



Clinical Research

Multimodal Ayurvedic management for *Sandhigatavata* (Osteoarthritis of knee joints)

Manisha R. Sharma, Charmi S. Mehta¹, Dipali J. Shukla², Kalapi B. Patel³, Manish V. Patel⁴, Shiv Narayan Gupta⁵

Lecturer, Department of Kaya Chikitsa, Government Ayurved College, Junagadh, ¹Resident Medical Officer, Gulabkunverba Ayurvedic Hospital, Jamnagar, ²Lecturer, Department of Basic Principles, Government Ayurved College, Bhavnagar, ³Reader, Department of Panchakarma, ⁴Lecturer, Department of Kaya Chikitsa, ⁵Professor and Head, Department of Kaya Chikitsa, JS Ayurved Mahavidyalaya, Nadiad, Gujarat, India

Abstract

Vata is the governing factor in the maintenance of equilibrium in the universe as well as in the body. As age advances, the influence of *Vata Dosh*a progresses, resulting in the process of gradual degeneration of the body. *Sandhigatavata* (osteoarthritis) is one of the consequences of this process, which is common in the elderly people. This is one of the major causes of chronic disability, affecting the quality of life. Prevalence of osteoarthritis in India is more among menopausal women. This study has been conducted to evaluate the efficacy of Ayurvedic multimodal management in *Sandhigatavata* and to provide better options to Non-Steroidal Anti-Inflammatory Drugs (NSAIDs). In present clinical trial, 50 patients of *Sandhigatavata* have been registered and have been given *Snehana*, *Svedana*, *Mriduvirechana*, *Matrabasti*, and *Jalaukavacharana*, along with oral medications like *Yogaraja Guggulu* and *Ashvagandha Churna*. This multimodal therapy is being used in P.D. Patel Ayurved Hospital, Nadiad, since years, providing good relief to patients with *Sandhigatavata*. The results have been analyzed statistically by using the Student paired 't' test. The therapy showed highly significant ($P < 0.001$) beneficial effect on the clinical features of *Sandhigatavata*. On overall effect of therapy, 4% of the patients were relieved completely, while 24% have shown marked improvement, 50% moderate improvement, and 22% mild improvement. Results of follow-up showed that marked improvement decreased, but moderate improvement was steady. Continuing the study on a larger number of patients, with inclusion of more objective parameters to get better conclusions is suggested at the end of the study.

Key words: *Matrabasti*, osteoarthritis, *Sandhigatavata*, *Snehana*, *Svedana*, *Upanaha*

Introduction

Physiological functions of the body will be governed by three *Doshas*, that is, *Vata*, *Pitta*, and *Kapha*. Vitiating of these *Doshas* leads in disease manifestation. In old age there is progressive decaying in the body structures resulting in various degenerative disorders including *Sandhigatavata* due to the predominance of *Vata*.^[1] Osteoarthritis^[2] (OA) of modern medical science is considered to be its close equivalent.^[3,4] According to a survey, osteoarthritis tops all the ailments in the country. In India,

the prevalence is more among women, especially menopausal women.^[5] The current pharmacological management of osteoarthritis includes the administration of analgesics and Non Steroidal Anti-Inflammatory Drugs (NSAIDs), but their use neither provides adequate pain relief nor deceleration in disease process. In addition, NSAIDs are associated with adverse effects.^[6,7] Due to which the use of alternative therapies is on the rise. The plan of the treatment in the study is based on the recommendations from classics for the treatment of *Vatavyadhi* (diseases essentially caused by *Vata*). A multimodal therapy in treating a disease is usual Ayurvedic therapy and it is being used in P.D. Patel Ayurved Hospital, Nadiad, since many years, providing good relief to the patients with *Sandhigatavata*. *Yogaraja Guggulu* and *Ashvagandha Churna* have reported to be beneficial in the management of *Sandhigatavata* (OA).^[8] The objective of the present study is to evaluate efficacy of multimodal Ayurvedic management for *Sandhigatavata*.

Address for correspondence: Dr. Manisha R. Sharma, 5, Vikram Bunglows, Opp. Bajarang Ashram, Thakkarbapanagara, Ahmedabad- 382 350, Gujarat, India. E-mail: dr.drmanisha@rediffmail.com

Materials and Methods

Fifty clinically diagnosed patients of *Sandhigatavata*, involving knee joints, were selected from the Outdoor Patient Department (OPD) and hospitalized for a duration of 15 days in the Department of Kaya Chikitsa, in between December 2010 to July 2011. Special clinical proforma was prepared and findings were recorded at regular interval for proper assessment. The enrolled patients were advised to withdraw use of NSAIDs before starting the Ayurvedic management.

The patients were assessed before treatment and after the completion of 15 days of indoor treatment. After completion of indoor treatment, the patients were administered oral medicines. Follow-up with full clinical assessment was done after 15 days and 45 days.

Inclusion criteria

- Individuals between the age group of 30 to 75 years of both genders having clinical features of *Sandhigatavata* as described in Ayurvedic classics,^[9] as well as clinical features of osteoarthritis
- Patients with affection of knee joint, presenting with *Sandhishotha* (swelling over joints), *Sandhishula* (pain in joints), *Sandhigraha* (stiffness in joints), *Sprarshasahatva* (tenderness), and *Sandhisphutna* (crepitus)^[9-12]
- Availability of at least 80% of the clinical features in patients was considered as an inclusion criteria for the present study. Radiology of the affected joints was not carried out because those patients who were included in the study have already been diagnosed radiologically.

Exclusion criteria

- Patients below 30 years and above 75 years of age
- Patients suffering with other forms of arthritis like Rheumatoid Arthritis (RA), psoriatic arthritis, gout, ankylosing spondylitis, infective arthritis, and Systemic Lupus Erythematosus (SLE)
- Patients who had an association with other diseases like diabetes mellitus, hyper or hypothyroidism

Management of the patients

- *Mriduvirechana* (mild purgation) with *Eranda Sneha* (seed oil of *Ricinus communis* Linn.), 30 – 35 ml, according to the *Koshtha*, with warm water, was administered on the third day after admission following *Abhyanga* and *Svedana* for two days. *Koshtha* was assessed on the basis of the patient's bowel habits and sensitivity. Patients of *Mridu Koshtha* were given 30 ml of *Eranda sneha* and patients of *Madhyama* and *Krura Koshtha* were given 35 ml of it. After a rest for one day, the following therapies and medicaments were administered
- *Abhyanga* (oleation therapy) with *Narayana Taila* (*Vata* alleviating medicated oil)^[13] for 11 days.
- *Bashpasvedana* (fomentation therapy with evaporation) with *Nirgundipatra*^[14] (fresh leaves of *Vitex nigundo* Linn.) for 11 days
- *Nirgundipatra Upanaha* was done for 11 days
- *Niruha Basti* (proctocolonic administration of decoction) of *Dashamula Kvatha* (decoction of *Dashamula*) for one day (before lunch following *Abhyanga* and *Svedana*) followed by *Matra Basti* of 40 ml *Narayana*

Taila (immediately after supper) was given for nine days

- *Yogaraja Guggulu*,^[15] 1 g, thrice a day, with warm water
- *Ashvagandha Churna* (root powder of *Withania somnifera* Dunal.) 3 g with warm milk was given in morning and evening before meals
- *Jalaukavacharana* (leech application) was done on the patients on the eleventh day, if pain and stiffness were not relieved after *Snehana*, *Svedana*, *Mriduvirechana*, and *Basti*. This was repeated if required on the fifteenth day.

All formulations like *Narayana Taila*, *Eranda Sneha*, *Dashamula Kvatha*, *Yogaraja Guggulu*, and *Ashvagandha Churna* were prepared as per the standard guidelines under the supervision of the subject experts. Fresh leaves of *Nirgundi* were collected from the medicinal plant garden in the campus.

Pathyapathya (food regimen and behavioral advice)

On the day of *Mriduvirechana*, the patients were kept on semi-liquid recipe containing equal quantity of rice and mung beans in the evening. After this, patients were kept on usual food recommended by classics for the patients of *Vata* related diseases, that is, *Mudgayusha* (mung bean soup), chapatis of wheat flour, boiled vegetables, and rice. They were instructed not to take sour, fermented, or spicy food and to avoid *Atishrama* (heavy work), *Ratrijagarana* (night vigils) and *Divasvapa* (daytime sleep).

Criteria for assessment

The improvement was assessed with regard to the clinical features, on the basis of the scoring system [Tables 1 and 2].

Objective criteria

Improvement in range of movement was assessed before and after treatment with Goniometer.

Statistical analysis

The improvement was assessed on the basis of relief in the clinical features of the disease before and after treatment. The obtained results were analyzed by Students paired 't' test.^[16] The results were interpreted as highly significant if $P < 0.001$ and significant if $P < 0.05$ or $P < 0.01$.

Observations and Results

The demographic data of this study suggested that osteoarthritis is prevalent in 97.22% of the menopausal women [Table 3]. It was observed that highly significant results were found in all clinical features [Table 4]. Highly significant results were found even after 15 days of treatment (first follow-up) with most of the features, while a significant result was found in the symptom of *Sandhisphutana* [Table 5]. It was observed that relief, in percentage, found in patients after 45 days (second follow-up) was almost the same as that taken on the first follow-up [Table 6]. Highly significant relief was found in flexion of the knee joint and significant relief in the extension of the knee joint [Table 7] and after 15 days (first follow-up) [Table 8]. It was observed that extension of the knee joint was improved to 26.88%, in comparison to the first follow-up (21.22%). The improvement in knee flexion

movements was statistically highly significant [Table 9]. It was observed that a minor difference was found in the mean scores of clinical features after 15 days of treatment as indoor patients and in both follow-ups [Figure 1]. *Sprarshasahatva* was relived by 90.56% after 15 days of treatment, while 73.58% relief was

found during follow-up [Figure 2]. It was observed that a minor difference was found in the mean score of range of movement of the knee joint after 15 days and in followup [Figure 3]. It was observed that the percentage of relief in extension of the knee joint was 41.03% after 15 days, which reduced in follow-up [Figure 4]. In the present study, 24% had marked improvement after 15 days of treatment, which reduced by 16% after the first follow-up and by 14% after the second follow-up, while 50% of the patients had moderate improvement after 15 days, which increased by 52% during the period of both follow-up assessments [Figure 5].

Table 1: Subjective criteria

| | |
|---|---|
| Sandhishhula (pain in joints) | |
| No pain | 0 |
| Pain during excessive movement | 1 |
| Pain during little movement | 2 |
| Pain during rest, but tolerable | 3 |
| Continous pain not tolerable | 4 |
| Sandhishotha (swelling over joints) | |
| No swelling | 0 |
| Swelling that can be seen with very careful observation | 1 |
| Swelling that can be obviously observed | 2 |
| Swelling very bulky, which can be observed clearly | 3 |
| Sandhigraha (stiffness in joints) | |
| No stiffness | 0 |
| Stiffness after first waking in the morning | 1 |
| Stiffness up to five minutes after waking, but is relieved after movement | 2 |
| Stiffness continues for five minutes, with difficulty in movement | 3 |
| Stiffness more than 15 minutes | 4 |
| Sprarshasahatva (tenderness) | |
| No tenderness | 0 |
| Pain on deep touch | 1 |
| Pain on superficial touch | 2 |
| Patient does not allow to touch | 3 |
| Sandhisphutana (crepitus) | |
| No crepitus | 0 |
| Palpable crepitus | 1 |
| Audible crepitus | 2 |

Table 2: Overall assessment of therapy

| Overall % relief in all the symptoms | Improvement results |
|--------------------------------------|----------------------|
| 0 | Unchanged |
| 1-25 | Mild improvement |
| 26-50 | Moderate improvement |
| 51-75 | Marked improvement |
| 76-100 | Complete remission |

Table 3: Observations

| Observations | No. of patients | Percentage |
|---------------------|-----------------|------------|
| Age in years | | |
| 30 years | 1 | 2 |
| 40-60 years | 29 | 58 |
| >60 years | 20 | 40 |
| Gender | | |
| Male | 14 | 28 |
| Female | 36 | 72 |

Discussion

In the present study, it is observed that most of the female patients developed *Sandhigatavata* during the menopausal period. This supports estrogen deficiency as a risk of OA.^[17]

In present study, highly significant ($P < 0.001$) effect was found in *Sandhishhula*, *Sandhishotha*, *Sandhigraha*, and *Sandhisphutana* in both knee joints. This also supported

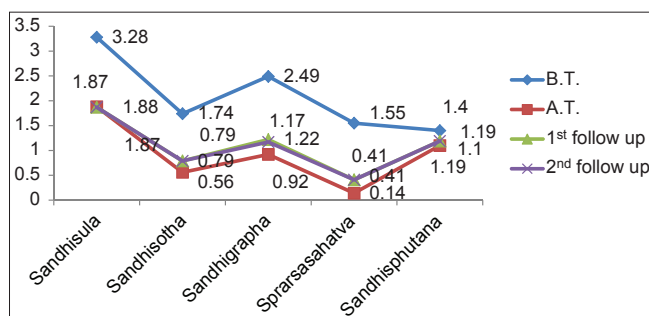


Figure 1: Comparison of mean scores in clinical features (knee joint osteoarthritis)

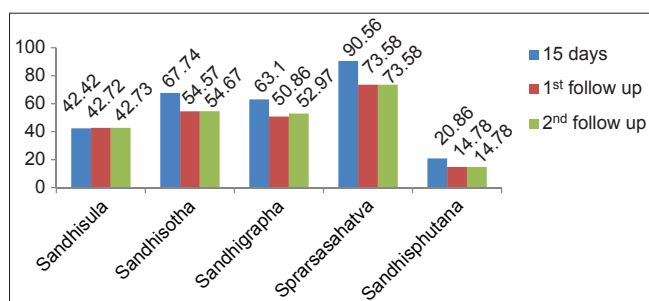


Figure 2: Comparison of percentage improvement in clinical features (knee joint osteoarthritis)

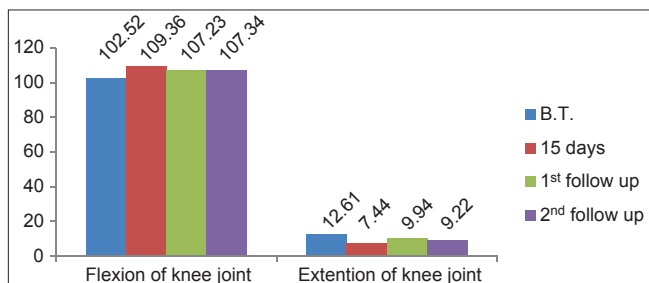


Figure 3: Comparison of mean scores in degree of range of movement of knee joint osteoarthritis

Table 4: Effect of therapy on clinical features after 15 days of indoor treatment

| Complaints | n | Mean scores | | % Relief | t | P |
|-----------------|----|-------------|-----------|------------|------|--------|
| | | BT | AT | | | |
| Sandhishula | 44 | 3.28±0.66 | 1.88±1.00 | 42.42±1.07 | 8.59 | <0.001 |
| Sandhishotha | 24 | 1.74±0.70 | 0.56±0.77 | 67.74±0.82 | 7.05 | <0.001 |
| Sandhigraha | 37 | 2.49±1.14 | 0.92±0.91 | 63.10±1.12 | 8.57 | <0.001 |
| Sprarshasahatva | 17 | 1.55±0.62 | 0.14±0.36 | 90.56±0.66 | 8.74 | <0.001 |
| Sandhisphutana | 41 | 1.40±0.49 | 1.10±0.56 | 20.86±0.48 | 3.85 | <0.001 |

n: Number of patients, BT: Before treatment, AT:After treatment

Table 5: Effect of therapy on clinical features during first follow-up

| Complaints | n | Mean scores | | % Relief | t | P |
|-----------------|----|-------------|-----------|------------|------|--------|
| | | BT | AT | | | |
| Sandhishula | 44 | 3.28±0.66 | 1.87±0.97 | 42.72±1.02 | 9.13 | <0.001 |
| Sandhishotha | 24 | 1.74±0.70 | 0.79±0.90 | 54.57±0.71 | 6.54 | <0.001 |
| Sandhigraha | 37 | 2.49±1.14 | 1.22±1.13 | 50.86±1.08 | 7.13 | <0.001 |
| Sprarshasahatva | 17 | 1.55±0.62 | 0.41±0.56 | 73.58±0.66 | 7.12 | <0.001 |
| Sandhisphutana | 41 | 1.40±0.49 | 1.19±0.51 | 14.78±0.41 | 3.23 | <0.01 |

n: Number of patients, BT: Before treatment, AT:After treatment

Table 6: Effect of therapy on clinical features second follow-up

| Complaints | n | Mean scores | | % Relief | t | P |
|-----------------|----|-------------|-----------|------------|------|--------|
| | | BT | AT | | | |
| Sandhishula | 44 | 3.28±0.66 | 1.87±0.94 | 42.73±0.93 | 9.99 | <0.001 |
| Sandhishotha | 24 | 1.74±0.70 | 0.79±0.88 | 54.67±0.77 | 6.04 | <0.001 |
| Sandhigraha | 37 | 2.49±1.14 | 1.17±1.07 | 52.97±1.06 | 7.13 | <0.001 |
| Sprarshasahatva | 17 | 1.55±0.62 | 0.41±0.56 | 73.58±0.66 | 7.12 | <0.001 |
| Sandhisphutana | 41 | 1.40±0.49 | 1.19±0.51 | 14.78±0.41 | 3.23 | <0.01 |

n: Number of patients, BT: Before treatment, AT:After treatment

Table 7: Effect of therapy on range of movement of knee joint after 15 days of indoor treatment

| Range of movement | n | Mean scores | | % Relief | t | P |
|-----------------------------|----|--------------|--------------|------------|------|--------|
| | | BT (in°) | AT (in°) | | | |
| Flexion of the knee joint | 47 | 102.52±24.55 | 109.36±22.66 | 6.84±10.72 | 4.37 | <0.001 |
| Extension of the knee joint | 13 | 12.61±5.67 | 7.44±7.13 | 41.03±5.78 | 3.22 | <0.01 |

n: Number of patients, BT: Before Treatment, AT:After Treatment

Table 8: Effect of therapy on range of movement of knee joint during first follow-up

| Range of movement | n | Mean scores | | % Relief | t | P |
|-----------------------------|----|--------------|--------------|------------|------|--------|
| | | BT (in°) | AT (in°) | | | |
| Flexion of the knee joint | 47 | 102.52±24.55 | 107.23±23.67 | 4.32±11.14 | 2.82 | <0.001 |
| Extension of the knee joint | 13 | 12.61±5.67 | 9.94±6.71 | 21.22±4.60 | 2.09 | <0.05 |

n: Number of patients, BT: Before treatment, AT:After treatment

Table 9: Effect of therapy on range of movement of the knee joint during second follow-up

| Range of movement | n | Mean scores | | % Relief | t | P |
|-----------------------------|----|--------------|--------------|------------|------|--------|
| | | BT (in°) | A T (in°) | | | |
| Flexion of the knee joint | 47 | 102.52±24.55 | 107.34±23.70 | 4.70±11.44 | 2.82 | <0.001 |
| Extension of the knee joint | 13 | 12.61±5.67 | 9.22±5.65 | 26.88±5.49 | 2.09 | <0.05 |

n: Number of patients, BT: Before treatment, AT:After treatment

a previous clinical study conducted, showing a marked reduction in pain and improvement in movements.^[18] The

beneficial effect of *Abhyanga*, *Svedana*, and *Matrabasti* was also found reported.^[4]

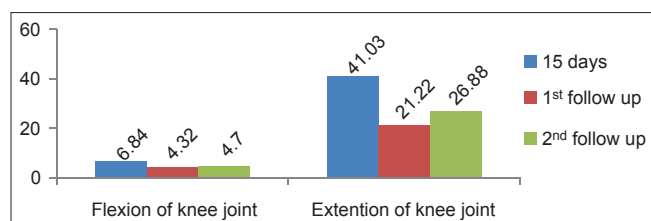


Figure 4: Comparison of percentage improvement in degree of range of movement of knee joint osteoarthritis

Probable mode of action

Mriduvirechana

Treatment of *Sandhigatavata* usually begins with a basic process like *Mriduvirechana*. It cleanses the body to restore patency of the *Srotasa*, which improve the access of healing material as well as nourishment to the body components. In addition, this also helps in maintaining or restoring the optimum equilibrium *Tridosha*.

Eranda Taila is indicated for *Mriduvirechana* in *Vatavyadhichikitsa*.^[19] The *Eranda Beeja*, having *Vibhedana* (purgative), *Srotoshodhana* (channel-cleansing), and *Anulomana*, (directing *Vata* in the right direction) actions,^[20] is used for *Mriduvirechana*. *Eranda Taila* has *Vatahara*^[21] action and it is the best among the medicaments used for *Virechana* (purgative therapy).^[22] *Mriduvirechana* performed with *Eranda Taila* after *Purvakarma* (the preparatory procedures), that is, *Abhyanga* and *Svedana*, eliminates the *Dosha* from the body through *Koshtha*, without any complication.

Abhyanga

Taila (oil) used in *Abhyanga* has *Snigdha* (unctuous), *Guru* (heavy), and *Mridu* (soft) properties, which are opposite to the properties of *Vata*. *Abhyanga* reduces the provoked *Vata*, which is responsible for the decay in the *Dhatus* and for manifestation of features like pain, stiffness, and cracks. According to modern studies, massage stimulates blood circulation and assists the lymphatic system, improving the elimination of waste throughout the body. Absorption through the skin can be enhanced by suspending the drug in an oily vehicle and rubbing it on the skin.^[23] Thus, the medicaments used as massage are absorbed through the skin.

Svedana

Svedana is specially indicated in symptoms like *Sankocha* (contraction or flexion), *Ayama* (extension), *Shula* (pain), *Stambha* (stiffness), *Gaurava* (heaviness), and *Supti* (numbness).^[24] These are the usual clinical manifestations of *Sandhigatavata*. *Svedana* has actions like *Stambhaghna* (cures stiffness), *Svedakarakatva* (creates perspiration), *Gauravaghna* (cures heaviness), and so on.^[25]

Nirgundipatra upanaha

Upanaha (poultice sudation) is a type of *Svedana* indicated in classics^[26] as one of the components in the treatment of *Sandhigatavata*.^[27] Studies have revealed the fact that lipid medium is highly suitable for penetration of the drug molecule through stratum corneum.^[28] On this basis, it can be assumed that the oil used in *Nirgundipatra Upanaha* serves as a lipoidal medium for penetration of the drug molecules of *Nirgundi* and exerts an immediate anti-inflammatory^[29] effect. Moreover heat applied with *Nirgundipatra upanaha*

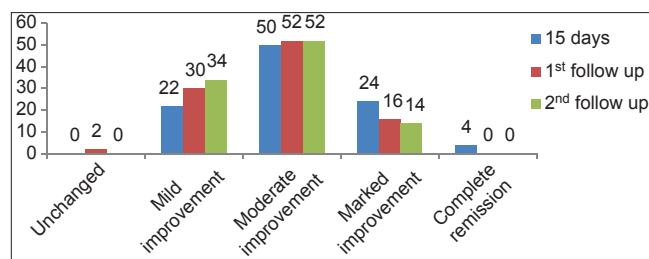


Figure 5: Overall effect of therapy

increases the local circulation and thus the rate of drug absorption. *Nirgundi* possesses *Vedanasthapana* (analgesic) and *Shothahara* (anti-inflammatory) actions.^[14] In most of the *Nighantus* it has been used for treating disorders characterized by *Shopha* (swelling) and *Shula* (pain).^[30] Its preventive effect on the development of formaldehyde-induced experimental arthritis has been observed.^[31] The present study supports these earlier observations and recommendations by the *Nighantus*.

Niruha Basti

This *Basti* given for one day before *Matrabasti*, cleanses the colon and prepares a good atmosphere for the *Matrabasti* material to come in contact with the colon wall and exert its medicinal effect.

Matrabasti

Matrabasti is a form of *Sneha Basti*. It is convenient and comfortable in administration. It nourishes the body, promotes the strength, and cures *Vata*-related diseases.^[32] *Basti*, through its action on *Vata* and *Agni*, promotes the formation of *Dhatus*. The colon is considered as main seat of *Vata*, and *Vata*-alleviating substances administered through the rectocolonic route in *Matrabasti* are able to have their optimum effect on the seat of *Vata*.

Jalaukavacharana

Charaka Samhita mentions that if a disease does not respond to the application of opposite principles like *Shita-Ushna* (cold-hot) or *Snigdha - Ruksha* (unctuous - dry), vitiation of *Rakta Dhatu* must be considered.^[33] In such a condition *Raktamokshana* is one of the recommendations. Hence, in the present study *Raktamokshana* (blood-letting) has been done by applying *Jalauka* (leech) in 31 patients, as it is easy and does not produce complications. Although *Sandhigatavata* is essentially a *Vata*-disorder affecting the *Sandhi* structures, secondary involvement of the *Rakta Dhatu* is possible in these 31 patients, which is evident with the classical *Upashaya - Anupashaya* test described earlier. According to conventional medicine also, this is not purely a degenerative condition. This is why the earlier name osteoarthrosis is now accepted as osteoarthritis.

Yogaraja Guggulu

It contains *Tridosha Shamaka* (pacifier of three *Doshas*, that is, *Vata*, *Pitta*, *Kapha*) and *Rasayana* (rejuvenative) actions and it is recommended for the management of all *Vata Rogas*.^[15] *Guggulu* possesses anti-inflammatory and analgesic actions. It helps in prevention against degenerative changes that may occur in bones and joints due to arthritis. *Guggulu* reduces inflammation and joint stiffness as well as pain associated with arthritis, and increases joint mobility.^[34] Earlier pharmacological studies on *Guggulu* have established its anti-inflammatory

and anti-arthritic activities in formaldehyde-induced arthritis, in albino rats.^[35] Significant anti-inflammatory and anti-arthritic activities of oleo-gum resin has been reported against carragenin-induced rat paw edema, granuloma pouch, as well as adjuvant arthritis.^[36] A study presented at a recent meeting of the American College of Rheumatology, has shown that herbal Ayurvedic therapy consists of *Guggulu*, which is as effective in treating knee osteoarthritis as a commonly prescribed medication (Celebrex) and Glucosamine, and with fewer side effects. In addition, the *Guggulu* has been shown to be a potent inhibitor of the enzyme, Nuclear Factor Kappa-light-chain-enhancer of activated B cells (NFkB), which regulates the body's inflammatory response. There are several studies that show decreased inflammation and joint swelling after administration of the extracts of *Guggulu* resin.^[37]

Narayana Taila

Taila (sesame oil) itself is a potent *Vata*-alleviating substance. Its *Vatashamaka* action is enhanced when it is processed with *Vatashamaka* drugs like *Patala* (*Stereospermum suaveolens* DC.), *Ashvagandha* (*Withania somnifera* Dunal.), *Agnimantha* (*Clerodendrum phlomidis* Linn. f.), *Atibala* (*Sida cordifolia* Linn.), and the like, in preparing *Narayana Taila*. *Narayana Taila* can be administered through any route in *Vata Roga*.^[13] In current study, it is used for *Abhyanga* and *Matrabasti*.

Ashvagandha Churna

It possesses *Shothahara* (anti-inflammatory), *Vatahara*, *Vedanasthapana*, *Shulaprashamana* (analgesic), and *Rasayana* (rejuvenative) actions.^[38] *Withania somnifera* (*Ashvagandha*), has shown a significant anti-inflammatory activity.^[39] A study reported that an extract of the root powder of *Withania somnifera* has a chondroprotective effect on the damaged human osteoarthritic cartilage matrix in 50% of the patients tested.^[40]

In this clinical trial a majority of patients, that is, 56% had a chronicity between one and five years, and were taking NSAIDs repeatedly. After starting the therapy, the patients did not need NSAIDs for symptomatic relief. In the assessment during the first outdoor follow-up it was observed that marked improvement was reduced in comparison to improvement found after 15 days of indoor treatment in the patients, while patients with moderate improvement remained the same in both the follow-up assessment periods [Figure 5]. This shows that the indoor treatment consists of manual therapies and least activities, as indoor patients contributed to marked and faster improvement in the first fortnight, which reduced initially at home, due to the absence of manual therapies and possibly increased activities, but became steady later on.

It is an incurable, but manageable disease, which is why the repetitive use of manual therapies is needed for a long time.

No adverse reaction of any procedure or oral medicaments were found during treatment, either as inpatients or as outpatients.

Conclusion

It can be concluded from the present study that *Sandhigatavata* is commonly found mostly in menopausal females. The present study reveals that multimodal Ayurveda treatment provided

highly significant relief in *Sandhigatavata* of the knee joint. This also shows the importance of manual therapies. The improvement remains steady even after 45 days of outdoor treatment. This shows the stable efficacy of the treatment. It is noticed that relief of symptoms has been found in spite of stopping NSAIDs in the patients. *Sandhigatavata* is *Yapya* (manageable) in nature, so repetitive use of this therapy is needed. This therapy is safe and effective in the management of *Sandhigatavata*.

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हिन्दी सारांश

जानु सन्धिगतवात में विभिन्न आयुर्वेदीय चिकित्सा का अध्ययन

मनीष शर्मा, चार्मी मेहता, दीपालि जे. शुक्ला, कलापी बी. पटेल, मनीष वी. पटेल, एस. एन. गुप्ता

वृद्धावस्था में वात दोष की वृद्धि होने के कारण धातुक्षय होता है। सन्धिगतवात वृद्धावस्था में धातुक्षय के कारण होनेवाली व्याधि है। इस चिकित्सीय अध्ययन में ५० रुग्णों को १५ दिनों के लिये अंतरंग विभाग में आयुर्वेदीय चिकित्सा दी गई, जिसमें स्नेहन, स्वेदन, मृदुविरचन, मात्राबस्ति, जलौकावचारण, योगराज गुग्गुलु एवं अश्वगंधा चूर्ण का समावेश किया गया। अंकशास्त्रीय परीक्षणों के आधार पर ५०% रुग्णों में मध्यम लाभ प्राप्त हुआ।