothyroidism. It acts on *Medo vaha srotas* and does *Lekhana karma* (desiccation), thus might be helpful in managing obesity which is a common presentation of hypothyroidism. It also possess anti-inflammatory property.^[15] Animal studies have reported a ketosteroid isolated from oleoresin of *Guggulu* showed a strong thyroid stimulatory action.^[16] It is also found to have anti-oxidant effect because of *Guggulsterone* that counters oxygen free radicals.^[17] *Kanchanara* possesses anti-oxidant, anti-inflammatory, and immuno-modulatory activities.^[18]

Agnimandya (impaired digestive functions) is the causative factor as well as one of the consequences of Hypothyroidism. It leads to the formation of *Ama*, which initiates auto-immune responses in the body. *Trikatu* through its *Deepana* properties,^[19] help in maintaining *Agni*, thus preventing further formation of *Ama*.

Triphala supports healthy digestion and absorption.^[20] It is a powerful antioxidant, protect cells from the damage of free radicals.^[20] Constipation, a symptom in Hypothyroidism, can impair hormone clearance and can elevate oestrogen levels, which in turn raises thyroid binding globulin levels and decrease the levels of thyroid hormones in the body.^[8] *Triphala* can prove to be beneficial in avoiding constipation, thus help in maintaining physiological levels of thyroid hormones.

Vitamin-C is an active component of *Devadaru* and *Amalaki*.^[21-22] Studies have shown that natural antioxidants such as vitamin-C can reverse thyroid damage by optimizing functions of thyroid.^[23] Thyroid gland need Vitamin-C to keep it healthy.^[24] Effect of therapy on Thyroid profile also validates the role of *Agni* and vitamin-C (Table 5).

Table 5: Effect of therapy on Thyroid Profile

| Investigations | | Before Treatment | After Treatment |
|-----------------|----------------|------------------|-----------------|
| Thyroid profile | TSH | 93.250 µIU/ml | 53.701 µIU/ml |
| | T ₃ | 0.68 ng/ml | 0.49 ng/ml |
| | T ₄ | 2.550 ng/dl | 1.868 ng/dl |

As Hypothyroidism is caused due to the malfunctioning of *Agni* and *Ama*; and the ingredients of trial drugs helps in repairing them; *Samata* (association with *Ama*) and *Strotorodha* (obstruction in channels) might have got cleared that pacified symptoms of Hypothyroidism by maintaining physiological thyroid profiles.

Improved *Agni* might have helped in optimizing the function of thyroid gland thus yielding positive results not only in the subjective parameters, but also on the objective parameters of Hypothyroidism.

Conclusion: This was a single case study that validated the efficacy of *Triphaladya guggulu* and *Punarnavadi kashaya* in the management of Hypothyroidism. Though Thyroxine was discontinued, the symptoms were under control with the current trial drugs. As the observations are encouraging, there is a need to evaluate actual impact of the trial drugs in larger number of patients and draw more concrete conclusions. Awareness regarding Ayurveda is to be drawn among the masses so that a maximum number of sufferers can utilize the services and have the benefit of an enhanced quality of life.

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Conflicts of interest: None declared.

References:

1. [http://www.thelancet.com/journals/landia/article/PIIS2213-8587\(14\)70208-6/fulltext](http://www.thelancet.com/journals/landia/article/PIIS2213-8587(14)70208-6/fulltext) last accessed on June 2, 2017 at 2.49 PM.
2. Tortora GJ, Derrickson Bryan. Principles of Anatomy and Physiology. India edition: John Wiley and Sons; 2014; Chapter 18; 582.
3. Srinivasulu M. Concept of Ama in Ayurveda. 2nd revised ed. Chapter 2, Chowkhamba Sanskrit Series, Varanasi: 2010. p. 25-26.
4. Shastri LP, editor, Yogratnakara, Gandamala apachi Chikitsa, verse 1-2, Chaukhambha Prakashan, Varanasi: reprint 2013. p. 150.
5. Sharma S, editor. Chakradatta of Chakrapani, Shotha Chikitsa, verse 10, Meherchand lachmidas publications, New Delhi: 2007. p. 254.
6. Mridul R, Thakar A. A comparative clinical study of Vamana and Virechana Karma along with Shamana therapy in the management of Hypothyroidism. Department of Panchakarma, IPGT & RA, Thesis submitted to Gujarat Ayurved University, Jamnagar, 2016.
7. Srinivasulu M. Concept of Ama in Ayurveda. 2nd revised ed. Chapter 2, Chowkhamba Sanskrit Series, Varanasi: 2010. p. 11.
8. <https://chriskresser.com/the-thyroid-gut-connection/> last accessed on Dec 12, 2016 at 3.08 PM.
9. Sharma PC, Yelne MB, Dennis TJ. Database on Medicinal Plants used in Ayurveda. Volume 1, Central Council for Research in Ayurvedic Sciences, Ministry of Health and Family Welfare, Government of India. Reprint 2002: p. 361.
10. Mahesh AR, Kumar H, Ranganath MK, Devkar RA. Detail study on Boerhavia Diffusa plant for its medicinal importance - a review. Res J Pharm Sci. 2012; 1(1): 28-36.
11. Billore KV, Yelne MB, Dennis TJ, Chaudhari BG. Database on Medicinal Plants used in Ayurveda Volume 7, Central Council for Research in Ayurvedic Sciences, Ministry of Health and Family Welfare, Government of India. 2005. p. 73
12. Billore KV, Yelne MB, Dennis TJ, Chaudhari BG. Database on Medicinal Plants used in Ayurveda Volume 7, Central Council for Research in Ayurvedic Sciences, Ministry of Health and Family Welfare, Government of India. 2005. p. 75.
13. Padhi MM, Joseph GVR, Selvarajan S, Yelne MD, et al. Database on Medicinal Plants used in Ayurveda Volume 5, Central Council for Research in Ayurvedic Sciences, Ministry of Health and Family Welfare, Government of India. Reprint 2008. p. 316.

14. Shastri AD, editor. Sushruta Samhita of Sushruta, Chikitsa Sthana, Shophya Chikitsa, chapter 23, verse 12, Chaukhamba Sanskrit Sansthana, Varanasi: Reprint 2010; p. 130.
15. Sharma PC, Yelne MB, Dennis TJ. Database on Medicinal Plants used in Ayurveda Volume 2, Central Council for Research in Ayurvedic Sciences, Ministry of Health and Family Welfare, Government of India. Reprint 2005. p. 226.
16. Tripathi YB, Malhotra OP, Tripathi SN. Thyroid stimulating action of Z-guggulsterone obtained from Commiphora mukul. *Planta medica*. 1984; 50(1): 78-80.
17. Sarup P, Bala S, Kamboj S. Pharmacology and Phytochemistry of Oleo-Gum Resin of Commiphora wightii (Guggulu). *Scientifica*. 2015.
18. Chandra TR, Suresh C, Sanghamitra D, Kumar GR. Kanchnara (*Bauhinia variegata* Linn.) - A Critical Review. *International Journal of Ayurveda and Pharma Research*. 2015; 3(7).
19. Shastri AD, editor. Sushruta Samhita of Sushruta, Sutra Sthana, Dravya sangrahaniam, chapter 38, verse 59, Chaukhamba Sanskrit Sansthan, Pune: Reprint 2012. p. 188.
20. <https://www.banyanbotanicals.com/info/ayurvedic-living/living-ayurveda/herbs/triphala/> last accessed on June 2, 2017 at 3.47 PM.
21. Billore KV, Yelne MB, Dennis TJ, Chaudhari BG. Database on Medicinal Plants used in Ayurveda Volume 7, Central Council for Research in Ayurvedic Sciences, Ministry of Health and Family Welfare, Government of India. 2005. p. 74.
22. Sharma PC, Yelne MB, Dennis TJ. Database on Medicinal Plants used in Ayurveda Volume 3, Central Council for Research in Ayurvedic Sciences, Ministry of Health and Family Welfare, Government of India. Reprint 2005. p. 14.
23. <http://www.naturalhealth365.com/thyroid-function-adrenal-fatigue-vitamin-c-1516.html> last accessed on Dec 12, 2016 at 4.01 PM.
24. <http://www.thyroiduk.org.uk/tuk/treatment/vitamins.html> last accessed on Dec 12, 2016 at 4.15 PM.

GENERAL INFORMATION

TYPES OF CASE REPORTS:

Case Reports from the below areas will be considered by the journal.

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