eISSN - 2348-0173
Vol-2, Issue-1 - Jan-Feb -2014

www.ijaam.org

INTERNATIONAL JOURNAL OF AYURVEDA & ALTERNATIVE MEDICINE

RESEARCH ARTICLE *eISSN 2348- 0173*

EFFECT OF *VIRECHAN KARMA* FOLLOWED BY *PANCHTIKTA GHRITA* AS *SHAMAN YOGA* IN *SANDHIGATAVATA* W.S.R. TO OSTEOARTHRITIS

Subhash Sharma[1*], Jeet Chand Kaushal[2]

1. Lecturer, SKSS Ayurved Medical College, Sarabha, Ludhiana (Pb.) 141105
2. Reader and Head, Department of Panchkarma, RGGPGPG Ayurved College, Paprola (Kangra), (H.P.) India.176115

Article Received on	-	23rd January 2014
Article Revised on	-	10th March 2014
Article Accepted on	-	11th March 2014

RESEARCH ARTICLE eISSN 2348- 0173

EFFECT OF *VIRECHAN KARMA* FOLLOWED BY *PANCHTIKTA GHRITA* AS *SHAMAN YOGA* IN *SANDHIGATAVATA* W.S.R. TO OSTEOARTHRITIS

ABSTRACT

Sandhigatavata (Osteoarthritis) is a condition where *Sandhis* (joints) are afflicted by vitiated *Vatadosha*. Development of this disease is attributed to *Vatadoshavriddhi* which leads to *Shleshakakapha kshaya* (reduction in synovial fluid) in *Sandhis* (joints). The involvement of *Marma* (vital point), *Madhyama Roga Marga*, *Vata Dosha* and *Dhatukshaya* (degeneration) makes the disease *Kashtasadhya*. In modern medicine, *Sandhigatavata* (Osteoarthritis) can be equated with Osteoarthritis which is the commonest, slowly progressive arthritis and leading cause of disability in elderly people. Current trial was conducted to study the etiopathogenesis of *Sandhigatavata* (Osteoarthritis) and to assess the efficacy of *Virechana Karma* (Purgation*)* followed by *Panchtikta Ghrita* as *Shaman Yoga* on the patients of Osteoarthritis. Sixteen patients of either sex, age between 40-80 yrs. with classical symptoms of Osteoarthritis and without any chronic ailments were selected after written informed consent. *Virechana* (Purgation) was carried out with *Erand Tailam* after *Samyaka Snehana* and *Swedana* (adequate oleation and fomentation*)*. Following *Samsarjana Karma*(dietary regime*)*, the trial drug was given orally in the dose of 10gm.OD for 20 days.The effect of trial formulation in 15 patients (one dropped out) on various assessment criteria was obtained after statistical analysis of the data. Study showed highly significant results in reduction of joint pain, degree of severity, tenderness, restriction of flexion, edema, pain during movement and morning stiffness. Insignificant results were recorded in local crepitus. The trial formulation, by virtue of *Tikta Rasa, Deepana, Pachana* and *Ropana* properties alleviates *Dhatvagnimandya* (metabolism) thereby reducing *Kshaya*(degeneration). Besides this, *Ghrita* pacifies *Vata.* So, it was concluded that trial drug is quite effective in management of *Sandhigatavata*(Osteoarthritis).

KEY-WORDS- *Sandhigatavata*, *Avarana, Sandhi*, Osteoarthritis, *Dhatvagni*

INTRODUCTION

Vata is considered as a prime constituent of human body. It is concerned with the production of somatic and psychic processes which are predominantly dynamic in nature. *Sandhigatavata* (Osteoarthritis) is a condition or disease occurring as a result of affliction of *Sandhis (joints)* by vitiated *Vata Dosha*. Development of this disease is attributed to *Vata Dosha Vriddhi* either due to *Vriddhavata Janya Dhatukshaya* (degeneration*)* or due to *Aavarana* of the *Gati* of *Vata Dosha* by *Vridh Meda Dhatu* specifically in *Sthool* (obese) individuals. As there is *Khavaigunya* in *Asthivaha* and *Majjavaha Srotas* so *Vatika Ahara Vihara* predominance results in *Sleshaka Kapha Kshaya* (reduction in synovial fluid) in *Sandhis*(joints). *Sandhis* (joints) are one of the types of *Marmas* and are an integral part of *Madhyama Roga Marga.* Thus, involvement of *Marma*, *Madhyama Roga Marga*, *Vata Dosha* and *Dhatukshaya* (degeneration*)* make disease *Kasthasadhya. Sandhigatavata* can be equated with osteoarthritis, a disease mentioned in modern medicine which is most common type of arthritis affecting the elderly people.

* **Address for correspondence:**

Lecturer, Dept. of Panchakarma,
SKSS Ayu. Medical College, Sarabha,
Ludhiana (Pb.) 141105
Mobile: +917508009578,
E-Mail : sharmasubhash206@gmail.com

It is a degenerative, slowly progressive joint disease and a major cause of disability, limiting activity and impaired quality of life especially in elderly people. An estimated 21 million adults or 12% of the US population aged 25 to 74 years, have signs and symptoms of Osteoarthritis, making this group of conditions a major public health concern among the musculoskeletal disorders [1]. The World Health Organization estimates that Osteoarthritis is a cause of disability in at least 10% of the population over age 60 years [2]. Damage from reactive oxygen radicals has been implicated in the pathogenesis of Osteoarthritis along with other risk factors [3]. Management of osteoarthritis includes the use of NSAIDs, corticosteroids, analgesic drugs and physiotherapy. The treatment is expensive and is not without any unwanted effects. In Ayurvedic texts, our *Acharyas* have mentioned various *Shodhana* (Purification) procedures along with several *Shamana Yoga* or medications for the management of *Sandhigatavata* (Osteoarthritis). Manyresearches have also been done on the same which showed very significant and satisfying results. The present trial report is based on the clinical trial of both *Virechana*, a *Shodhana* (Purification) procedure followed by administration of *PANCHTIKTA GHRITA*, a *Shamana Yoga* to assess the effect on classical symptoms of Osteoarthritis (*Sandhigatavata*).

MATERIALS AND METHODS

Research Design:

Present study was carried out in two parts-

a) Conceptual contrive

b) Clinical contrive

In Conceptual contrive, a detailed study of classical texts of Ayurveda, literature of Modern Medicine and various research works conducted was carried out in order to establish aetiopathogenesis of *Sandhigatavata* (Osteoarthritis).

Clinical contrive was conducted under following sections:

- ***Sample***: The present study was designed to be open trial with single group study. Total 16 patients were selected randomly from OPD and IPD of Department of *Panchkarma*, RGGPG Ayurvedic Hospital, Paprola from the month January 2011 to September, 2011.
- ***Selection of subject***: Patients having age between 40-80 years, with classical symptoms of Osteoarthritis and not having any associated chronic ailments were registered.

Individuals with age <40 yrs. and >80 yrs., suffering from other arthritic disorders like Rheumatoid Arthritis or Gouty Arthritis, Diabetes mellitus, Ischemic Heart Disease or MI, Tuberculosis and pregnant women were excluded from the study.

The following criteria or variables were assessed before and after the drug administration-

1) Joint pain
2) Degree of severity
3) Tenderness
4) Restriction of flexion
5) Oedema
6) Pain during movements
7) Morning stiffness
8) Local crepitations

The study was approved by Institutional Ethical Committee, RGGPGA Hospital, Paprola (H.P.). Prior to the trial, subjects were explained about the drug and trial in the form of patient information sheet. After that, the volunteers were recruited and written informed consent was obtained by them.

The trial formulation, *Panchtikta Ghrita* has been prepared as mentioned in classical text of *Chakradutta*.

The trial drug was prepared by disintegrating *Panchtikta Dravyas* to *Yavkutta*(coarse) form then boiled in water until reduced to one-fourth. With this decoction *Ghrita* was cooked along with paste of *Triphala.*

Table No.1: Ingredients of the Trial Drug

NAME OF PLANT	LATIN NAME	PART USED	QUANTITY
Vasa	*Adhatoda vasica*	Root	16 parts
Nimba	*Azadirachta indica*	Bark	
Kantkari	*Solanum xanthocarpum*	*Panchang*	
Guduchi	*Tinospora cordifolia*	*Panchang*	
Patola	*Trichosanthes dioica*	Leaves	
Goghrita			4 parts
Haritaki	*Terminalia chebula*	Fruit	1 part
Bibhitaka	*Terminalia bellirica*	Fruit	
Amalaki	*Emblica officinalis*	Fruit	

This formulation named *Panchtikta Ghrita* was prepared in RGGPG. Ayu. College pharmacy and were then sent to Drug Testing Laboratory at Jogindernagar for evaluation.

For its administration, first of all *Abhyantra Snehana (*Internal Oleation) of the patient was carried out with *Panchtikta Ghrita*, starting with test dose of 30 ml empty stomach on the 1st day with *Ushna Jala* (lukewarm water) as *Anupana.* The time taken for its digestion i.e. *Udgaarsuddhi* and stimulation of appetite was noted and dose for next day was decided. This procedure was done daily till the symptoms like passage of loose fatty stool, smoothness of skin appeared. This is followed by *Sarvang Bahya Snehana & Swedana* (External Oleation and Fomentation) till the day of *Virechana* (purgation) starting from last day of internal oleation.

On the day of carrying out *Virechana Karma* (Purgation), patient was given 30-50 ml. of *Erand Tailam* empty stomach in the morning after administering *Sarvanga Abhyanga and Swedana* (Full body massage and Fomentation). Number of episodes of passage of stool was noted along with any symptoms of *Atiyoga/ Hinyoga* (Inappropriate purification). *Samsarjana Krama* (Dietary regime) was advised to the patient depending upon the type of *Shuddhi* and number of *Vegas* (episodes). Patient was given *Peya* (liquid gruel*), Vilepi* (rice gruel), *Krita and Akrita Yusha (*Soup) and *Krita and Akrita Mamsarasa* (flesh broth) respectively for given number of days accordingly.

Following the *Samsarjana Krama* (Dietary regime), patient was advised to take 10 gm. of *Panchtikta Ghrita* with milk before going to bed daily for 20 days. All the registered subjects consumed the formulation for prescribed duration i.e. for 20 days with follow up after every 15 days. As 1 patient dropped out in between the course, the effect of therapy was seen only in 15 patients. The data was

analyzed in form of mean score before and after treatment, standard deviation and standard error. Student paired 't' test was carried out for statistical significance. Demographic profile and pattern of joint involvement of 16 patients was also observed.

RESULTS

Demographic Profile of 16 Patients:

56.25% patients were registered in age group ranging between 40-49 yrs. Number of female patients were seven times more than male patients (Table No.2). Approx. 80% patients were either housewives or farmer by occupation. 3/4th part of total patients was of rural background (Table No.3). Approx. 44% patients were either illiterate or educated up to primary level. 37.5% patients belong to lower middle socioeconomic status followed by 32% patients having lower socioeconomic status (Table No.4). 62.5% were taking mixed diet. No addiction was observed in 56.25% patients (Table No.5). 62.5% patients were performing moderate manual physical work. Normal BMI and weight was recorded in about 69% of patients (Table No.6). Total 43.75% patients were *Madhyam Koshthi* followed by 37.5% patients with *Krura* type of *Koshtha* (Table No.7).

Table No. 2: Age and Sex wise distribution of patients

CRITERIA	NO.OF PATIENTS (n)	PERCENTAGE
Age		
40-49 yrs.	9	56.25%
50-59 yrs.	5	31.25%
60-69 yrs.	2	12.5%
70-80 yrs.	0	0%
Sex		
Males	02	12.5%
Females	14	87.5%

Table No.3: Occupation and Habitat wise distribution of patients

CRITERIA	NO.OF PATIENTS (n)	PERCENTAGE
Occupation		
Housewife	07	43.75%
Farmer	06	37.5%
Govt. job	02	12.5%
Business	01	6.25%
Habitat		
Rural	12	75%
Urban	04	25%

Table No. 4: Qualification and Socioeconomic status wise distribution of patients

CRITERIA	NO.OF PATIENTS (n)	PERCENTAGE
Qualification		
Illiterate	03	18.75%
Primary	04	25%
Metric	06	37.5%
Graduate	03	18.75%
Socio economic status		
Poor	03	18.75%
Lower	05	31.25%
Lower-middle	06	37.5%
Upper	02	12.5%

Table No. 5: Dietary habits and Addiction wise distribution of patients

CRITERIA	NO.OF PATIENTS (n)	PERCENTAGE
Dietary Habits		
Vegetarian	06	37.5%
Mixed	10	62.5%
Addiction		
No addiction	09	56.25%
Tea/Coffee	05	31.25%
Smoking	02	12.5%
Alcohol	00	0%
Alcohol and smoking	00	0%

Table No. 6: Physical activity and BMI/Weight wise distribution of patients

CRITERIA	NO.OF PATIENTS (n)	PERCENTAGE
Physical Activity		
Sedentary	04	25%
Moderate manual	10	62.5%
Hard manual	02	12.5%
BMI/ Weight		
Underweight	02	12.5%
Normal	11	68.75%
Obese	03	18.75%

Table No 7: *Kostha* wise distribution of the patients

CRITERIA	NO.OF PATIENTS (n)	PERCENTAGE
Koshtha		
Mridu	03	18.75%
Madhyam	07	43.75%
Krura	06	37.5%

Disease characteristic of 16 Patients:

In chronicity wise distribution, 56.25% patients had duration of illness less than 6 months, 6 months to 1 year duration was recorded in 12.5% patients; 25% and 6.25% patients had duration of illness 1 to 2 years and 2 to 4 years respectively. No patient showed chronicity of duration more than 5 years. All 100% patients had involvement of knee joint followed by hip joint, lumbosacral joint and interphalangeal joint with 6.25% involvement each (Table No. 8)

Table No. 8: Distribution of the patients according to chronicity and involved joints

CRITERION	NO.OF PATIENTS (n)	PERCENTAGE
Chronicity		
Less than 6 months	09	56.25%
6 months-1yr.	02	12.5%
1-2 yrs.	04	25%
2-4 yrs.	01	6.25%
>5 yrs.	0	0%
Joints involved		
Knee joint	16	100%
Hip joint	01	6.25%
Lumbosacral joint	01	6.25%
Interphalangeal joint	01	6.25%
Shoulder joint	00	0%

Efficacy outcome in 15 Patients:

Grade score system was designed for assessing the improvement on subjective criteria in the patients of *Sandhigatavata*(Osteoarthritis). There was highly significant improvement in the criteria of joint pain, degree of severity, tenderness, restriction of flexion, oedema, pain during movement and morning stiffness with $p < 0.001$. In local crepitations, only 24.81% improvement was recorded with insignificant result ($p > 0.05$). There was no considerable change in hematological as well as biochemical values. No drug toxicity or severe side effect was observed during the course of trial (Table No. 9).

Table No.9: Assessment of the effect of drug on subjective criteria

Criteria	Mean Score (BT^x)	Mean score (AT^+)	%age relief	SD±	SE±	t	P
Joint pain	3.47	1.13	67.44%	0.72	0.19	12.5	<0.001
Degree of severity	2.47	1.13	54.25%	0.62	0.16	8.37	<0.001
tenderness	2.8	1.07	61.79%	0.59	0.15	11.3	<0.001
Restriction of flexion	1	0.27	73%	0.46	0.12	6.20	<0.001
Oedema	2.33	0.33	85.84%	0.76	0.20	10.2	<0.001
Pain during movement	2.73	1.33	51.28%	0.51	0.13	10.7	<0.001
Morning Stiffness	3.13	1.00	68.05%	0.52	0.13	16.00	<0.001
Local crepitations	1.33	1.00	24.81%	0.49	0.13	2.05	>0.05

Overall effect of therapy:

The overall effect of therapy on *Sandhigatavata* (Osteoarthritis) suggests that 60% patients showed excellent improvement (60-90% relief), 26.67% patients showed moderate improvement (30-60% relief). Only 13.33% patients showed mild improvement (10-30% relief). No one showed complete abolishment in their signs and symptoms or unimprovement or deterioration with the trial formulation (Table No. 10).

Table No. 10: Table demonstrating overall effect of the therapy

Overall assessment	No. of Patients	Percentage
Complete abolishment	00	0%
Excellent improvement	09	60%
Moderate improvement	04	26.67%
Mild improvement	02	13.33%
No improvement (0%)	00	0%

DISCUSSION

Vitarka (ability of discussing on the basis of *Shastra*) is one of the six features to be present in a good scholar. *Sandhigatavata* (Osteoarthritis) is a clinical entity accounting for disability in the elderly and a need to ameliorate the symptoms and maintain the self dependency of the sufferer seems to be the mainstay of conservative management. Potential complications of the available therapies have initiated a quest for therapy in alternate system of medicine. *Ayurveda* provides an answer through unique group of procedures popularly known as *Panchkarma* which are meant for purificative and rejuvinative purpose. In the present study *Virechana Karma (*Purgation) followed by *Shamana Snehapana* (Internal oleation) was employed as the mode of treatment for *Sandhigatavata* (Osteoarthritis) and patients are evaluated on the basis of improvement in the degree of severity, joint pain, tenderness, restriction of flexion, pain during movements, oedema, local crepitations and morning stiffness before and after the treatment.

*Virechana Karma (*Purgation) which means the elimination of *Doshas* through anal route, is one of the main procedures of this group. As main *Dosha* in *Sandhigatavata* (Osteoarthritis) is *Vata* and its *Sthana* is *Pakvasaya, Virechana Karma (*Purgation) is used for the elimination of vitiated *Vata Dosha* from its *Sthana* and has been mentioned in principles of management. After the elimination of *Dosha*, *Panchtikta Ghrita* is given as *Shamana Sneha* to the patients. The main components of pathogenesis of *Sandhigatavata* (Osteoarthritis) include *Agnivaishamaya, Dhatukshaya* (degeneration) and *Avarana*. *Tikta rasa* (Bitter Taste) being the main *Rasa* of the drug has got properties of *Deepana* (Increasing the digestive

power), *Pachana* (Digestion) and *Lekhana*. By virtue of its *Deepana* Increasing the digestive power) and *Pachana*(Digestion) *Guna*, it corrects *Dhatvaagnimandya* (derailment in metabolism) and *Lekhana* guna alleviates the *Aavarana* caused by *Vridhh Meda Dhatu.* Apart from this, *Ghrita* not only corrects *Dhatvaagnimandya*(derailment in metabolism) due to its *Samsakaraanuvartana Guna* but also corrects *Dhatukshaya* (degeneration) by its *Snigdhata.*

Modern pharmacological action of the drugs:

Various pharmacological and experimental studies have shown that *Kantkari*[4], *Vasa*[5] Nimba[6] and *Guduchi*[7] have got anti-inflammatory as well as analgesic effect. *Guduchi*[8]and *Patola*[9] also possesses antioxidant properties thereby neutralizing the damage by antioxidants. *Patola*[10] and *Vasa*[11] have got hepatoprotective action by virtue of which these drugs correct the derailed metabolism in elderly. Apart from this, *Nimba*[12] and *Patola*[13] also exhibit their antidyslipidemic activity.

In the demographic profile and disease characteristics, it was seen that maximum patients were of age group 40-49 years. The prevalence of disease increases dramatically among old people, likely because of age related alterations in collagen and proteoglycans that decrease the tensile strength of joint cartilage[14]. The data showed the dominance of female patients (female vs male ratio 7:1). This may be due to hormonal variation in women with menopausal age[15]. Approximately two third patients of OA were either housewives or farmers due to repetitive use of joints[16] which is considered to be its major risk factor. In socioeconomic status, half of the patients belong to low income group which can be attributed to poor nutritional status and ignorance of the individual. Total two third patients were doing moderate to hard manual physical activity which may further make them susceptible to degenerative joint ailments. BMI wise distribution showed only one fifth patients as obese or overweight. Data showed that commonest involved joint was knee joint. Majority of the patients had duration of illness less than 6 months.

The analysis clearly indicates that the patients improved considerably as a result of *Ayurvedic* treatment. There was statistically significant improvement in most of the criteria which were selected to evaluate the effectiveness of trial drug.

The present study was limited to shorter period. The future research should focus on longer treatment duration. Further studies are also required to assess the effect of drug on lipid profile as well as sugar level after long duration administration.

CONCLUSION

The trial formulation, due to dominancy of *Tikta rasa* (Bitter taste), *Deepana* (Increasing the digestive power), *Pachana* (Digestion)and *Ropana* (Healing) properties maintains *Dhatvagni* (metabolism) so reducing the process of degeneration or *Kshaya* in *Sandhigatavata* (Osteoarthritis). Besides this, *Ghrita* pacifies *Vata.* So, was concluded that trial drug is quite effective in management of *Sandhigatavata* (Osteoarthritis).

ACKNOWLEDGEMENT

I would like to express my sincere gratitude to my Guide Dr. J.C. Kaushal, faculty members of *Panchkarma* Department, other faculty members and my seniors and juniors from RGGPGAC Paprola for their supervision, support and advice during the trial. I would especially like to thank my spouse, Dr. Bharti, for her continous support and faith in me.

REFERENCE

1. Lawrence RC, Helmick CG, Amett FC. Estimates of the prevalence of arthritis and selected musculoskeletal disorders in United States, Arthritis Rheum, 1998; 41:778.
2. Global economic and Healthcare Burden of musculoskeletal diseases. 2001, WHO.
3. Tiku ML, Liesch JB, Robertson FM. Production of Hydrogen Peroxide by rabbit articular chondrocytes: Enhancement by cytokines. J Immunol, 1990; 143:690.
4. Sharma PC, Yelne MB, Dennis TJ, editors. Database of medicinal plants used in *Ayurveda* and *Sidhha,* Vol.4; CCRAS, New Delhi 2005, Page 269-274.
5. Chakraborty A, Branther AH. Study of alkaloids from Adhatoda vasica Nees on their anti-inflammatory activity. Phytother Res, 2001, 532-534.
6. Dinda A, Das D., Ghosh G., Kumar S. Analgesic and antiinflammatory activity of various fractions of *Azadirachta indica* leaf in experimental animals. International Journal of Pharmtech Research CODEN (USA) April-June 2013. Vol.5,No. 2, ISSN: 0974-4304, p 838-843.
7. Wesley JJ, Christina AJ, Chidambaranathan N. Effect of alcoholic extract of *T.cordifolia* on acute and subacute inflammation. Pharmacologyonline, 2008; 3:683-7.
8. Sharma PC, Yelne MB, Dennis TJ, editors. Database of medicinal plants used in *Ayurveda* and *Sidhha*, Vol.3; CCRAS New Delhi, 2005, Page 256-260
9. Shivhare Y, Singh P, Rajak H, Patil UK, Pawar RS. Antioxidant potential of *Trichosanthes dioica* Roxb. Phcog J 2010, 2(6): 107-111
10. Ghaisas MM, Tanwar MB, Ninave PB, Navghare VV, Deshpande T. Hapatoprotective activity of aqueous and ethanolic extract of *T.dioica* in ferrous sulphate induced liver injury. Pharmacologyonline, 2008, 3: 127-135.
11. Baishnab S, Satija V, Das S. Hepatoprotective effect of *Adhatoda vasica* leaves extract against paracetamol induced Hepatic damage in rats. The Internet Journal of Pharmacology, 2013, Volume 12 Issue 1, Page 1.
12. Chattopadhyaya R, Pathak D, Jindal DP. Antihyperlipidemic agents. A Review. Indian Drugs. 1996; 33:85-97.
13. Sharmila BG, Kumar G, Rajasekhara PM. Cholesterol lowering activity of aqueous extract of *T.dioica* in normal and streptozotocin diabetic rats. J Clin Dia Res, 2007; 1(4): 561-569

14. Roberts J, Burch TA. Osteoarthritis prevalence in adults by age, sex, race and geographic area. Vital Health Stat 11. Jun 1966; 1-27(Medline).
15. Spector TD and Campion GD. Generalised Osteoarthritis: a hormonally mediated disease. Annals of the Rheumatic diseases. 1989; (48) 523-7.
16. Kirkiskov LJ, Eenberg W. Occupation as a risk factor for knee disorders. Scand J Work Environ Health 1996, 22: 165.

CITE THIS ARTICLE AS –	
Sharma et.al., Effect of Virechan Karma followed by Panchtikta Ghrita as Shaman Yoga in Sandhigatavata w.s.r. to Osteoarthritis, Int. J. Ayu. Alt. Med., 2014; 2(1):10-16	
Source of Support – Nil	**Conflict of Interest** – None Declared

INTERNATIONAL JOURNAL OF AYURVEDA & ALTERNATIVE MEDICINE
#401/8-A, 4th Floor, Shiv Shrishti Apt.
Nardas Nagar, TP Rd., Bhandup (W), Mumbai – 400078
E:mail-editorijaam@gmail.com, Web- www.ijaam.org