

## Efficacy of *Kolakulaththadi Upanaha Sweda* in the management of *Janu Sandhigatavata* (Knee Osteoarthritis): A Case Study

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### ABSTRACT:

*Sandhigatavata* (Osteoarthritis) is a disorder where *Vata dosha* is dominant. Today an estimated 30.8 million adults have osteoarthritis and lead huge impact on the quality of life (QoL). There is no satisfactory, comprehensive & time bound treatment schedule for Osteoarthritis available at present. The objective of this case study was retrospective analysis of *Kolakulaththadi Upanaha Sweda* in *Janu Sandhigatavata*. A 52 years old female patient diagnosed as *Janu Sandhigatavata* presented with pain, stiffness and restricted movements in bilateral knee joints for two years. The *Upanaha Sweda* remains 12 hours per day for two weeks. Assessment of the condition was done based on subjective parameters of the detailed Performa. After 14 days of treatment, it was observed statistically that 100% relief on swelling and 90% relief on pain during extension and flexion and restricted movement was observed. In view of the above it can be concluded that *Kolakulaththadi Upanaha Sweda* is effective as for the *Janu Sandhigatavata* successfully. Further clinical studies are recommended to evaluate the efficacy of the drug.

**KEY WORDS:** *Sandhigatavata, Kolakulaththadi, Upanaha.*

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### INTRODUCTION:

Osteoarthritis (OA) is the most common musculoskeletal condition and major cause of disability among elderly population in globally including Sri Lanka.<sup>[1]</sup> Today an estimated 30.8 million adults have osteoarthritis. As the world's population

continues to age, it is estimated that degenerative joint disease disorders such as OA will impact at least 130 million individuals around the globe by the year 2050.<sup>[2]</sup> The symptoms of OA correlate with *Sandhigatavata*. This condition explained under *Vata vyadhi*.<sup>[3]</sup>

*Sandhivata* is first described by Acharya Charaka as *Sandhigata Anila* with symptoms of *Shotha* which on palpation feels like a bag filled with air (swelling) and *Shula* on *Prasarana* and *Akunchana* movements on *sandhi* (pain in flexion and extension of the joints).<sup>[4]</sup> Acharya Susruta also mentioned *Shula* and *Shotha* in this disease leading to the diminution (*Hanthi*) of the movement at joint involved.<sup>[5]</sup> Madhavakara adds *Atopa* (Crepitus in joint) as additional feature of it.<sup>[6]</sup> *Sandhigatavata* is one of *Vata Vryadhi* that occurs in *Madhyama Rogamarga*.<sup>[7]</sup> According to Ayurveda, *Janu sandhi* (Knee joint) is mentioned as a *Kora Sandhi*.<sup>[8]</sup> The disease *Sandhigatavata* is more prone to be affected to knee joint because it is most frequently involved joint in daily routine work. Osteoarthritis in knee joint is very common and globally approximately 250 million people have Osteoarthritis in knee (3.6% of the population).<sup>[9]</sup> Therefore, this study would be done on patient affected in *Janu Sandhigatavata*.

Other systems of medicine can provide three types pharmacological, non-pharmacological and surgical treatments which are highly symptomatic and commonly associated with troublesome side effects. When *Sandhigatavata* is considered, as the disease is *Vardhakya Janya Vryadhi* (degenerative) and *Dhatuksbayaja Vryadhi* (mal nourishment of *Dhatu*s) i.e. pain management is the main aim of treatment to give quality life to the patient. In Ayurvedic classics, Acharyas have mentioned various therapeutic and Para surgical procedures and also many *vatahara* Yogas to manage the *Sandhigatavata* like *Snehana* (Oleation), *Swedana* (Sudation), *Agni karma* (Cauterization), *Bandhana* (Bandage) etc.<sup>[10]</sup>

Osteoarthritis causes pain and impairs functionality of the patient, it places a major burden on individuals, communities, health

systems, and social care systems. For the management of Osteoarthritis, patients need to take analgesics for daily and lifelong. In Osteoarthritis, surgical therapy- like knee joint replacement is very costly and even after surgery patient has to continue some medicine for a long duration. Earning losses due to Osteoarthritis cost an estimated \$80 billion per year between 2008 and 2011.<sup>[11]</sup> Therefore, no satisfactory, comprehensive & time bound treatment schedule for Osteoarthritis is available at present. Even other treatments have their own limitations in the management of this disease. This study supports the opinion that the administration of *Kolakulaththadi Upanaha Sweda*<sup>[12]</sup> increases the quality of life in patients of Osteoarthritis based upon the classical references with low cost and minimum side effects.

#### CASE STUDY:

A 52 years old female patient diagnosed as *Janu Sandhigatavata* presented with pain, stiffness and restricted movements in bilateral knee joints for two years to the IPD of Kayachikithsa, Ayurveda National Hospital, Borella, Sri Lanka for further management. Patient was diagnosed on the basis of *Sandhigatavata* lakshana as described in Ayurveda classics and radiological investigation like X-Ray readings was not included to the diagnosed. Informed consent was obtained from the patient prior to the commencement of the study. The prognosis of the clinical features including pain, swelling, and restricted range of movements were measured and recorded before and after the treatment by using detailed Performa.

**THERAPEUTIC INTERVENTION:**

Patient has been advised to follow the treatment for a period of fourteen days and there was no any internal medication given throughout this period. Signs and symptoms were recorded before and after the treatment and weekly during the treatment of fourteen days.

**Method of preparation of Kolakulaththadi Upanaha Sweda:**

- Took 10g of each ingredient of *Kolakulaththadi churna* and mixed with 50ml of *Kanji* (Tamarind juice) and 5g of *Saindhava Lavana* (Rock salt). Paste heated with light flame.
- Warmed paste was applied over the *Janu sandhi* (Knee joint). Then covered with *Eranda Patra* (Castor leaf) and it was firmly bandaged. *Upanaha* was retained for 12 hours, and then removed and the part was cleaned with warm water.

**Table-1: Assessment Criteria** <sup>[13]</sup>

Symptoms	Grading parameters
<i>Shoola</i> (pain)	0 – No Pain 1 – Mild Pain (nagging, annoying, interfering little with activities of daily livings) 2 – Moderate Pain (interferes significantly with activities of daily livings) 3 – Severe Pain (disabling; unable to perform activities of daily livings)
<i>Shotha</i> (Swelling)	0 – No Swelling 1 – Mild, 2mm or less: slight pitting, no visible distortion, disappears rapidly 2 – Moderate, 2-4 mm indent: somewhat deeper pit, no disappears in 10-25 sec. 3 – Severe, 4-6mm: pit is noticeably deep. May last more than a minute. Dependent extremity looks swollen and fuller
<i>Hanti Sandhi</i> (Restricted movements)	0 – Can do work unaffectedly 1 – Can do strenuous work with difficulty 2 – Can do daily routine work with great difficulty 3 – Cannot do any work

**Table -2: Ingredient of Kolakulaththadi Upanaha Sweda** <sup>[14]</sup>

Sanskrit Name	Botanical Name	Part Used	Quantity
<i>Kola</i>	<i>Zizyphus jujube</i>	Fruit	01 part
<i>Kulaththa</i>	<i>Dolichos biflorus</i>	Seed	01 part
<i>Suradaru</i>	<i>Cedrous deodara</i>	Bark	01 part
<i>Rasna</i>	<i>Pluchea lanceolata</i>	Rhizome	01 part
<i>Masha</i>	<i>Phaseolus radiatus</i>	Seed	01 part
<i>Uma</i>	<i>Linum usitatissimum</i>	Seed	01 part
<i>Kusta</i>	<i>Saussurea lappa</i>	Stem	01 part
<i>Vacha</i>	<i>Acorus calamus</i>	Rhizome	01 part
<i>Satabva</i>	<i>Anethum sowa</i>	Seed	01 part
<i>Yava</i>	<i>Hordeum vulgare</i>	Seed	01 part
<i>Eranda</i>	<i>Ricinus communis</i>	Seed	01 part

**Table-3: Pharmacodynamics of *Kolakulaththadi Upanaha Sweda* <sup>[15]</sup>**

Herb	Rasa	Guna	Veerya	Vipaka	Dosha Karma
<b>Kola</b>	<i>Katu</i>	<i>Ushna</i> <i>Theekshna</i>	<i>Ushna</i>	<i>Katu</i>	<i>KaphaVatabara</i>
<b>Kulaththa</b>	<i>Kashaya</i>	<i>Laghū</i> <i>Ruksha</i> <i>Theekshna</i>	<i>Ushna</i>	<i>Katu</i>	<i>VataKaphabara</i>
<b>Suradaru</b>	<i>Tikttha</i> <i>Katu</i> <i>Kashaya</i>	<i>Snigdha</i> <i>Laghū</i>	<i>Ushna</i>	<i>Katu</i>	<i>VataKaphabara</i>
<b>Rasna</b>	<i>Tikttha</i> <i>Katu</i>	<i>Laghū</i> <i>Ruksha</i> <i>Theekshna</i>	<i>Ushna</i>	<i>Katu</i>	<i>VataKaphabara</i>
<b>Masha</b>	<i>Madhura</i>	<i>Guru</i> <i>Snigdha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Vatabara</i>
<b>Atasi</b>	<i>Madhura</i> <i>Tikttha</i>	<i>Guru</i> <i>Snigdha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Vatabara</i>
<b>Kushta</b>	<i>Tikttha</i> <i>Katu</i> <i>Madhura</i>	<i>Laghū</i> <i>Ruksha</i> <i>Theekshna</i>	<i>Ushna</i>	<i>Katu</i>	<i>KaphaVatabara</i>
<b>Vacha</b>	<i>Tikttha</i> <i>Katu</i>	<i>Laghū</i> <i>Theekshna</i>	<i>Ushna</i>	<i>Katu</i>	<i>KaphaVatabara</i>
<b>Shatahva</b>	<i>Tikttha</i> <i>Katu</i>	<i>Laghū</i> <i>Theekshna</i>	<i>Ushna</i>	<i>Katu</i>	<i>KaphaVatabara</i>
<b>Yawa</b>	<i>Kashaya</i> <i>Madhura</i>	<i>Guru</i> <i>Ruksha</i>	<i>Sheeta</i>	<i>Katu</i>	<i>VataPittabara</i>
<b>Thail Phala</b>	<i>Madhura</i> <i>Katu</i> <i>Kashaya</i>	<i>Snigdha</i> <i>Theekshna</i>	<i>Ushna</i>	<i>Madhura</i>	<i>VataKaphabara</i>

**Table-4: Effect of clinical sign and symptoms of treatment regime**

Clinical Features	Before Treatment (BT)	After Treatment (AT)
<i>Shotha</i> (Swelling)	3	0
<i>Shoola</i> (pain)	3	1
<i>Hanti Sandhi</i> (Restricted movements)	2	1



**Figure-1: Preparation of *Kolakulaththadi Upanaha Sweda***

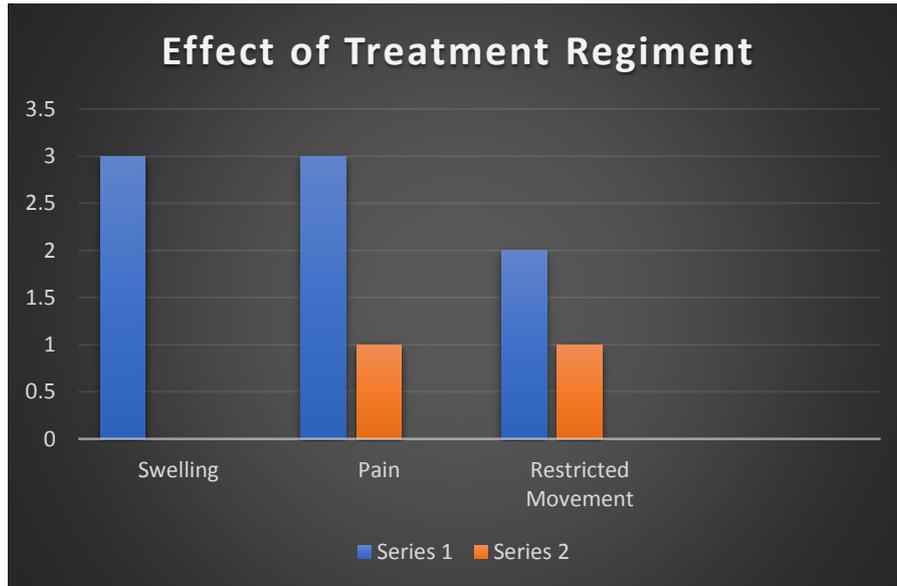


Figure-2: Effect of therapy

### Results

Data was collected and analysed the percentage wise reduction of the signs and symptoms before and after the treatment regimen.

It was observed that *Shotha* (Swelling) was completely cured and 90% relief was obtained to *Hanti Sandhi* (Restricted movements) and *Shula* (Pain) in the affected knee joints.

### FOLLOW UPS:

The patient was admitted to the IPD in the Hospital and had daily treatment consecutive 14 days, meanwhile the outcome measures were assessed as well. After the sessions of the therapy, exactly after the gap of 14 days and 28 days, two OPD visits were held with the patient. No any medication was given after the treatment period. She was satisfied with the treatment and whether there was no any relapse of the symptoms so far occurred. However, on third visit which was one after month of caseation of therapy, there was some reoccurrence of symptoms. So, use of medicines for longer period and prevention

of the causative factors is essentially required.

### DISCUSSION:

*Sandhigatavata* is the most common *Vatavyadhi*. Specific etiological factors have not explained the disease, but the common symptoms of *Vatavyadhi* are considered. According to modern science, obesity, excess workload, age, sex, repetitive stress over joints, etc., are the important causative factors of *Sandhigatavata*. The study's primary aim was to evaluate the impact of curative treatments on symptom reduction.

After a 14-days treatment, an average reduction of 90% in restricted movement and pain, reduction of 100% in swelling was observed respectively. This positive outcome could be attributed to the anti-inflammatory and analgesic properties of the ingredients present in the herbal formulae of *Kolakulaththadi Upanaha Sweda*. According to Ayurveda *Dosha Karma*, most of the herbs had *Tiktiba – Katu - Kashaya rasa, Laghu – Ruksha Guna, Ushna Veerya* and *Katu Vipaka* respectively pacified *Vata* and *Kapha dosha*. These characteristics align with Ayurveda principles and may have contributed to the

favourable outcome observed in the pain, swelling and restricted movement reduction. The pathogenesis of *Sandhigatavata* is due to imbalance or vitiation of *Vata* and *kshaya* of *Kapha dosha*, as well as the involvement of *Asthi* and *Majja Dhatu*. The formula of *Kolakulaththadi Upanaha Sweda* possess properties such as *Tiktha – Katu - Kashaya rasa*, *Laghu – Ruksha Guna*, *Ushna Veerya* and *Katu Vipaka* which have potential to pacify *Vata* and *Kapha dosha*, thereby reducing the clinical features.

Hence the Osteoarthritis was a condition characterized by joint cartilage breakdown, it is classified in to grades 0 -4 (0- Normal, 1- Minimal, 2- Mild, 3- Moderate and 4- Severe) to represent the severity of the condition. According to the reduced of the clinical features of the condition, we can apply this treatment protocol for minimal to mild grade of Osteoarthritis respectively.

#### CONCLUSION:

Considering the above findings, it can be concluded that the treatment with *Kolakulaththadi Upanaha Sweda* is provided a better relief in the signs and symptoms of *Janu Sandhigatavata* mainly in pain, swelling and restricted movement. This treatment modality can be prescribed as a standard procedure considering its effectiveness for the condition. Further clinical studies should be conducted to evaluate the efficacy of the treatment with larger sample to draw a generalized conclusion.

#### Consent of patient:

Before the commencement of the treatment, written consent was obtained from the patient. She has given her consent for reporting the case along with the images and the other clinical information in the journal.

#### Limitation of Study:

This was a single case study. Therefore, further clinical studies, radiological investigations, cytotoxic studies and drug standardization should be conducted to evaluate the effectiveness of the treatment.

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