Clinical Efficacy/Safety of Therapeutic Combination; Kshirbala Taila Matra Basti, Vatari Guggulu, Maharasnadi Kwatha and Narayan Taila in the Management of Osteoarthritis Knee (Sandhivata): A Prospective Open Label Study

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ABSTRACT

Introduction: Osteoarthritis (OA) knee is the most frequent joint disease encountered in the clinical practice and a leading cause of disability in the elderly. It is a chronic degenerative disorder of multi-factorial etiology characterized by loss of articular cartilage, hypertrophy of bone at the margins, sub-chondral sclerosis and range of biochemical and morphological alterations of the synovial membrane and joint capsule. The clinical presentation of OA is similar to Sandhivata described under Vatavyadhi in Ayurveda.

Objectives: To evaluate the clinical efficacy and safety of Kshirbala Taila Matra chikitsa along with Vatari Guggulu, Maharasnadi Kwatha internally and local application of Narayan Taila in the management of OA knee.

Materials and Methods: A prospective, interventional, open-label study was carried out at the Regional Ayurveda Research Institute for Mother and Child Health (RARIMCH), Nagpur. Sixty patients in the age group 35-65 years with primary OA of knee joint fulfilling the diagnostic criteria were enrolled. A combination of Kshirbala Taila Matra Basti for 27 days in three courses (each of 9 days) along with Vatari Guggulu, Maharasnadi Kwatha orally and local application of Narayan Taila locally, was administered for 12 weeks. Subjects were followed every fortnightly during treatment and after 4 weeks of completion of treatment. Assessment was done at every two weeks on the basis of change in pain, stiffness and physical function using the validated modified western ontario and McMster Universities osteoarthritis index (WOMAC) questionnaire, visual analog scale (VAS) scale and global Assessment of disease activity scale.

Observations and Results: A significant reduction in total WOMAC score (p-value < 0.001) was observed after the treatment of 12 weeks and also at the end of 16th week. The mean knee joint pain score assessed on VAS was 8.05 which reduced significantly to 5.52 on 84th day and 5.37 on follow-up (p < 0.001). The mean score of global assessment of disease activity at baseline was 80.17, which reduced to 51.17 on 84th day and 49.00 on follow up (p < 0.001). No adverse events were reported during the course of treatment.

Conclusion: The therapeutic regimen Kshirbala Taila, Matra Basti and Vatari Guggulu, Maharasnadi Kwatha along with topical application of Narayana Taila is safe and significantly effective (P < 0.001) in all the cardinal symptoms of OA of knee joint.

Keywords: Global assessment of disease activity score, Kshirbala Taila, Maharasnadi Kwatha, Matra Basti, Narayana Taila, OA knee, Sandhivata, Vatari Guggulu, WOMAC Score,


Source of support: Nil
Conflict of interest: None

INTRODUCTION

OA or degenerative joint disease is characterized by degradation of joints, articular cartilage and sub-chondral bone. It is one of the major health concerns in India, with a prevalence of 22 to 39%. As per European league against rheumatism (EULAR) recommendations; treatment of OA knee varies from person to person, taking into account factors such as age, co-morbidity and the presence of inflammation. Optimal management of OA knee requires a combination of pharmacological and non-pharmacological treatment modalities. Non-pharmacological treatment of OA knee includes regular education, exercise, appliances (sticks, insoles) and weight reduction. Exercises, especially those directed towards increasing strength of quadriceps and/or preserving normal mobility of the knee are strongly
Clinical Efficacy/ Safety of Therapeutic Combination

OBJECTIVES

Clinical evaluation of efficacy and safety of the therapeutic combination of Kshirbala Taila Matra Basti along with Vatari Guggulu, Maharasnadi Kwath and Narayan Taila in the management of OA knee.

MATERIALS AND METHODS

Study Design and Setting

It was an open label, non-controlled, prospective, interventional trial, conducted at RARIMCH, Nagpur. Recommended. Traditional non-selective non-steroidal anti-inflammatory drug (NSAIDs) and cyclooxygenase Type 2 selective NSAIDs (COX-2s) are commonly used to treat arthritis and inflammatory conditions, as well as acute and chronic pain. However, non-selective NSAIDs can cause a variety of gastrointestinal (GI) toxicities. Further, the American College of Rheumatology (ACR) guidelines for the management of osteoarthritis knee recommended non-pharmacologic therapies as a first line course of treatment.

Arthritis (both OA and rheumatoid arthritis) is one of the foremost diseases for which patient seeks complementary or alternative medicine option. Because of the limitations of conventional medicine, there is an uptrend among patients for use of alternative therapies, like herbal medicine, acupuncture, etc., according to reports about 60–90% of non-satisfied arthritis patients are likely to use the complementary and alternative medicine (CAM) approach for their disease.

The clinical presentation of osteoarthritis is similar to Sandhivata described under Vatavyadhi in Ayurveda. The etiology of Sandhivata is attributed to improper diet, lifestyle and old age, etc., leading to degeneration of body tissues (Dhatu kshaya) which causes aggravation of Vata (humour responsible for all movements in the body) and reduction in Shleshak Kapha (fluid present in joints) The aggravated Vata causes degeneration, pain and inflammation in joints. There is increased Vata dosha in old age. Basti (medicated enema) is considered superior amongst Panchakarma (five treatment for elimination of vitiated Dosha from the body) and treatment of choice in Vata Dosha and Vatapradhana (mainly due to vitiation of vata dosha) diseases. Matra Basti is very beneficial for the persons suffering with Vatavyadhi. Keeping in view the literature about the role of aging and Vatadosa in the manifestation of Sandhivata, Matra basti with Ksirabala Taila, was taken into consideration along with Vatari guggulu, Maharasnadi Kwatha and Narayan Taila for this study to evaluate the efficacy and safety of this therapeutic combination in the patients of OA of knee.

Study Participants

Total 60 patients of OA of the knee were recruited from the outpatient department of Regional Ayurveda Research Institute, Nagpur after obtaining informed written consent. Patients were screened in accordance with inclusion and exclusion criteria mentioned in the protocol.

Inclusion Criteria

Patients of either sex aged between 35 and 65 years; having pain in the affected knee joint(s) for ≥3 months with radiological changes as per Grade I to III of Kellgren and Lawrence radiological scale; fulfilling the diagnostic criteria of osteoarthritis knee recommended by the American College of Rheumatology (ACR), who were willing to participate in the study for 16 weeks were included.

Exclusion Criteria

Patients with the history of knee joint trauma/fracture; surgical/diagnostic intervention with reference to the affected knee joint(s) were excluded. Further, the patients with any deformity of knee, hip or back altering the gait and posture of the patient, gross disability in performing daily normal routine, i.e., bedridden patients or confined to wheelchair were also excluded. Patients with other comorbidities such as gouty arthritis, rheumatoid arthritis, and psoriatic arthritis were excluded. Moreover, patients with uncontrolled hypertension (>160/100 mm of Hg) and uncontrolled diabetes mellitus B.S. (F) >126 mg% and/or B.S. (2 hr PP) >200 mg% and or HbA1c > 6.5%, evidence of malignancy were also vetoed from the study. The patients on prolonged (>6 weeks) medication with corticosteroids, antidepressants, anti-cholinergic, etc. were excluded. Patients with past history of atrial fibrillation, acute coronary syndrome, myocardial infarction, stroke or severe arrhythmia in the last 6 months, severe renal or hepatic damage, and pregnant/lactating women were also excluded.

Study Interventions: The trial drugs prepared as per Ayurvedic Formulary of India (AFI) were taken from good manufacturing practices (GMP) certified Ayurvedic pharmaceutical company for the study. Total 27 Matra Basti (60 ml oil enema) with Kshirbala taila was given in RARIMCH under CCRAS, Ministry of AYUSH, as per the good clinical practices (GCP) guidelines and the declaration of helsinki. The study protocol was approved by the Institutional Ethical Committee of the institute, and registered with Clinical Trial Registry of India (CTRI/2013/12/004241 Registered on 24/12/2013).
three courses of nine days each (i.e., from day 1st to 9th and 30th to 38th and 60th to 68th day). The therapeutic regimen of Matra Basti consisted of Snehana (oleation) with Narayana Taila, Svedana (hot fomentation) with Baspa Sveda (water steam) and Matra Basti with 60 ml of Kshirbala Taila (AFI–Part I, 8:11; PP 132). Kshirbala Taila Matra Basti was administered during the daytime after a meal in IPD at the institute. Vatari Guggulu (AFI–Part I, 5:10; PP 70–71) was administered orally in the dose of 500 mg. two tab thrice a day with lukewarm water after food for 12 weeks. Maharasnadi Kwatha (AFI - Part I, 4:28; PP 60–61) was administered orally in the dose of 20 ml twice a day with lukewarm water after food for 12 weeks. Narayana Taila (Ayurvedic Formulary of India (AFI)–Part I, 8:23; PP 138) was applied twice a day on affected knee joints for 12 weeks. To monitor drug compliance, relief in symptoms and adverse drug events the subjects were assessed biweekly, (i.e., at the end of 14th day, 28th day, 42nd day, 56th day, and 70th day and 84th day) and assessment of post-treatment effect without intervention was carried out in the follow-up visit on 16th week (112th day).

Study Procedure: On the enrolment day at baseline (Visit 1), patient’s demographic profile, medical history, general physical and systemic examination, assessment of clinical/Ayurvedic parameters were recorded. Assessment of severity of affected knee joints was done by recording the scoring on WOMAC questionnaire, VAS, patient’s global assessment of disease activity scale (PGADA) and physician’s global assessment of disease activity scale (GADA). The patient was then admitted in the (indoor patient department) IPD at the institute and Kshirbala Taila Matra Basti were administered for nine days. After discharge, the oral and local component of the trial drugs and drug compliance report form were handed over to the patients for taking at home. Total 27 Matra Bastis were given in three courses of nine days each (i.e., from day 1st to 9th and 30th to 38th and 60th to 68th day). Subsequent visits were planned at an interval of two weeks 14th day (Visit 2), 28th day (visit 3), 42nd day (visit 4), 56th day (Visit 5), 70th day (visit 6) and 84th day (visit 7). The patients were assessed and study medications were given at each subsequent visit till 84th day. The patients were assessed without medication in follow-up visit on day 112th (visit 8) to monitor the lasting effects of the trial drugs. Details of clinical assessment and study schedule are given in Flow Chart 1.

The data of all the patients were recorded in pre-designed case report forms (CRFs) and were also entered

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**Flow Chart 1: Study schedule**

- Prior to selection (Screening visit)
  - Informed consent
  - Eligibility criteria
  - Physical examination and laboratory criteria
- During selection (baseline visit)
  - Personal identification and demographic profile
  - Medical history, general physical, systemic examination
  - Clinical assessment
  - Assessment of Ayurvedic parameters
  - WOMAC Score
  - VAS Score for pain
  - Patient’s GADA and Physician’s GADA
  - Instruction to come after 2 weeks
- During treatment, i.e. on 14th, day 28th, 42nd, 56th, 70th, 84th day
  - Assessment of drug compliance
  - Physical examination and clinical assessment
  - WOMAC Score
  - VAS Score for pain
  - Patient’s GADA and Physician’s GADA
  - Issue of drug and drug compliance report form
  - Instruction to come after 2 weeks
- At the end of the treatment i.e.on 84th day
  - Assessment of Ayurvedic parameters
  - Physical examination and clinical assessment
  - WOMAC Score
  - VAS Score for pain
  - Patient’s GADA (Global Assessment of Disease activity) and Physician’s GADA
  - Laboratory investigations
  - Instruction to come after 4 weeks
- Assessment at the end of 16 weeks (112th day) (without medication follow up)
  - Physical examination and clinical assessment
  - WOMAC Score
  - VAS Score for pain
  - Patient’s GADA and Physician’s GADA
in electronic formats (e-formats) designed in MS-Excel with many data validation checks to ensure correct data entry. The e-formats and xerox of the CRFs along with the scorings and laboratory investigation reports were sent to the councils headquarter on a monthly basis for the purpose of clinical trial monitoring.

Out of the total 60 patients enrolled in the study eight dropped out during the course of the study. Intention-to-treat analysis was done, and the data of all those patients who have completed at least 14th day visit were imputed by last observation carried forward method (LOCF). Hence, the data of a total 60 patients was used for statistical analysis. Flow Chart 2 shows the outflow of the patients in the study.

**Efficacy evaluation through Outcome**

The primary outcome measure was changed in WOMAC total score and was assessed at baseline and thereafter biweekly in each visit. The WOMAC questionnaire used in this study has three sections; section 1 was for assessment of knee joint pain (5 Qs), section 2 was for assessment of joint stiffness (2 Qs) and section 3 was for the assessment of difficulty in physical function (17 Qs); total of 24 symptoms and each was rated on a 5-point scale of severity. The secondary outcome measures changed in WOMAC stiffness and physical function scores, change in knee pain on the VAS, change in Global Assessment of Disease Activity (GADA) scores as per patient and physician. The change in specific symptoms of Sandhivata mentioned in Ayurveda has also been assessed at baseline and after completion of the treatment (84th day) and (112th day) 4 weeks after stopping the intervention.

**Statistical Analysis**

The efficacy and safety parameters were analysed according to the intention-to-treat analysis. Missing values were imputed by the LOCF method. Statistical analysis was performed using Statistical packages for Social Sciences version 15.0. Statistical significance was defined as p-value < 0.05. Primary and secondary outcome measures; change in the scores of WOMAC, VAS and GADA from the baseline to 12 weeks were analysed by using paired t-test. Symptomatic relief was assessed in terms of presence and absence of the symptoms at baseline and at 84th day and 112th day.

**OBSERVATIONS AND RESULTS**

Data of total 60 patients (16.7%) males and (83.3%) females were used for statistical analysis. The baseline demographic data of the participants are summarized in Table 1. Data revealed that maximum patients (46.7%) were in the age group of 60 to 65 years followed by (26.7%) in the age group of 54 to 59 years. 60% of the patients were above the poverty line; most of the patients (93.3%) cases belonged to an urban area; 70% patients were housewives and most of the patients (81.7%) had emotional stress.

<table>
<thead>
<tr>
<th>Variables</th>
<th>n (%)</th>
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</thead>
<tbody>
<tr>
<td>Age</td>
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<tr>
<td>36– 41</td>
<td>1 (1.7%)</td>
</tr>
<tr>
<td>42– 47</td>
<td>7 (11.7%)</td>
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<td>48– 53</td>
<td>8 (13.3%)</td>
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<tr>
<td>54– 59</td>
<td>16 (26.7%)</td>
</tr>
<tr>
<td>60– 65</td>
<td>28 (46.7%)</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>10 (16.7%)</td>
</tr>
<tr>
<td>Female</td>
<td>50 (83.3%)</td>
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<tr>
<td>Marital status</td>
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<tr>
<td>Married</td>
<td>49 (81.7%)</td>
</tr>
<tr>
<td>Widow(er)</td>
<td>11 (18.3%)</td>
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<tr>
<td>Educational status</td>
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<tr>
<td>Illiterate</td>
<td>7 (11.7%)</td>
</tr>
<tr>
<td>Read and write</td>
<td>53 (88.3%)</td>
</tr>
<tr>
<td>Occupation</td>
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<tr>
<td>Desk work</td>
<td>11 (18.3%)</td>
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<tr>
<td>Field work with physical labour</td>
<td>5 (8.3%)</td>
</tr>
<tr>
<td>Field work</td>
<td>2 (3.3%)</td>
</tr>
<tr>
<td>House wife</td>
<td>42 (70.0%)</td>
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<tr>
<td>Socio-economic status</td>
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</tr>
<tr>
<td>Above poverty line</td>
<td>36 (60.0%)</td>
</tr>
<tr>
<td>Below poverty line</td>
<td>24 (40.0%)</td>
</tr>
<tr>
<td>Habitat</td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>56 (93.3%)</td>
</tr>
<tr>
<td>Semi-urban</td>
<td>1 (1.7%)</td>
</tr>
<tr>
<td>Rural</td>
<td>3 (5.0%)</td>
</tr>
<tr>
<td>Emotional stress</td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>49 (81.7%)</td>
</tr>
<tr>
<td>Moderate</td>
<td>9 (15.0%)</td>
</tr>
<tr>
<td>Too much</td>
<td>2 (3.3%)</td>
</tr>
</tbody>
</table>
Effect of Trial Drugs on Total WOMAC Score and its Different Domains, i.e., Pain, Stiffness and Physical Function Domain Scores

The effect of treatment is shown in Table 2, and Graphs 1 and 2. The mean total WOMAC score on the baseline was 66.82, which reduced to 41.47 on 84th day and 40.08 on 112th day (follow-up without medication). A significant reduction in total WOMAC score (p-value <0.001) was observed after the treatment of 12 weeks and also at the end of 16th week in comparison to the baseline advocating that the therapy is significantly effective in the patients of osteoarthritis knee (Sandhivata).

The mean of WOMAC pain score reduced from 13.53 to 8.12 on 84th day and 790 on follow-up visit showing highly significant improvement in joint pain (p <0.001). Further, in WOMAC stiffness domain, the mean at baseline was 5.77 which reduced to 2.78 on 84th day and 2.60 on follow-up visit, showing highly significant (p <0.001) reduction in joint stiffness. Similarly, in WOMAC physical functioning domain, the mean at baseline was 47.55, decreased to 30.57 on 84th day and 29.65 on follow-up visit which is showing highly significant (p <0.001) improvement in physical functions.

At the baseline visit, the mean knee joint pain score assessed on VAS was 8.05 which reduced significantly to 5.52 on 84th day and 5.37 on follow-up visit, showing significant relief in joint pain (p <0.001). The mean score of patient’s global assessment of disease activity at baseline was 80.17, which reduced to 51.17 on 84th day and 49.00 on follow-up visit showing highly significant improvement (p <0.001). Further, the mean score of physician’s global assessment of disease activity at baseline was 78.17, which reduced to 50.33 on 84th day and 47.17 on follow-up visit showing highly significant relief (p <0.001). The results in disease-specific Ayurvedic parameters were satisfactory; 25% of patients got relief in Sandhiśulak (knee pain), 42.5% patients got relief in Sandhiśul (swelling in knee joint), 11.7% of patients got relief in Vatapūrādrutā Sparsa (Creptation), only 1.7% patients got relief in Prasāruna Akuncana Vedana (Painful movements of the affected joint) and 15.0% of patients got relief in Apravṛutti (restricted movement).

### Table 2: Effect of trial drugs on outcome parameters

<table>
<thead>
<tr>
<th>Outcome parameters (n = 60)</th>
<th>Baseline</th>
<th>84th day</th>
<th>Follow up at 112th day</th>
<th>t-valu$</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total WOMAC Score</td>
<td>66.82 (10.651)</td>
<td>41.47 (12.357)</td>
<td>40.08 (12.431)</td>
<td>19.054</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Domain–Pain</td>
<td>13.53 (2.696)</td>
<td>8.12 (2.656)</td>
<td>7.90 (2.589)</td>
<td>14.888</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Domain–Stiffness</td>
<td>5.77 (1.345)</td>
<td>2.78 (1.316)</td>
<td>2.60 (1.304)</td>
<td>15.056</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Domain–Physical functioning</td>
<td>47.55 (7.599)</td>
<td>30.57 (6.990)</td>
<td>29.65 (9.089)</td>
<td>18.652</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Visual analog score (VAS)</td>
<td>8.05 (1.199)</td>
<td>5.52 (1.742)</td>
<td>5.37 (1.895)</td>
<td>10.095</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Patient’s global assessment of disease activity score</td>
<td>80.17 (11.273)</td>
<td>51.17 (16.374)</td>
<td>49.00 (18.567)</td>
<td>12.672</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Physician’s global assessment of disease activity score</td>
<td>78.17 (10.969)</td>
<td>50.33 (15.510)</td>
<td>47.17 (17.281)</td>
<td>13.167</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Values are reported as mean (SD); $t$-compared using paired t-test at baseline and 84th day; *p-value < 0.05 considered as significant

Graph 1: Effect of trial drug on outcome parameters

Graph 2: Effect of trial drug on outcome parameters
Effect of Trial Drugs on Safety Parameters

The effect of this treatment on various safety parameters, such as liver function tests and renal function tests, was assessed on the baseline and at 84th day visit. The values were within normal limits during the entire trial period (Table 3, and Graphs 3 and 4). Further, no adverse events or adverse drug effects were reported during the indoor and outdoor course of treatment. These observations validate that these classical drugs are safe for human use.

DISCUSSION

The primary objective of this study was to evaluate the efficacy of the age-old combination of classical Ayurvedic therapy Kheerbala Taila Matra Basti and Vatari guggulu along with Maharasnadi kwatha and local application of Narayan Taila in the management of osteoarthritis on the knee. In the present study 83.3% of the patients were female, this supports that osteoarthritis of knee is more commonly found in women than men.15 Sex hormones have long been considered a possible factor in the systemic predisposition to osteoarthritis, especially in women.16-18 As per agewise distribution, maximum numbers of patients (46.7%) were in the age group of 60 to 65 years followed by (26.7%) in the age group of 54 to 59 years. This is the age wherein deterioration of Dhatu (tissues) starts. These observations support the causative pathology of disease which involves Vataprakopa (vitiation of Vata) due to aging and Asthi Dhatu Kshya (degeneration of Bone tissue) leading to Sandhivata.

The Basti chikista (treatment) was employed as per classical references with the standard protocol. Snehana with Narayana Taila and Svadana with Baspa Svada together produced Vata samaka (pacification of Vata), Balya (strengthening...
ing), Anulomaka and Pachana (tissue metabolism) effect. It emphasizes the classical principle of repeated Snehana-Sevdana for Vata disorders the standard in relieving the stiffness of joints thus making them more flexible. Kshirabala Taila contains Kshira (milk), Bala (Sida cordifolia) and Tila Taila (Sesamum indicum oil). All these drugs possess mainly Snigdha Guna (unctuous property) and Vatadhara (alleviates vitiated Vatadosa) properties, which might have helped in controlling the vitiated Vata resulting in relieving the joint pain in osteoarthritis knee. Kshirabala Taila Matra Basti due to its Brimhana (nourishing) action might have provided the nourishment to the Dhatu resulting in an improvement in physical functions of the knee joint.

Sida cordifolia is the main content of Kshirabala Taila, and one of the important contents of Narayana Taila and Maharasndi Kwatha. Pharmacological studies have demonstrated that Bala possesses vaccine and vasincine, which are having anti-inflammatory and analgesic activity. Vatari guggulu was given orally which contains Eranda Taila (Ricinus communis), Sudha Gandhaka (Sulphur purified), Sudha Guggulu (Commiphora wightii), Haritaki (terminalia chebula), Vibhitaka (terminalia belerica), and Amalaki (Emblica officinalis). Most of these drugs have Tikta, Katu, Kasaya Rasa, Usna Virya, and Kupipaka with Vata Kapha Samana (pacification of Vata and Kapha) properties. Vatari guggulu has Guggulu (Commiphora wightii) as its base, it has demonstrated anti-inflammatory activity of crude drug and standardized extract containing guggulsteron in animal models. Clinical studies have also shown effectiveness of Commiphora wightii in the management of osteoarthritis. Castor oil is another important constituent of Vatari guggulu. Ricinoleic acid present in castor oil has anti-inflammatory effect. Maharasndi Kwatha contains Rasna (Pluchea lanceolata), Dhanvanaya (Fagonia cretica), Bala (Sida cordifolia), Eranda-Mula (Ricinus communis), Devadaru (Cedrus deodara) and Shati (Hedychium spicatum) etc and all these drugs possess Vata pacifying (shamania) properties. A study by Vandana Shrivastava et.al on ethanolic extract of Rasna exhibited significant anti-inflammatory activity. A new quaternary base chloride called pluchine was isolated from Pluchea lanceolata. This substance hardens muscle relaxing, spasmylic and anti-inflammatory effects. Maharasndi Kwatha has significant analgesic and anti-inflammatory properties. Sinhanada Guggul and Narayana Taila studied in albino rats has shown significant anti-inflammatory effect. This therapeutic combination of Ksheerabala Taila Matra Basti, Vatari Guggulu, Maharasndi Kwatha and gentle local massage with Narayan Taila is collectively having Vata-shamanak (palliation of Vata humour), Kapha-shamanak (palliation of Kapha humour), Aam-pachan (digestion of toxic wastes), Deepan (empowering agni digestive fire), Vedana-sthapan (subsidence of pain) and Rasayana (rejuvenation) properties. Due to these properties, it normalizes vitiates Vata and helps to relieve joint pain and stiffness in osteoarthritis knee.

CONCLUSION

The study concluded that the therapeutic regimen Kshirabala taila matra basti and Vatari guggulu, Maharasndi kwatha along with topical application of Narayana taila is safe and significantly effective (p < 0.001) in all the cardinal symptoms of osteoarthritis knee.

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हिंदी सारांश
क्षीरबला तेल मात्रा बरसा, वातारी गुणधुर, महाराष्ट्री में ब्राह्मण तथा नारायण तेल से संयुक्त चिकित्सा का संबंध अध्ययन में चिकित्सीय प्रभाव /
सूचना मूल्यांकन

‘विद्रोह’ सम्राट, 'यू. आर. शेखर', 'रुपनी', 'संयोजक राज', 'भाद्र', 'राजकेश राज', 'रूपचा सिंघल',
'नारायण भ्रमण राजस्थान', 'कर्तार शिंदे धीमान

भूमिका: जाननुता संविधान विज्ञानक क्विलेट में दर्शकों अधिक पारे जाने वाली संबंधत वाचन है। जब आमकर्षण: द्राक्षरूपक में साधनों जाने वाली वाचन है। यह एक बहुरूपी निदान वाली जीवन वाचन है जो संयुक्त कार्यों का ह्रास, अथवा के निरस्त होने पर होने की पृथक्क, सफलताओं में समयित स्थाना समयितता तथा दानवादित्व कृतिक और संयुक्त कृतिक्य के जीव रसायनिक और अक्षमीक के परिवर्तन के क्षेत्रों द्वारा परिवर्तित होती है। आयुर्वेद में इसका वर्णन तत्त्वात्मिक में किया गया है।

विषय: क्षीरबला तेल मात्रा बरस्ता, वातारी गुणधुर, महाराष्ट्री में ब्राह्मण तथा नारायण तेल से संयुक्त चिकित्सा का जाननुता संबंध अध्ययन से प्रत्यय शरीरों पर प्रभाव एवं निसर्गदस्ता का अध्ययन।

सामान्य एवं विनियम: वर्तमान अध्ययन के लिए अमेरिका कोलेज ऑफ रियोस्टोलोजी के द्वारा संबंधित ने निर्धारित नैदानिक मापदंडों को पुनः करने वाले 60 रोगियों (35 और 65 वर्ष के मध्य) का चालन क्षेत्र आयुर्विज्ञान मातृ एवं शिल्प स्वास्थ्य अनुसंधान संस्थान, नागपुर के बीजेक्स लोकी विभाग से किया गया।

चयनित रोगियों में नारायण तेल से सत्याप लेख तथा वात्र शेड देने के पश्चात क्षीरबला तेल की 27 नाता संबंध दी गई (प्रथम दिन से नवे दिन तक, 100 दिन से नवे दिन तक, 60 दिन तक तथा 60 दिन तक तक)। वातारी गुणधुर क्षेत्र रोगी, महाराष्ट्री तेल का प्रश्न तथा नारायण तेल का स्वास्थ्य प्रभाव 12 सप्ताह तक किया गया। रोगियों की 15 दिन पर जाभ की गई तथा चिकित्सा बंद करने के उपयोग दार्ज सत्र के बाद पुनः जाभ की गई।

परिणाम: इस अध्ययन के अंत में यह पाया गया कि उपयोग के प्रभाव स्वयं कुर्ड कोम्मन स्कोर (जिसमें सारे पीड़ा, वरिशा में जड़ता तथा शारीरिक कार्य क्षमता) में साथियों के रूप से महाबुधुर सुधार पाया गया (p<0.001) तथा राखी पीड़ा की तीव्रता में नास (VAS) से सातिक्षेत्रीय रूप से महाबुधुर कमी पायी गई (p<0.001). नास (VAS) से सातिक्षेत्रीय रूप से महाबुधुर कमी पायी गई (p<0.001). जो की लिए संक्षिप्त है कि यह आयुर्विज्ञान संयुक्त चिकित्सा में सातिक्षेत्रीय प्रभाव है।

इस चिकित्सा में नयनच्छ अभिलेख का रूप पर कई दुनियाओं में नहीं पाया गया।