



Case Study

EFFECT OF *LAKSHMI VILASA RASA* AND *BALA GULUCYAADI KASHAYA* IN PAIN OF KNEE
OSTEOARTHRITIS - A CASE REPORT

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ABSTRACT

Knee osteoarthritis is a chronic disease that affects the whole joint, including the articular cartilage, meniscus, ligament, and peri-articular muscle, and can be caused by a variety of pathophysiological causes. *Lakshmi Vilasa Rasa* (LVR) is a *Khalviya Rasayana* mentioned in the *Visha upavishadi Vijnaneeya Taranga* of *Rasa Tarangini* indicated for *Roga durbala deha, Krsa, Vahnimandya*. *Bala guluchyaadi kashaya* (BGK), is mentioned in *Chikilsamanjaris Vatarakta prakarana*. This work explores a case study on the combined effect of these two drugs in pain of knee osteoarthritis when administered for a period of one month with honey as *Sahapana*. Assessment was done before and after treatment with the help of VAS scale and WOMAC scale CRD version. The results showed that *Lakshmi vilasa rasa* with *Bala guluchyaadi kashaya* was effective in relieving pain by 50%, stiffness by 100% and improving the physical function by 21.06% as per VAS scale and WOMAC scale. Additionally, there was a change of 29.167% total WOMAC score after treatment. The study thus indicates the effectiveness of these two formulations in pain management related to *Sandhigata vata*.

INTRODUCTION

Osteoarthritis (OA) is a major public health issue that affects more than half of the world's over-65 population.^[1] Pain is a common clinical complaint, especially after extended activity and weight-bearing, whereas stiffness is observed after inactivity. It is sometimes referred to as degenerative arthritis, and it most usually affects the hands, feet, spine, and large weight-bearing joints such as the hips and knees.^[2] Knee OA is a chronic disease that affects the entire joint, including the articular cartilage, meniscus, ligaments, and peri-articular muscle, and can be caused by several different pathophysiological causes. It is a painful as well as a debilitating condition that affects millions of people.^[3]

The current pharmacological treatment of osteoarthritis includes the use of analgesics and Nonsteroidal Anti-inflammatory medicines (NSAIDs); however, these treatments do not provide adequate pain relief or reduce the progression of the disease, and NSAIDs have also been related to adverse effects. As a result, individuals suffering from osteoarthritis increasingly seek complementary and alternative medicine (CAM) treatments.^[4]

Osteoarthritis can be conceptually considered as *Sandhigata vata*^[5], a *Vata vyadhi* that indicates degeneration, therefore therapeutic methods that can delay cartilage deterioration and disease progression are critically required. *Rasayana* is that quality of a *Dravya* with the help of which one can attain a better quality of *rasa* and other *Dhatu*s up to the smallest unit of the body.^[6] Thus, we can assume that *Rasayana* might be beneficial in *Sandhigata vata*.

The *Rasa* drugs are widely known for their attributes such as rapid effectiveness, a low dosage requirement, and a wide range of therapeutic utility.^[7] *Lakshmi Vilasa Rasa* (LVR) is an Ayurvedic herbo mineral *Khalviya Rasayana* mentioned in the *Visha upavishadi Vijnaneeya Taranga* of *Rasa Tarangini* indicated for *Rogadurbaladeha* (those who are emaciated due to disease), *Krsa* (lean), *Ksheenaretas*

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(low virility), *Dehapushti* (requiring body nourishment), *Kama virya vardhanam* (for those desiring increased libido and virility), *Balya* (improves physical strength), *Vrsya* (improves virility), *Vahnimandya nashana* (in loss of digestive fire), *Raktasanchana* (blood generating) and *Lavanya vardhanam* (improving beauty and complexion). It consists of six ingredients namely *Shoditha* (purified) *Parada* (mercury), *Shoditha Gandhaka* (Sulphur), *Loha Bhasma* (incinerated iron), *Shoditha Kupeelu* (*Strychnos nux vomica*), *Shoditha Tankana* (borax), and *Maricha* (Pepper) triturated three times in four *Bhavana dravyas* namely *Ardraka swarasa*, *Satavari swarasa*, *Bhumyamalaki swarasa*, and *Bhrngaraja swarasa*.^[8]

Classical texts mention *Parada*, *Gandhaka*, and *Loha* as great *Rasayanas*. *Shoditha Kupeelu* is said to be a powerful anti-aging remedy and is especially advised during senility as *Rasayana*.^[9] Analgesic and anti-inflammatory effects of *Kupeelu* and *Maricha* have been proven. ^[10,11] The *Shoditha Tankana* has *Ushna virya*, and there is strong evidence supporting that Boron has bone-beneficial properties.^[12] *Lakshmi vilasa rasa* is mixed with honey during administration which acts as a *Sahapana*. Honey also has proven anti-inflammatory qualities.^[13] Given these features, *Lakshmi vilasa rasa* is a suitable composition for combating pain and the degenerative effects of *Sandhigata vata*/ osteoarthritis.

Anupana for LVR is *Bala guluchyaadi kashaya* (BGK), which is mentioned in *Chikilsamanjari's Vatarakta prakarana*. This formulation's indication mentions its instantaneous action in all *Vata vyadhis*.^[14] *Bala* is well-known for its ability to treat various rheumatic ailments. *Sameera Nashanam*, *Vedanasthapana*, *Shotahara*, *Brumhana*, and *Ojovardhaka* are its *Karmas*.^[15] *Guduchi* is *Balya*, *Deepana*, and *Rasayana*, whereas *Devadaru* is *Vata Samana*.^[16,17] Individually, these three drugs have analgesic and anti-inflammatory actions.^[18-20]

Locomotory System Examination

Table 1: Locomotory System Examination

Inspection		Palpation		Range of movements	
Swelling	Absent	Tenderness	Absent	Flexion	Restricted due to pain
Deformity	Absent	Crepitus	Present	Extension	Restricted due to pain
Gait	Slow	Temperature	Absent		

Radiological Investigation

X ray Anteroposterior (AP) view of bilateral knee joints were taken.

Radiographic changes in the X-ray revealed that the patient comes under grade 2 of Kellgren Lawrence scale.^[22]

Case Report

A 67-year-old female patient visited R&B OPD of Govt. Ayurveda College, Thiruvananthapuram, with pain along with stiffness in the bilateral knee joint of varied duration (pain in the left knee joint - 6 months, pain in the right knee joint - 12 years), not associated with any swelling or redness. She was a retired tutor and her job required standing for long hours at a time. The disease onset was slow and gradual affecting her right knee joint first and then the left. Aggravating factors were exposure to cold weather and standing for long duration. Relieving factors were the application of hot fomentation, warm climate and sufficient rest. CBC, Hb percent, ESR, Random Blood Sugar Level, Rheumatoid Factor, RFTs, LFTs, were among the tests performed on the patient's blood. ESR was 26mm/hour while all the other tests were found to be within normal limits. Clinical examination and radiographs of the knee joint confirmed the diagnosis of OA knee joint (ACR Diagnostic Criteria for OA Knee Diagnosis).^[21]

History of Past Illness

There was no known history of diabetes mellitus, hypertension, and dyslipidemia. No history of trauma was reported. The patient was not on any medication.

Personal History

She had a good appetite with normal bowel and bladder function. She was on mixed diet and was healthy in appearance. Sleep was sound, no history of addictions or allergy was reported by the patient. She did exercise every day for half an hour and had adequate rest.

Menstrual History

She had attained menarche at the age of 13 and had a regular cycle with 2 normal vaginal deliveries (NVD). She attained menopause at the age of 55 years.

Assessment Criteria

Assessment was made by observing the changes in the clinical features, VAS scale and WOMAC (CRD) scale on 0th day and after treatment. ^[23,24]

Preparation of Lakshmi Vilasa Rasa and Bala Guluchyaadi Kashaya

The herbal raw materials were procured from authentic sources/local Ayurvedic shops and authenticated by *Dravya guna* expert, while the metal/minerals except *Tankana* were procured from a local laboratory supply store, Thiruvananthapuram. *Tankana* was procured from a local raw medicine store, Thiruvananthapuram and was certified by *Rasa*

Shastra expert. The process of study drug preparation involved following stages viz., Purification of *Parada*, Purification of *Gandhaka*, Preparation of *Kajjali*, Preparation of *Loha Bhasma*, Purification of *Tankana*, Purification of *Kupeelu bija*, Preparation of *Maricha churna*, Preparation of *Ardraka*, *Satavari*, *Bhumyamalaki* and *Bhrngaraja swarasas*, *Bhavana* (levigation) with above mentioned *Swarasas* and Preparation of *Bala guluchyaadi kashaya*.



Fig 1- Lakshmi Vilasa Rasa



Fig 2-Bala Guluchyaadi Kashaya coarse Churna

Intervention Schedule

A voluntary written informed consent was obtained from the patient at the initial appointment. *Lakshmi vilasa rasa* was dispensed in zip lock bags, with instructions to take 1 *Gulika* (125mg) twice daily with honey as *Sahapanam* and *Bala guluchyaadi kashaya* (48ml) as *Anupana* half an hour after food, with extensive guidance on *kashaya* preparation. It was suggested that the medications be taken for 30 days.

Results on Case Study

VAS score

Before treatment – 6

After treatment – 3

WOMAC Score

Table 2: WOMAC Before and After Treatment

How much pain do you have?	Before Treatment	After Treatment
1. Walking on flat surface	1	1
2. Going up or down stairs	4	3
3. At night while in bed	2	0
4. Sitting or lying	0	0
5. Standing upright	1	0
Pain sub score	8	4
How much is your stiffness?		
6. After first wakening in the morning	1	0
7. After sitting, lying or resting later in the day	1	0
Stiffness sub score	2	0
How much difficulty do you have?		
8. Descending stairs	4	3

9. Ascending stairs	4	3
10. Standing up from a chair	1	1
11. While standing	3	1
12. Bending to floor (to pick up objects)	0	0
13. Walking on flat ground	1	1
14. Getting in and out of Autorickshaw/Bus /Car	1	1
15. Going shopping	1	1
16. On rising from bed	2	1
17. While lying on bed	2	1
18. While sitting on chair	1	1
19. Going on/off toilet -Indian/Western	1	0
20. Doing heavy domestic duties (moving heavy boxes, scrubbing floor, lifting shopping bags)	3	3
21. Doing light domestic duties (cleaning room/table/ cooking/ dusting)	2	1
22. While sitting cross legged on floor	4	4
23. Rising from cross legged position	4	4
24. While squatting on floor	4	4
Physical function sub score	38	30
Total score	48	34

DISCUSSION

The case study reveals that there is a 50% relief in pain as per both the VAS and WOMAC pain subscale. The score changed from moderate to mild VAS score. A 100% relief from stiffness was observed in the patient as revealed by the WOMAC stiffness subscale. There is a 21.06% change observed after treatment in the physical function subscale. The total WOMAC score showed a change of 29.167% after treatment.

Lakshmi vilasa rasa has *Shudha Parada*, *Shudha gandhaka*, *Loha bhasma*, *Shudha Kupeelu churna*, *Shudha Tankana*, and *Maricha churna* as its ingredients.

The reason for considering this *Yoga* in a *Vata vyadhi* is owing to some of the indications mentioned. The symptoms for *Vrdha vata* include *Karsya*, *Karshnya*, *Ushnakamatha*, *Anaha*, *Sakrtgraha*, *Bala nidra indriya bhramsha*, etc.^[25] Analysing the *Yogas* indications such as suitable for *Krsa*, *Lavanya vardhana* and *Balya*, *Vatahara* property of the *yoga* is being demonstrated.

The *Arogya lakshana* can be determined by *Dhathusamyā* which again is known by criteria such as *Ruk upashamanam* (pain relief), *Swara varna yoga*, *Bala vridhi* etc as per *Charaka* and *Bala varna ayusya* (normal-sounding voice, complexion and, life), etc as

per *Kashyapa samhitha*.^[26,27] Since the *yoga* specifies *Balya* and *Lavanya vardhana*, we can deduce that the medicine aids in the attainment of *Dhathusamyā* and thus *Arogya*. *Bala* can be translated to signify an increase in immunity, physical power, and stamina. According to *Charaka Vimana*, in the context of *Anumana*, *Bala* can be appraised by *Vyayama sakti* and in chapter 8 it is said that *Vyayama sakti* implies *Karma Saktya preekshaya*. That is, *Bala* in general might be defined as the body's functioning capacity.^[28,29] The WOMAC score for assessing physical function demonstrates that the patient's physical function or activity has increased.

Another concern is that OA is more common in women, owing to the onset of menopause/*Rajonivritti*, which causes oestrogen and calcium deficiency. As *Vata dosha* predominates in *Rajonivritti*, the majority of symptoms are caused by *Vata vridhi*, which causes *Dhathu kshaya*. As a result, it can be concluded that *Roga durbalata* is caused by *Vata vridhi* and is alleviated by *Lakshmi vilasa rasa*.

Agni mandya is the fundamental cause of all diseases.^[30] In later stages, *Jathragnimandya* will give rise to *Dhathuagni mandya* and *Dhathu vaishamyā*. As a result, LVR being *Agnimandya nashana*, helps to

restore *Agni* to its normal state, hence increasing the patients *Vyadhikshamatwa* and *Roga durbalata*.

Finally, *Dehapushti*, *Rakta sanchanana*, and *Virya vardhana* are mentioned in the *Yoga*. Since all of this implies *Dhatu poshana* from *Rasa* to *Sukra*, we can infer that *Yoga* can initiate *Uttarothara dhatu pushti* by treating *Agnimandya* and *Vata vridhi*, resulting in *Dhathusamyam* and, eventually, *Arogya*. The *Loha bhasma* may be responsible for the *Yogas Rakta sanchana* feature.

In *Ashtanga hrudaya Arunadutta* commentary on *Rasayana*, it is stated that '*Labhopayo hi shasthanam rasadeenam rasayanam*', which implies that *Rasayana* is that which helps in attaining excellent *Rasadi Dhatus*.^[34] On that basis, we can conclude that, *Lakshmi vilasa rasa* has a *Rasayana* quality and functions as a *Rasa Rasayana*.

Bala guluchyaadi kashaya contains only three ingredients: *Bala*, *Guduchi*, and *Devadaru*. On considering the *Rasa panchaka* of the ingredients in *yoga*, there is a predominant *Ushna virya* and *Madhura vipaka* indicating that it may have *Vata samana* characteristics. *Bala* and *Devadaru's* individual *Karma* mentions *Vata nashana*, whilst *Guduchi* is considered to be *Tridosha samaka*. These three drugs work synergistically to reduce *Vata* and hence aid in the management of *Sandhigata vata*.

CONCLUSION

Lakshmi vilasa rasa mentioned in *Rasa Tarangini* is a *yoga* that, according to its constituents, has the capacity to be exceedingly potent as a *Rasayana* but has surprisingly remained unexplored. Similarly *Bala guluchyaadi kashaya* is also an excellent formulation that can be administered in *Vata vyadhi*. According to the findings of this study, the combined action of these two formulations aids in the relief of pain as well as other symptoms of osteoarthritis.

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