

Systematic Review Of Management Of Janu Sandhigata Vata (Knee Osteo Arthritis) Through Ayurveda

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DOI: 10.47750/pnr.2023.14.03.265

Abstract

Introduction: Osteo arthritis of the knee is a degenerative disease that comes by age in human beings. It osteoarthritis of knee is the commonest joint disease. On the basis of classical symptoms of sandhi gata vata, it can be correlated with osteoarthritis. Considering the higher incidence of this disease due to various faulty lifestyles and Vatik Ahara vihara, it is necessary to elaborate on safe and effective management in Ayurveda sciences.

Aim and objectives: Aim: this systemic review study is Basically planned to review previous conducted clinical researches based on the type of intervention i.e. Various *panchakarma* interventions used for management of *Janu Sandhigata Vata* and to make its specific treatment protocol.

Objective: to assess the efficacy and safety of *panchakarma Procedures* in management of *Janu Sandhigata Vata* .

Material and methodology: the information relevant to the study is compiled from previous research studies, i.e. Clinical trials, randomized or not having interventions of various panchakarma modalities and published in various peer reviewed journals and also available on multiple databases such as Pubmed, google scholars, Shodhaganga, Cochraine library etc. From the year 2000 to October 2022 irrespective of their study centre. References of key articles were hand searched using the keywords such as '*Janu Sandhivata* ', '*Janusandhigata Vata*' '*Panchakarma*', '*Shodhana*', '*Matra Basti*', '*Snehapana* ', '*JanuDhara*', '*Upnaha*' etc. Database of CTRI was also searched with the same keywords to get a list of current and completes researches on *Janusandhigata Vata*. Only those manuscripts which were published in English language were eligible for inclusion. Screening of both the title and abstract and full text of the retrieved articles were conducted independently by two reviewers and a third reviewer resolved any disagreement. A narrative synthesis of the characteristics of study participants and types of intervention with specific outcomes are mentioned.

Study selection

Inclusion criteria: Data-analysis was focused entirely on only ayurvedic controlled clinical trials (randomized and non-randomized controlled trials conducted in patients suffering with Janu Sandhigata Vata within Duration year 2000 to October 2022.

Exclusion criteria: Ayurvedic review articles on *Janu Sandhigata Vata* Ayurvedic clinical studies conducted on complications of *Janu Sandhigata Vata* , related animal studies, case study or case series, observational study& modern sciences studies and researches were excluded from the study.

Assessment parameters: These studies were assessed based on the inclusion & exclusion criteria, type of methodology, assessment parameters, type of intervention used (Shodhana or panchakarma, Shamana management or their combination) and its outcomes measures reported.

Observations and results: A total of 53 articles were retrieved after searching the selected database i.e.Pubmed, web of science, Shodhaganga, Medknow, google scholars and CTRI using a comprehensive search strategy. Out of 53 manuscripts 13 were removed as they were literature review. Full text 40 research papers were identified but amongst them, 17 were excluded as they did not match the methodology.

This systematic review is based on information from a total 23 interventional studies by critically analysing them to verify the necessity and assess the role of *panchakarma chikitsa*.

1. INTRODUCTION :

Osteoarthritis is commonest the joint disorders. In ayurveda the disease sandhigata vata (osteoarthritis) is described under vatavyadhi [1]. As per the report of who and arthritis foundation, knee osteoarthritis is a most common form of degenerative disorder of knee [2]. Normally knee joints bone covers with articular cartilage which is a dense jelly like material. It generally covers the knee joint to protects bones from joint frictions. When the cartilages has got degenerated, the symptoms of osteoarthritis have occurred. Further due to cartilage degeneration also changes in the bone underneath and damages soft tissues which are situated close to knee joints[3].

knee osteoarthritis resembles with the closeness of *janu sandhivata* (osteo-arthritis of knee)[4]. Due to vata predominancy disorder. Basti chikitsa is the best management of vata disorders[5]. Basti is the whole or half management of all *vataj* disorders [6]. In ayurveda there are three types of basti therapy explained and matra basti is one type among them [7]. As per Ayurveda texts, Matra Basti has been included in *anuvasana basti*[8].it is given any types of person without restrictions and can be given in all the seasons without any complications[9].

it can be given in simplified manner and as described by acharya charaka for the management of the Vata diseases at Marma Sthanas [10]. *Snehana therapy* (oleation treatment) is a very crucial therapy for both shamana(palliative) and sodhana(bio-purification). *Oral use of Sneha* is also known as Abhyantara Sneha karma and it is also defined as oral use of *snehana substances*.

1.1 Aim and objectives

The main object of this study is to propagate safe and effective management of *janau sandhigata vata by using shamana and sodhana therapies*. For this purpose current systemic review is trying to attempt various research manuscripts related to treatments of *janu sandhigata vata with* various herbal, herbo- mineral compounds and *shodhana karma*.

2. MATERIALS AND METHODS:

2.1 study selection

Data related to all previous *ayurvedic* clinical studies conducted in patients of Janu Sandhigata Vata is collected from NCBI and AYUSH research portal from 2002 to 2019. The references of main clinical studies manuscripts which are in english language were searched. Rest are excluded like review studies, case studies, animal studies, or clinical studies in *Ayurveda on any complications of Janu Sandhigata Vata*.

3. OBSERVATIONS AND RESULTS:

Descriptions of these research studies were discussed in details are as under :

1. Kessler cs et al.

Effectiveness of an ayurveda treatment approach in knee osteoarthritis - a randomized controlled trial. Osteoarthritis cartilage. 2018 may;26(5):620-630. Doi: 10.1016/j.joca.2018.01.022. Epub 2018 feb 7. Pmid: 29426006
In this study one hundred fifty-one participants (ayurveda n = 77, conventional care n = 74) were included. Participants received either a multi-modal ayurvedic treatment or multi-modal conventional care with 15 treatments over 12 weeks respectively. Changes of the womac index from baseline to 12 weeks were more pronounced. Results suggest that ayurvedic treatment is beneficial in reducing knee oa symptoms.

2. Jethava, Nilesh G et al.

“Role of Agnikarma in sandhigata vata (osteoarthritis of knee joint).” *Ayu* vol. 36,1 (2015): 23-8. Doi:10.4103/0974-8520.169017. Total of 28 diagnosed patients of janugata sandhivata were registered and randomly divided into two groups. In group-a, agnikarma was done with rajata shalaka while in group-b agnikarma was performed by loha shalaka in four sittings. Assessment in relief of signs and symptoms was done by weekly interval. Agnikarma is effective nonpharmacological, parasurgical procedure for pain management in sandhigata vata (oa of knee joint).

3. Sharma, Aneesh Vasudeva et al.

“Clinical study of *agnikarma* and *panchatikta guggulu* in the management of *sandhivata* (osteoarthritis of knee joint).” *Ayu* vol. 37,1 (2016): 38-44. Doi:10.4103/ayu.ayu_103_14. Thirty-three patients of *janugata sandhivata* were registered and randomly divided into two groups. In group a (n = 18), *agnikarma* was done with *panchadhatu shalaka* once every week for one month while in group b (n = 15), *agnikarma* along with *panchatikta guggulu* orally was given for one month. Weekly assessment was done
it was concluded that *agnikarma* is effective in the management of pain in the *sandhivata*. However, the addition of *panchatikta guggulu* in the treatment provides better efficacy on joint stiffness and crepitus.

4. Grampurohit, Pradeep L et al.

“Effect of Anuvasana Basti with Ksheerabala Taila in Sandhigata Vata (osteoarthritis).” *Ayu* vol. 35,2 (2014): 148-51. Doi:10.4103/0974-8520.146225

In the present study, 30 patients of sandhigata vata were given anuvasana basti with Ksheera Bala Taila. Subjective assessment of pain by visual analog scale and swelling, tenderness, crepitus and walking velocity were graded according to their severity. Anuvasana basti with ksheerabala taila was significant in the subjective symptoms of sandhigata vata.

5. Mangal, Anil et al.

“Clinical evaluation of vatari guggulu, maharasnadi kwatha and narayan taila in the management of osteoarthritis knee.” *Journal of ayurveda and integrative medicine* vol. 8,3 (2017): 200-204. Doi:10.1016/j.jaim.2017.02.001

It was an open label, multicentre, prospective, clinical study conducted on 142 patients of oa knee. Vatari guggulu 500 mg thrice in a day along with maharasnadi kwatha 20 ml with equal amount of water twice daily and narayan taila 20 ml twice in a day for external application with gentle massage for 15 min up to 12 weeks were used to all the study participants. The study provides good evidence in support of the efficacy and safety of the vatari guggulu along with maharasnadi kwatha and narayan taila in the management of osteoarthritis knee.

6. Nipanikar, Sanjay u et al.

“An open label, prospective, clinical study on a polyherbal formulation in osteoarthritis of knee.” *Journal of ayurveda and integrative medicine* vol. 4,1 (2013): 33-9. Doi:10.4103/0975-9476.109549

It was an open label, single center, prospective, clinical study conducted in 36 patients of oa knee. Two capsules of 'tlpl/ay/03/2008' were given to all patients twice daily orally after meals for 180 days. The study provides good evidence in support of the efficacy and safety of the 'tlpl/ay/03/2008' in oa of knee

7. Rai, p k et al.

“efficacy of leech therapy in the management of osteoarthritis (sandhivata).” *Ayu* vol. 32,2 (2011): 213-7. Doi:10.4103/0974-8520.92589.

32 patients with osteoarthritis visiting o.p.d. and i.p.d. of kayachikitsa were selected for the present clinical study. The total duration of treatment was fixed for 6 weeks with the regular weekly follow-ups. The patients registered for the clinical study were not given any medicine internally as well as externally and advised not to take any other drug during the trial period either internally or externally. Traditional leech therapy seems to be an effective symptomatic treatment for osteoarthritis of the knee.

8. Gupta, p k et al.

“Clinical evaluation of boswellia serrata (shallaki) resin in the management of sandhivata (osteoarthritis).” *Ayu* vol. 32,4 (2011): 478-82. Doi:10.4103/0974-8520.96119. In the present study, 56 patients fulfilling the diagnostic criteria of sandhigata vata, divided into two groups. Patients of first group were administered with 500 mg capsule of shallaki, 6 g per day (in three divided doses) with lukewarm water (n=29) and the second group) capsule shallaki as above along with local application of shallaki ointment on the affected joints (n=23). After a course of therapy for 2 months, symptomatic improvement was observed in both the groups at various levels with promising results in the patients of first group.

9. Joshi, alpes h et al.

“Clinical effect of nirgundi patra pinda sweda and ashwagandhadi guggulu yoga in the management of sandhigata vata (osteoarthritis).” *Ayu* vol. 32,2 (2011): 207-12. Doi:10.4103/0974-8520.92588. In this study, a total of 116 patients were registered, out of them 101 patients had completed the full course of treatment, while 15 patients left against medical advice. The 101 patients of sandhigata vata were treated in two groups. Group a: in this group 50 patients of sandhigata vata were treated with nirgundi patra pinda sweda for 21 days and ashwagandhadi guggulu yoga 3 g/day for 45 days was given orally. Group b: in this group 51 patients of sandhigata vata were treated with only ashwagandhadi guggulu yoga 3 g/day for 45 days. To assess the effect of the therapy objectively, all the signs and symptoms of sandhigata vata were given a score, depending upon their severity. Also functional tests like walking time, climbing stairs, and joint movement, were measured as a criteria for assessment. Both the groups showed good results, but group b showed better results in comparison to group a.

10. Sharma, vishnu dutt et al.

“An indigenous approach to manage the osteoarthritis of knee joint with lakshadi guggulu, kalka-patra bandhan and knee traction.” *Ancient science of life* vol. 26,3 (2007): 23-9. The study was done in 10 patients of osteoarthritis of knee. The patients were given lakshadi guggulu tablet, kalka patra -bandhan (bandage of medicinal paste) and knee joint traction. The duration of treatment was 1 month with follow every week. At the end of 4 weeks, statistically significant results were found in the criteria of assessment specifically in severity of pain, deep grading of tenderness, walking distance and movement of knee joint (degree of flexion). Maximum response was observed in the deep grading of tenderness (76%). The combined therapy with lakshadi .guggulu, kalka bandhan and traction therapy in the management of oa of the knee joint was very effective.

11. Rajoria, kshipra et al.

“Clinical study on laksha guggulu, snehana, swedana & traction in osteoarthritis (knee joint).” Ayu vol. 31,1 (2010): 80-7. Doi:10.4103/0974-8520.68192. The present work, 30 clinically diagnosed patients were selected and randomly divided into three groups. Group a treated with laksha guggulu orally, group b treated with snehana & swedana traction, group c treated with laksha guggulu, snehana, swedana & knee joint traction. The various criteria worked upon were joint pain, oedema, tenderness, restriction of joint movement, stiffness, local crepitation, walking distance. Significant results were obtained on pain in joint movement, restriction in joint movement, joint stiffness, local crepitation nearly in all the groups with best result in combined group or group c.

12. Sharma, manisha r et al.

“multimodal ayurvedic management for sandhigatavata (osteoarthritis of knee joints).” Ayu vol. 34,1 (2013): 49-55. Doi:10.4103/0974-8520.115447. 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. The present study reveals that multimodal ayurveda treatment (formulations like *narayana taila*, *eranda sneha*, *dashamula kvatha*, *yogaraja guggulu*, and *ashvagandha powder*) 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 nsoids in the patients.

13. A.k. sharma at al.

A.k. sharma and dinesh kumar singh a scientific study on the role of snehana, swedana and rasnadi guggulu in the management of sandhigatavata (osteoarthritis) the study was conducted in 30 clinically diagnosed cases of sandhigatavata (oa) with an objective to assess the comparative effects of snehana, swedana, and rasnadi guggulu in the management of sandhigatavata (oa) on various scientific parameters. It was observed that statistically significant improvement was noticed in clinical parameters of all the three groups whereas statistically insignificant improvement was observed in functional and haematological parameters of all the three groups though there was improvement in various symptoms clinically in respective groups after the therapy but there was no improvement in joint structures after the therapy in any of the patients. From the results obtained it was inferred that snehana, swedana and rasnadi guggulu treated group showed maximum percentage of improvement than other two groups.

14. Parameshwar Kumar Arora et al.

Journal of research in ayurveda and siddha | year: 2003 | volume: 24 | issue: 1-2 | page: 21-32, comparative study of therapeutic efficacy of samshodhana and samshamana chikitsa in sandhigatavata vis-a-vis osteo arthritis
Total 104 patients were selected in this work aim to undertake a critical literary and conceptual study, detailed demographic and clinical study, and a study to evaluate the efficacy of different therapeutic regimen for the treatment of sandhivata. The response of each therapy prescribed is statistically analyzed and found encouraging. On comparison, combined therapy (where classical yoga vasti was administered prior to drug therapy) was found to be more efficacious than drug therapy alone.

15. A.K. Sharma Kiran Mohite Et Al.

Journal of research in ayurveda and siddha | year: 2003 | volume: 24 | issue: 1-2 | page: 1-10management of sandhigata vata (osteo-arthritis) with shamana and shodhana therpy- a pilot study.
30 cases suffering from sandhigata vata (osteoarthritis) were treated with tikta ksheer vasti in the form of shodhana therapy and panchatikta ghritaguggulu in the form of shamana therapy separately and in combination together. It was observed that when tikta ksheer vasti in the form of shodhana therapy and panchatikta ghritaguggulu used alone in different groups have shown encouraging results in controlling the disease sandhigata vata (osteoarthritis). But when tikta ksheer vasti and panchatikta ghritaguggulu used simultaneously, it produced highly significant improvement in the patients of sandhigata vata (osteoarthritis). It clearly indicates that the administration of either shodhana therapy or shamana therapy separately produces considerable improvement in the patients of sandhigata vata (osteoarthritis), but the simultaneous administration or shodhana and shamana therapy produces highly significant improvement in the patients of sandhigata vata (osteoarthritis) by checking the process of the disease and arresting the progress of degeneration of bones to some extent.

16. Mayuri r. Shah et al.

Charmi S. Mehta, V.D. Shukla, Alankruta R. Dave, N.N. Bhatt Department Of. Kayachikitsa, Department Of Panchkarma And Manasroga, Institute For Post Graduate Teaching And Research In Ayurveda, Gujarat Ayurveda University, Jamnagar, Gujarat, India. A Clinical Study Of Matra Vasti And An Ayurvedic Indigenous Compound Drug In The Management Of Sandhigatavata (Osteoarthritis) , Ayu | Year : 2010 | Volume : 31 | Issue : 2 | Page : 210-217

In this study 33 patients of sandhigatavata completed the treatment. Patients were randomly divided into two groups. Sixteen patients in group-a (sarvanga abhyanga-swedana + matravasti) and 17 patients in group-b (sarvanga abhyanga-swedana+ matravasti+indigenous compound drug). The results of the study indicate that the patients of both the groups obtained highly significant relief in the almost all the signs and symptoms of sandhigatavata.

17. Bhavana pathak et al.

K.K. Dwivedi, 2, K.P. Shukla. Department Of Prasuti Tantra And 2. Kayachikitsa, Institute Of Medical Sciences, Banaras Hindu University, Varanasi - 221 005 (India). Clinical Evaluation Of Snehana, Swedana And An Ayurvedic Compound Drug In Sandhivata Vis-A-Vis Osteoarthritis.

30 patients were selected for the clinical trial after taking proper consent. 3 groups of 10 patients each were formed (group i snehana criteria were based on signs, symptoms and positive findings according to ayurveda and modern system of medicine (american rheum. Asso.). Patients were followed up to after 15 days, 60 days and 90 days of the treatment. Assessment of the result was based on different parameters and symptomatic relief was examined with the help of a four point rating scale according to patient's statement. The overall result shows that complete symptomatic relief was only observed in few patients of iii group. Combination therapy was more effective.

18. Savita sharma et al.

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.

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 the change in pain, stiffness and physical function using the validated modified western ontario and mcmaster 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.

19. Hemanta kumar panigrahi et al.

Journal of research in ayurveda and siddha | year : 2015 | volume : 36 | issue : 1-4 | page : 99-108, the management of osteoarthritis with punarnava guggulu, dashmoola ghrita and kottamchukkadi taila- a prospective multicentre open level study. 158 subjects of either sex aged between 40 and 75 years with primary osteoarthritis (confirmed by kellgren lawrence radiological scale), pain in the affected joint(s) for more than six weeks and who were willing to participate in the study were included in the study. The treatment duration was 14 weeks (12 weeks and follow-up period 2 weeks without drug). The statistical analysis has been done in spss version 15.0. Outcome measures: the efficacy of drug on osteoarthritis was assessed by total womac index score and scores of three subscales i.e. Pain, stiffness and physical function. Results: the mean total womac score at the baseline was 55.54 sd (11.75) which was decreasing to 40.56 sd (13.62) on 28th day, 26.74 sd (13.35) on 56th day, 16.98 sd (11.08) on 84th day and 15.4 sd (10.61) on 98th day of follow up. A decreasing trend in primary outcome measures was observed which is statistically significant (p<0.001). Further, the effect of drug on three subscales was also statistically significant (p<0.001). Conclusion: the study provides fair evidence in support of the efficacy and safety of the punarnava guggulu, dashmoola ghrita and kottamchukkadi taila in the management of osteoarthritis subjects.

20. B. Das et al.

Deptt. Of kayachikitsa, g.a.m. puri.clinical evaluation of nirgundi taila in the management of sandhivata 32 cases were registered for the present study. After 14 days of treatment in trial group- 2. Drug showed significantly effective to reduce all cardinal sign-symptoms and becomes highly significant after 28 days of treatment. In case of crepitation it was highly significant after 14 days of treatment. In control group of effectiveness of the drug was highly significant after 14 days treatment.

21. Dr. Neha sharma et al.

Dept. Of shalya tantra, pt. Khushi lal sharma govt. Aty. College, bhopal (m.p.), 2. Associate professor & h.o.d. of shalya tantra, nia, jaipur. Page : 56-69, januvasti, electrotherapy & traction in the management of janu sandhigata vata under influence of trayodashang guggulu.

To find out a safer yet effective alternative to modern therapeutic drug for management of oesteo arthritis, a clinical trial was conducted in total 30 patients. Combination of januvasti electrotherapy and traction with trayodashang guggulu used as a test of therapy. Various clinical, biochemical and radiological investigations were done pre and post treatment for screening as well as to evaluate efficacy of the therapy. Findings of the study, efficacy and safety, are quite impressive making us recommend combination of januvasti, electrotherapy and traction with trayodashang guggulu as treatment of o.a. without conventional nsaid and/or disease modified agents. No major untoward effects of test of therapy were observed. Results observed on conclusion of the trial are fairly encouraging and useful.

22. Dr. P. K. Gupta et al.

Dept of kayachikitsa, institute for post graduate teaching & research in ayurveda, gujarat ayurved university, jamnagar. A clinico-experimental study on sandhivata vis-a-vis osteoarthritis & its management with boswellia serrata resin (shallaki)

Total 49 patients between 40 – 70 years of age presenting with classical clinical signs and symptoms of sandhivata, and those without any anatomical deformity were selected and divided into two groups. Patients suffering from uncontrolled diabetes, joint pathologies other than oa (psoriatic arthritis, gouty arthritis, systemic lupus erythematosus, bone tb), and having other serious systemic disorders were excluded. Group-a (n=26) was treated with shallaki capsule 2gm thrice a day with luke warm water after meal for 2 months. Group-b(n=23) was treated with shallaki capsule in same dose, duration, frequency and anupana along with shallaki ointment as local application with one month of follow up. Moderate improvement in statistically significant manner was observed in all subjective and objective parameters. Highly significant results were obtained on cardinal symptoms in both the groups. In group a, complete remission in 11.54% patients, marked in 15.38%, moderate in 57.69% & mild improvement in 11.54% was reported. In group b, marked improvement in 8.89%, moderate in 69.56%, mild in 21.74% patients was observed. The results in group a were better than group b which might be due to less chronicity observed in group-a

23. Deepa Makhija et al.

Journal of research in ayurvedic sciences | year: 2020 | volume: 4 | issue: 4 | page: 149-157. Central ayurveda research institute for cardiovascular diseases, new delhi, india; 2.national ayurveda research institute for panchakarma, cheruthuruthy, thrissur, kerala, india; 3,9.central council for research in ayurvedic sciences, new delhi, india; 4.central council for research in ayurvedic sciences, new delhi, india

Sixty subjects of primary oa knee aged between 35 years and 65 years fulfilling the diagnostic criteria of american college of rheumatology (acr) for oa knee and showing radiological changes of oa knee were enrolled in the study. Upanaha with vachadi churna was done over the affected knee for 14 days. The primary outcome was to see any change in pain and stiffness of joints which was assessed on the visual analog scale (vas) and western ontario and mcmaster university osteoarthritis index (womac). The assessment was done on the 7th and 14th day and 1 week after completion of therapy, i.e., 21st day. Results: the mean pain score as assessed by vas, reduced significantly from 64.48 at baseline to 31.95 at the end of the treatment period of 14 days (p value < 0.001). The mean stiffness score assessed on vas also reduced significantly from 39.68 at baseline to 16.0 after 14 days (p value < 0.001). Significant change in total womac score was also observed, which reduced from mean baseline score of 48.02 to 26.98 till the end of the intervention period of 14 days (p value < 0.001). Significant improvement in cardinal features of osteoarthritis was also observed after completion of therapy. Conclusion: this study substantiates the efficacy of upanaha with vachadi churna in the management of oa knee.

DISCUSSION

Janu sandhigata vata is a vataj disorder in which aggravated vata situated in Janu Sandhigata Pradesha. It produces symptoms like shool(pain), stambh(stiffness) crepitations, movement restrictions etc. Only palliative care is not enough to manage this situation so that Panchkarama management is necessary for better management of this disease..

Role of Snehan in Janu Sandhigata Vata:

Snehana is one of the best treatment for all sandhigata vataj disorders. Sneha dravya having properties like drava, suksham, sara, snigdha, manda, mridu, guru etc . Snehana karma pacifies vata disorders by these properties which are just opposite to vata so it alleviates vata. Snehan when administered providesnourishment to emaciated tissue. As katigraha is vaatvyadhi, snehan softens the muscles, ligaments and tendons thus corrects stiffness, rigidity in body and lubricates the srotas.after snehan, swedan should be given. It alleviates pain, stiffness, oedema and body gets soft. The patient should be given snehapana repeatedly as a result of which the koshta becomes soft, and control vata dosha from aggravation again and pacify vataj disease .

Role of Swedana karma in Janu Sandhigata Vata:

Swedana karma act as a vata kapha shamaka and reduce meda . It works on improve mobility and flexibility of joints. It helps in removal and pacification of vata dosha and relives in pain, stiffness and joint mobility of janu sandhigata vata . By producing sweating, it liquefies the deposited morbid doshas and situated in knee joints , it improves mobility and flexibility of joints also .

Role of Virechan Karma in Janu Sandhigata Vata :

Acharya charak explained about Mridu Virechan Karma in vata Vyadhi. After giving Snehana and Swedana Virechana karma administered in the Vataj disease when disease do not subside by other treatment , then patient should be given Virechana Karma with mild drugs added with unctuous ingredients.after this the body is cleansed of morbidities, there is stimulation of agni, then again snehan and swedan should be administered.

Role of Basti in Janu Sandhi Gata Vata:

In charak siddhi sthana Acharya charak told basti as ardhchikitsa. It is best treatment to treat Vataj Diseases. pain is the most cardinal sign in Vataj Disease and Basti treatment has potency to cure the Vataj disease. As JanuSandhigata Vata is a type of Vata Vyadhi so basti is the best treatment for this disease.

Role of leech therapy in Janu Sandhigata Vata(Knee Osteo Arthritis) :

The saliva of leech contains numerous biologically active substances, which have antiinflammatory as well as anesthetic properties. Keeping this view in mind we have started leech therapy in the patients of osteoarthritis and found encouraging results.

Leech saliva also contains some anesthetic substances. Probably these substances help to decrease the symptoms such as pain and tenderness.

The anti-inflammatory substances such as bdellins and eglins are helpful in reduction of inflammation by virtue of which swelling of the joint also decreases. When the inflammation of the joint decreases, pain also decreases; therefore the restriction of the joint also decreases.

Histamine-like substances are also present in leech saliva which act as a vasodilator. By this way these substances that are present in leech saliva increase the microcirculation, decrease the inflammation as well as stiffness and restriction of movement of the joints.

Role of Janu Basti (local oil dipping at knee joint) on Janu Sandhigata vata:

Janu Basti is Snigdha, Saagni type of Snigdha Sweda which is often recommended in conditions like back pain, arthritis. Medicated oils having properties analgesics, anti inflammatory has be used. Oil helps in formation of lipoidal bonds helps in penetration of drug molecule. It helps to increase blood circulation to the affected area, gets rid of Doshik imbalances, strengthens the muscles, helps the release of toxins and reduces inflammation.

Role of bolus massage (Pinda sweda) on Janu Sandhigata vata:

Patra pottali Swedana a form of swedan karma which comes under Pinda sweda. Patra Pinda Pottali Swedana is a procedure in which medicated leaves having properties like analgesic, anti-degenerative and anti-inflammatory are used. Patra Pottali Sweda reduces Shoola & Stambha which are cardinal symptoms of Janu Sandhigata Vata . By Ushna Guna , it helps to stimulate the sympathetic nervous system and perform vasodilation at Knee joint . Sara & Sukshama Guna of swedana dravya are helps in flush out liquified morbidity of Doshas from knee joints.

Role of Upanaha swedana on Janu Sandhigatavata:

The probable mode of action of **kalka application** is that it improves vascularity of affected Joint. It aids in reduction of the symptoms by restricting the excessive joint movement due to the Specific therapeutic effect of medicine used in kalka bandhan (leaves of eranda, shlguru, Imli, Nirgundi) where in they alleviate Vata (Vata Shamaka).

Role of oral medications like Guggulu on Janu Sandhigatavata:

By analyzing the properties of the **various Guggulu and Kwath** contents, it is clear that these formulations has vatanashaka (pacifies Vata),anti- inflammatory , analgesic, antioxidant properties, antimicrobial activity and promotes general physical fitness.

Role of Traction on Janu Sandhigatavata:

The probable mode of action of traction could be increased joint space that is temporary ,increased movement of the knee joint, increased flexibility in the joint,muscle, ligament and tendon strengthening and pain relief because bony fragment remains separate. It improves in stiffness and improving daily routine work like walking time and ability to go up and down the stairs.

Role of Agnikarma on Janu Sandhigatavata:

It was concluded that, Charaka opines *Agnias* to be important for *Shula* and also *Agnikarma* is superior in treatment of *Stambha*. Modern medicine opines that the blood circulation at the knee joint increases due to the therapeutic heat lending to supply of proper nutrition to the tissue. This helps to flush away the pain producing substances from the site and reduces local inflammation.

CONCLUSION:

Ayurveda has emphasized Various modalities of treatment including *Shamana*(palliative), *Shodhana* (detoxification), local treatments like *Upanaha* (poultice application), and *Agnikarma* (cautery). considering the pathophysiological constitution of an individual. All treatments and interventions of *Sodhana* and *Shamana treatments* in *Ayurveda* reviewed through this study are generally found safe and effective. These treatments work primarily by their adjuvant, *Vatahara*, *Rasayana* and *Vayasthapana* properties. Consultants of Ayurveda should be used these therapies by their clinical experiences, types & stage of disease, and stamina of patients.

The systematic review showed that the studies which involved multi arm treatment showed a better relief in the symptoms. Depending on the stage of the disease and other assessment parameters, different treatment modules have to be

incorporated .Long-term follow-up is required for better management and effect on this disease. The quality of life is greatly improved if effective and proper management planned.

Scope for future:

There is scope for the more study on large sample size on least used therapies like Snehapana (oral use of unctuous substance) , Upanaha(application of poultice) , Janu Basti(local oil pouring on knee joint) and Agnikarma(cautery) . As Janu Sandhigata Vata(Knee Osteoarthritis) is a progressive disorder, continuous medication is required .Age , sex , food habits, socioeconomic status and daily activities are Special consideration about the prevalence of this disease .

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