

Effect of Therapeutic Burn with Copper Rod (Agnikarma with Tamrashalaka) in the Management of Osteoarthritis of Knee (JanusandhigatVata)

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Abstract: Osteoarthritis of knee is more prevalent in Indian population. Osteoarthritis is the 2nd most common disease in the world population. Worldwide estimates indicate that 9.6% of men and 18% of women ≥ 60 years have symptomatic OA. The reported prevalence of Osteoarthritis from a study in rural India is 5.78%. Patients affected by this disease suffer from pain and loss of function. At present, there is no cure for OA. The management of OA is broadly divided into non-pharmacological, pharmacological, and surgical treatments, which are highly symptomatic and commonly associated with troublesome side effects. These treatments are either expensive or not available for common people in developing countries. Acharya Sushrutahas explained Vayu entrapped in Snayu (muscles), Sandhi (joint) & Asthi (bone) which should be treated with Agnikarma (therapeutic burn). Hence the patient should be kept under Agnikarma therapy. **Material and Method:** 50 pts. Were selected from the dept. of Panchakarma OPD Bharati Vidyapeeth Ayurveda Hospital Pune. Copper Rod Purchased from Pune Market. Therapeutic burn with copper rod was done on maximum area of tenderness on affected knee joint daily morning at 11 am, Time 5-10 seconds for 5 to 6 points daily for 7 days. Assessment was done on 0th, 7th and f/u was taken on 15th and 30th day. Parameters of signs and symptoms recorded before and after treatment. **Conclusion:** Agnikarama shown significant results (i.e. P value is <0.05) in cardinal signs and symptoms of osteoarthritis of Knee.

Keywords: Agnikarma, Tamrashalaka, therapeutic burn with copper rod, Goniometry Scale, Osteoarthritis of Knee, Janusandhigata Vata

1. Introduction

Osteoarthritis of knee is more prevalent in Indian population. This disease simulates to the SandhigataVata. It is one of the degenerative Joint Disease characterised by breakdown of joint cartilage. Osteoarthritis is the 2nd most common disease in the world population. Knee joint is the most affected site. The major risk factors associated with Knee joint are old age, obesity, occupational knee bending etc. which makes it an important cause of disability. SandhigataVata to be caused by the excessive intake of VataVrudhikaraAhāralike Katu, Tikta, Kaṣāya Rasa PradhānaDravya And Ativyāyāma (excessive strain or stress to the joints) or Abhighāta.

Osteoarthritis is a degenerative joint disease due to the degeneration of the joints, the articular cartilages and subchondral bone. It is caused by the mechanical stress to the joints and produces the symptoms like joint pain, swelling, stiffness etc. Even though the disease effects any joint in the body, most commonly involved joints are major joints and weight bearing joints of the body like hip and knee joint. Due to the life style, Indians suffers from knee joint osteoarthritis whereas western country suffers from hip joint osteoarthritis commonly.

2. Need of the Study

No satisfactory, comprehensive & time bound treatment schedule for JānusandhigataVata is available at present. Even other treatments have their own limitations in the management of this disease. Other systems of medicine can

provide either conservative or surgical treatments which are highly symptomatic and commonly associated with troublesome side effects. Whereas AsthiSandhigatVata can be better treatable by the management and procedures mentioned in Āyurvedic classics.

ĀcāryaSuśrūta has explained Vāyu entrapped in Snāyu, Sandhi&Asthi which should be treated with Snehan, Swedan, Upanāha, Agnikarma, Bandhan and Mardana. These treatments are economical and they have long lasting effects and the chances of recurrence are less. Hence we took Agnikarma for this study.

Advantages of this Study:

- In this study we found the maximum effect of Agnikarma treatment on Śūla, Śoṭha and Ātopa.
- Patients can do this treatment in OPD level with their daily routine work.
- Treatment Schedule only for 7 days continuously for once in a day (for Agnikarma 5-10 sec).

Hypothesis

Ho: There is no significant difference in the efficacy of Agnikarma with Tāmraśālākā in Jānusandhigata Vata.

H1: There is significant difference in the efficacy of Agnikarma with Tāmraśālākā in Jānusandhigata Vata.

3. Material and Method

50 patients for Agnikarma of JānusandhigataVata were randomly selected and allocated on the basis of clinical examination selected from OPD of Panchakarma Dept.

BVMF Ayurveda Hospital, Pune- 43.A Special case Performa containing details necessary for study was prepared. Tāmraśalākā was purchased from Pune market. Permission for this study was taken from Clinical Trial Registry of India and the trials were registered in CTRI.CTRI/2015/01/005357.

Administration Criteria for Procedure

Particular	Agnikarma
Number Of Patients	As per plan of research 50 patients
Treatment given	Agnikarma- Tāmraśalākā
Purvakarma	Cleaning of Janusandhi with lukewarm water
Pradhāna Karma	Binduvat One seating per day on the maximum area of tenderness.
Time	After breakfast
Duration	Till SamyakaDagdhaLakṣaṇa were observed
Paścāta Karma	Apply the Goghrita on Dagdha area
Assessment Day	0 day & 7 th day
Follow Up	15 th & 30 th from the 1 st day of Agnikarma
Pathyā-Apathya	Was advised as per work and food habits

1st day of Agnikarma with Tamrashalaka



7th day of Agnikarma with tamrashalaka



Inclusion Criteria

- Patients having the signs and symptoms of JānusandhigataVāta Viz- Śūla, Śoṭha, Sparśaashatva, Ākuncan Prasāraṇajnya Vedana, Sandhisputan and Sakaṣṭacalan
- Patients between the age group of 30 -70 years.
- Patients of both the sex.
- SwedanArha patients (Agnikarma).
- Patient who were willing for the treatment.

Exclusion criteria

- Pregnant woman
- Patients of Amavāta&Vātarakta
- JānuSandhigataVāta due to Abhighāta
- Patients with systemic diseases like diabetes, hypertension Patients with major disorders that is traumatic, infective and neoplastic conditions of Knee, Congenital anomalies involving the knee joint, Viral infections like Polio Myelitis, Transverse Myelitis, Bacterial infections like TB Knee joint, Demyelinating diseases, Fibromyalgia, Motor neuron diseases that interfere with the course of treatment were excluded from the study.
- Patients undergoing other modalities of treatment for JānusandhigataVāta .

Supportive Laboratory Investigations

X – Ray of Knee joint Anterior – Posterior and Lateral View.
RA factor and ASO titer was carried out if necessary.

4. Observations and Result

Total 60 Patients were enrolled for the study, in this research study work -Agnikarma with Tāmraśalākā . (10 pts were dropped out. Out of them 3 didn't came for f/u and 7 pts drop out due to they withdraw from the treatment). Complete Data of 50 Patients is analysed. After the clinical study of all patients, occurrences of various incidences are shown in the form of charts and Table Nos. Incidence of Age, sex, diet, Prakṛtī, occupational status, Knee involvement and symptoms with criteria are shown accordingly.

Demographical Data:

Demographical Data	Agnikarma patients
Age	30-40 yrs 40%
Gender	Female -66 %
Prakṛtī	VP-58%
Āhār	Non vegetarian -86%
Occupation	Housewives 54%
Marital status	Married- 96%
Nidān	UJSV -82%

Percentagewise distribution of patient according to Avasthā:

Avastahā	Agnikarma with Tamrashalaka	
	Percentage	
Nirupsthambhita	70%	
Upasthambhita	30%	
Total	100%	

Assessment criteria before treatment of Agnikarma

Grade	Agnikarma with Tamrashalaka	
	No of ptsBt	Percentage
Severe	27	54%
Moderate	23	46%
Mild	0	0%
None	0	0%

Statically Analysis:

- **For qualitative data:**(Subjective parameter-Śūla, Śoṭha and Sparśāshatva)

The obtained information was analyzed statistically by using **Friedman test** and for comparison **mannwhitney u** test was carried out.

- **For quantitative data:** (Objective parameter-, Ānkuncan-Prasāranjanya Vedana, Sandhispuṭan. and Sakaṣṭacalan) For the assessment of the results guideline laid down by classical text of Ayurveda as well as parameters suggested the results obtained were statistically analyzed and Mean, S.D., S.E. z value and P value were calculated by using the **repeated measures of ANOVA** and for comparison **two sample t test** was carried out.

Note: As sample size was greater than 30 the answers are same as z test by software.

Symptoms wise statistically significant effect of Agnikarma:

Shula: As seen previously the reduction in Vedana is statistically significant on 7th day as well as on 30th day. Also mean rank is not decreased from 7th day to 30th day in Treatment of Agnikarma. Suggesting that Agnikarma with Tamraśalāka reduces Śula significantly and its efficacy has considerable sustainability even after the end of treatment.

Śoṭha: The average reduction in the shotha was found along with the statical analysis, indicate that the reduction in śoṭh is significant. Also its Efficacy not only sustains but gets better even when the after treatment.

Spraśāsahatava: In the trial reduction in this symptoms was seen in after treatment. Data was highly significant even after the 2nd f/u.

Prasāraṇa-ĀnkuncanjanyaŚula : Reduction in this symptoms is highly significant on 7th day as well as 30th day. Also mean rank remains constant from After treatment and after 2nd f/u in both group. The range of motion of both knee joint is back to normal after treatment, its due to properties of Agnikarma with Tamrashalka.

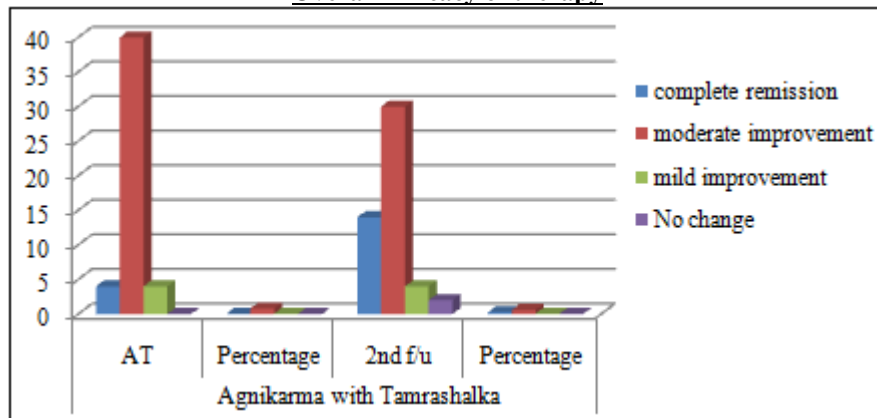
Sandhispuṭan: Statistically showing significant result in both treatments while by observing, there is no reduction in this symptoms was seen. As crepitus is caused due to degeneration of the structures in the knee joint hence it is quite difficult to correct the degeneration in such short period .So due to this reason the crepitus remain unchanged.

Sakaṣṭaaalan (Walking time): It is rate at which a patient is able to walk the distance of 21 meters . It is calculated in seconds and found to be increased if knee joint are involved in some kind of disorder. The average reduction in the walking time is decreased after treatment as well after 2nd f/u. These values are found highly significant. It can be stated that Agnikarama with Tāmraśalākā provides good overall relief in JānusandhigataVāta., which reflected in the faster walking by patients i.e. reduction in walking time.

Overall Efficacy of Agnikarma with Tamrashalka:

Gradation	Agnikarma with Tamrashalka			
Grade	AT	Percentage	2nd f/u	Percentage
complete remission	4	8%	14	28%
moderate improvement	40	80%	30	60%
mild improvement	4	8%	4	8%
No change	2%	4%	2	4%

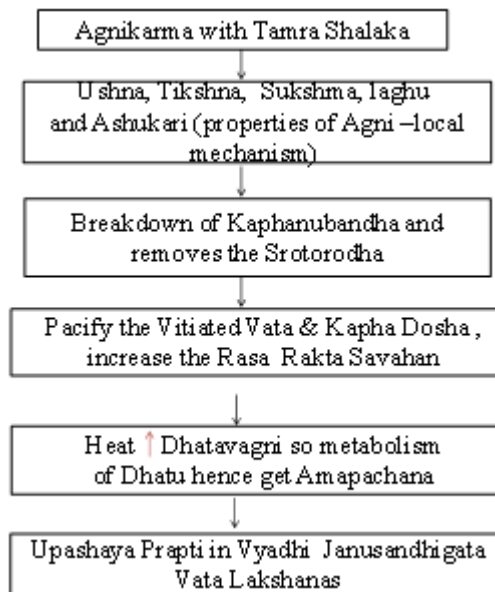
Overall Efficacy of therapy



- In Agnikarma Gr. 8% after treatment and 28% after 2nd f/u had complete remission with 100% relief, 80% after treatment and 60% after 2nd f/u had moderate improvement, 8% had mild improvement. 2% had no change found in all symptoms of JānusandhigataVāta.
- The external SnehanaSwedana therapies are extensively practiced in SandhigataVāta. The present clinical study has been conducted to **evaluate the Efficacy of Agnikarma With Tamraśalāka In JānuSandhigataVāta.** The Efficacy of therapy is being discussed here on individual signs and symptoms of JānusandhigataVāta.
- Statistically highly significant reduction in Śula (pain) Sandhispuṭan and walking Time signifies that Agnikarma with Tamrashalka brings considerable overall relief in the presentation of this disease.

5. Discussion

Mode of Action of Agnikarma



- Jānusandhigata Vāta is produced by vitiated Vāta Doṣa with Anubandha of Kapha By virtue of Uṣṇa, Tikṣṇa, Sukṣma and Aśukāri guna , Agnikarma rendered best therapy to pacify Vāta as well as Kapha Doṣa. The Agnikarm was done by red hot Tamrashalaka the physical heat transferred as therapeutic heat to Twak Dhātu by producing Samyak Dagdha Vrana. This therapeutic heat acted in the following ways:
- Uṣṇa, Tikṣṇa, Sukṣma and Aśukāri guna removes the Srotāvarodha followed by increase in Rasa Rakta Savnāhana (blood circulation) to Jānu Pradesha which pacify the vitiated Vāta and Kapha Doṣa. Probably, it flushed out the pain producing substances from the Jānu region and provided relief in pain and stiffness to the patients, ultimately.
- Therapeutic heat might have increased the Dhātavagni which helped in the digestion of Doṣa followed by increased metabolism of Dhātu in proper way. Further, promotion of nutrition to Jānu Sandhi from Purva Dhātu took place and in this way Asthi and Majjā Dhātu might have become more stable to provide relief from symptoms to the patients.
- Equilibrium state of Doṣa provides relief from the disease conditions which is achieved
- by application of therapeutic heat to the deeper tissue like Mamsa and Asthi Dhātu by the process of neutralization of Śīta Guna of Vāta and Kapha Doṣa .
- According to scientist Dr.VenHanff, in the heat burns place the local tissue metabolism improves, thus various metabolic and rejuvenating changes take place at the site of heat burns, thus it leads to increased demand of oxygen and nutrient of the tissues at the site of heat burn. It also excretes the unwanted metabolites and toxins.
- Due to increased local metabolism, the waste products (metabolites) which are produced gets excreted, which normalize the blood circulation thus resulting in reduction in intensity of pain .
- Provided that the heating is not excessive, it appears to reduce the excitability (quick response to stimuli) of nerves . (Indian Journal of Ancient Medicine and Yoga Volume 5 Number 1, January - March 2012,Clinical Efficacy of Agnikarma in the

Management of Sandhigata Vata w.s.r. to Cervical Spondylosis by Vyasadeva Mahanta, T. S. Dudhmal, S. K. Gupta)

6. Conclusion

- Agnikarma with Tāmraśalākā were found significant effect in Jānusandhigata Vāta. (i.e. p value is $P < 0.0001$)
- Efficacy of Agnikarma with Tāmraśalākā in Janusandhigata Vata is Statistically significant as $P < 0.0001$ in the symptoms viz- Śūla, Śoṭha, Sparśasahatva, Ākuncan Prasāranjnya Śūla (Stiffness), Sandhispuṭan and Skaṣṭacalan.

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