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"A CLINICAL STUDY TO EVALUATE THE EFFICACY OF *GUGGULUVATI* WITH OR WITHOUT *ASHWATH TWAK KWATH* IN CASES OF *VATARAKT* (GOUT)" -RESEARCH ARTICLE

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ABSTRACT

Joints related disorders are mostly described under *Vatarakt* and *Amavat* in *Ayurvedic* classics. *Ayurvedic Acharyas* assorted the condition of *vatarakt* by various terms such as *Khud-Vata, Adhya-Vata, Vaat- Balas, Vata-Shonit* and *Vaat- Asrik*. However most of the *Acharyas* followed the term *Vatarakt*. Dietary factors as well as mental-emotional composure, constitutional factors, and lifestyle; all are considered important for overt manifestation of this dreaded disease. Vitiation of *vata* and *rakta* and *Avaran* type of pathogenesis is crucial for its overt manifestation. If proper care is not taken at initial stage, disease progression continues and ultimately cripples a person for rest of his life. Clinical presentation of *Vatarakt* closely resembles Gout. Metatarsophalangeal joint of great toe is affected in most of the patients. In modern medicine till date there is no safe and effective treatment for Gout. To find a better treatment choice, *Ayurevedic* literature was explored and present clinical study was carried out. The outcome of this study is very encouraging and offers a hope for safe, cost effective herbal drug treatment for Gout (*Vatarakt)*.

KEYWORDS: *Avaran, Vata* and Rakt Vitiation, Herbal Drug.

INTRODUCTION

The disease *Vatarakt* (Gout) is an age old common condition prevalent all over the world. It is a systemic disease and involves multisystem. In the opinion of *Ayurvedic* learned scholars vitiated *vata* and rakt are responsible to lead hazardous complex effect on the joint and produce *Vatarakt*. Dietary factors which aggravate *vata* and *rakta* may culminate in

precipitation of *Vatarakt*. Excessive use of food article such as curd, leafy vegetables, radish, *nishpav* (bean), *kulath* (horse gram), *mash* (black gram), different kind of non-vegetarian diet, excess use of *lavan, amla, katu, kshar rasa*, alcoholic products like *sura, sauveer*, etc. and fatty food consumption,[1] *Vidahi* and *virudhahar,*[2] habit of eating food before proper digestion of previous food[3] is considered responsible for *Vatarakt*. Lifestyle factors like excess of walking (atydhav), riding on horse, camel etc.,[4] and inordinate observance of sex, and sleep,[5] are also considered accountable for *Vatarakt*. In the opinion of *Achary Sushrut* obesity also play a crucial role in its manifestation.[6]

Most of the *Ayurvredic* scholars considered *hast* (handa), *paad* (foot), *anguli* (finger), and *sarvasandhi* (all joints) of the body as the seat of the disease *vatarak*. But they observed that the disease first confirms its root in small joints of hands and feet and then spreads all over the bod.[7] On the basis of its clinical presentation the diseases is considered of two type i.e. *uttan* and *gambhir*. Different treatment plan are mentioned for these two varieties of vatarakt. Acharyas have advocated *aalep, abhangya, parishek, and upanah* for *uttan* variety whereas *virechan, vasti* and *snehapan* are mentioned for *gambhir* variety of *vatarakt*.[8]

On the basis of clinical presentation the disease *Vatarakt* can be correlated with a similar condition of modern medicine named as Gout. The prevalence of gout varies between populations but approximately 1-2%, with a strong male predominance (>5:1). Risk factors associated for primary gout include metabolic syndrome, high alcohol intake (predominantly beer which contains guanosine), and diets relatively high in purine e.g. red meat, sea food, offal or relatively low in vitamin C. The inherent metabolic aberration in gout is hyperuricaemia which is defined as an elevation in serum uric acid level ≥ 6.8mg/dl.[9] Serum uric acid levels ate higher in men than women; they rise from the age of 20 in men and after menopause in women, positively correlate with obesity and very according to ethnicity (highest in New Zealand Maoris).[10] Hperuricaemia is usually an asymptomatic condition which is hypothesized to play a role in cardiovascular disease and hypertension. Some hyperuricaemic individuals develop gout.[11] Gout is a disorder of purine metabolism menifestaed by the following features, occurring singly or in combination: increased serum uric acid concentration, recurrent attacks of characteristic type of acute arthritis in which crystals of monosodium urate monohydrate may be demonstrable in leucocytes present in the synovial fluid, aggregated deposits of monosodium urate monohydrate (tophi) in and around the joint of the extremities, renal disease involving interstitial tissue and blood vessel, uric

acid nephrolithiasis.[12] Clinically, the natural history of gout comprises four stages: asymptomatic hyperuricaemia, acute gouty arthritis, asymptomatic interval of intercritical gout and chronic tophaceous gout. In addition, gout nephropathy and urate nephrolithiasis may occur. Acute gout most commonly affects the first metatarsal joint of the foot, but other joints are also commonly involved. Definitive diagnosis requires joint aspiration with demonstration of birefringent crystals in the synovial fluid under a polarized light microscope.[13] The management of gout is directed towards the treatment of acute gout, prevention of further attacks and identification and correction of factors that contribute to the disease. Weight reduction and reduction of urate concentration by low purine diet should be considered in the long term management of gout. The drugs used are colchicines and nonsteroidal anti-inflammatory drugs, xanthine oxidase inhibitors like allopurinol and uricosuric agents, e.g. probnecid and sulphinpyrazone.[14] Treatment includes non-steroids and analgesics. In patients without complications, NSAID therapy is preferred.

MATERIAL AND METHODS

AIM AND OBJECT

- To find a safe and economic drug to serve the patients suffering from crippling and hazardous disease
- To provide a cheaper and easily available treatment
- To evaluate the efficacy of *Guggulu Vati* and *Ashwath Twak Kwath* in the management of *Vatarakt* on scientific parameters

Study Design: Single Blind.

Selection of Cases

Patients were selected from among the patients attending out patients department of kayachikitsa of State Ayurvedic College and Hospital, Lucknow. The referred cases from other physicians were also incorporated in the present clinical study. The criteria for selection of the patients were based upon:

A. Careful Evaluation of Medical History

Selected patients were subjected to careful medical history taking and thorough physical and medical examination was carried out.

B. On The Basis of Symptoms

Following signs and symptoms were taken as criteria for assessment of the cases:

Sandhi Shul (pain in joints)

Sarukashoth (swelling with pain)

Raga (redness)

Dhamanyangulisandhisankoch (contraction of vessels, fingers and joints)

Toda (pricking pain)

Trishnaadhiky (excessive thirst)

TwakVaivarnyaata (discolouration of skin)

Sparshashishunita (tenderness)

C. On the basis of pathological findings

- Laboratory Investigations

i. High level of serum uric acid (hyperuraicaemia)

ii. Leucocytosis

iii. Raised ESR

- Laboratory Special investigation (if possible)

i. Synovial fluid aspiration

ii. Orthoscopic

iii. Chemical analysis of renal stone

- Radiological investigation

i. Punched out erosions

ii. Soft tissue swelling of urate tophi

iii. Bony atrophy

After the patients were enrolled they were grouped into two groups:

1. Group –A: Patients of Group-"A" were treated with *GugguluVati*

2. Group –A: Patients of Group "B" were treated with *GugguluVati* along with *Ashwath Twak Kwath*

Dose, Duration and Administration

Group-A

In this group *Guggulu Vati* in the dose of 2 tabs (1 gm.), thrice a day were given to the patients with *madhu* for twelve weeks duration.

Group-B

In the patients of group B *Guggulu Vati* (500 mg) in the prescribed dose (two tabs) were administered along with *Ashwath Twak Kwath* in the dose of 40 ml twice a day for 12 weeks.

Criteria for assessment of results

The results have been classified under the following categories.

1. Cured

This has been decided on the basis of the following points;

- Complete relief in the initial chief complaints along with positive improvement in patient's general health
- Reduction if serum uric acid level within normal limit from its initial value
- Complete improvement in terms of radiological and other laboratory findings
- Feeling of well being

2. Improved

- Improvement in clinical signs and symptoms up to a level of 50% and more
- Reduction if increased serum uric acid level only up to 20-30%c. partial improvement in term of radiological and pathological findings
- Feeling of slightly better than initial state

3. Not Improved

Those patients were kept in this group who got no improvement in symptoms, clinical findings, and serum uric acid level as well as in other laboratory findings.

Follow up

The follow up of both the groups was done fortnightly and laboratory investigations were also done fortnightly for one month. During this period any change in severity of symptoms and laboratory findings were also looked for.

OBSERVATIONS AND RESULTS

- In present study it was observed that out of 21 male patients maximum number of patients i.e. 6 were form the age group of 31-40 and five patients were from the age group of 41-50 years
- In female patients maximum patients were found between 41-50 years of age.
- Maximum patients were Hindu (81.25%), occupation wise data revealed that maximum patients were from service class (37.5%) followed by businessman and housewives constituting 21.88% and 18.75 %. Maximum patients (81.26) were married as the disease occurs in adult.
- Residents of urban area were more affected than that of rural area, comprising 84.37% as compared to 15.63% of rural area residents.
- Considering the relationship between the disease *Vatarakt* and addiction, the study revealed that, 37% were consuming alcohol on regular basis. Addiction of smoking and tea/coffee was noted in 31.25% and 28.13% respectively. in present series of patients 25% patients weren't indulging in any sort of addiction. This study suggests that excessive use of alcohol and smoking have some role in its manifestation
- Observations on status of appetite of the patients revealed that maximum patients were having normal appetite and consuming mixed type of diet.
- Past history of patients revealed that 37.5% of patients have suffered from previous attack of *Vatarakt*. Hypertension was found in 18.7% diabetes in 12.5% of patients
- Regarding duration of illness, it was observed that maximum numbers of patients (37.5%) were having history of illness with-in six month. More than 2 year long duration of illness was found in 12 patients (37.5%).
- As the disease *Vatarakt* mainly affect the joints so an observation regarding joint involvement was done and a comparative study of joint which had pain, redness and swelling, before treatment was done. It was found that more than 50% of patients (56.25%) were having involvement of first metatarsophalangeal joint. Involvement of interphalangeal joints, tarsometatarsal join, intermetatarsal joint and sub tarsal and transverse tarsal joint of foot/feet were involved in 50%, 43.75%, 40.63%, 34.38% respectively
- Regarding onset of pain it was observed that most of the patients experienced acute pain in the affected joints. 72% of cases reported acute onset of pain.

- Blood pressure of all the patients was measured and it was found that 44% of cases were hypertensive. Out of which in 21.87%% (7/14) were having mild hypertension 12.5% (4/14,) were in category of moderate hypertension and three 9.4 %(3/14) were found in severe hypertensive.
- Prakrati wise observations revealed that *vatapittaj prakrati* was more prone to *Vatarakt* followed by *vatakaphaj prakrati*

Clinical Observation

Table No. 1: Effect of *Guggulu Vati* in Group 'A' Patients.

S. No.	Sign& Symptoms	No. of Patients (BT)	No. of Patients (AT)	Response (%)	X^2	P
1	*Sandhishul*	15	4	73.3	50.22	P <0.001
2	*Saruk Shoth*	10	2	80	35.79	P< 0.001
3	*Raga*	11	0	100	45.47	P< 0.001
4	*Kandu*	6	1	83.3	25.34	P< 0.05
5	*Dhamanyangulisandhi Sankoch*	7	2	71.4	28.82	P< 0.05
6	*Vidah*	8	2	75	28.84	P< 0.05
7	*Toda*	10	2	80	31.17	P< 0.01
8	*Trishanaadhiky*	8	2	75	29.41	P< 0.05
9	*Twak Vaivarny*	6	2	66.7	5.86	P< 0.92
10	*Spasrshashishnuta*	15	4	73.3	49.68	P< 0.001

Table No. 2: Effect of *Ashwath Twak Kwath* in Group B Patients.

S. No.	Sign& Symptoms	No. of Patients (BT)	No. of Patients (AT)	Response (%)	X^2	P
1	*Sandhishul*	15	3	80	56.08	P< 0.001
2	*SarukShoth*	11	1	90.9	45.66	P< 0.001
3	*Raga*	11	0	100	44.76	P< 0.001
4	*Kandu*	7	0	100	20.43	P< 0.05
5	*Dhamanyangulisandhi Sankoch*	8	2	75	29.03	P< 0.05
6	*Vidah*	9	0	100	26.33	P< 0.05
7	*Toda*	11	1	90.9	44.45	P< 0.001
8	*Trishanaadhiky*	10	1	90	31.03	P< 0.05
9	*Twak Vaivarny*	7	2	71.4	14.67	P< 0.68
10	*Spasrshashishnuta*	15	2	86.7	62.68	P< 0.001

Estimation of serum uric acid was done in all patients at the time of registration and after completion of drug trial i.e. after three month of initiation of treatment.

Table No.3: Mean ± SD of Serum Uric Acid, Before Treatment and After Treatment.

Group	No. of patients	Mean ± SD BT	Mean ± SD AT	T	p
A	15	7.83 ± 2.79	6.03 ± 1.06	4.3358	P< 0.001
B	15	9.23 ± 1.49	7.50 ± 2.49	4.9311	P< 0.001

Table No.4: After Treatment Change in Mean of Serum Uric Acid in Both Groups.

Mean ± SD			
Group A	**Group B**	**T**	**P**
1.80 ± 0.64	1.73 ± 0.81	0.2657	NS

RESULTS

In this clinical study total thirty two patients were registered and divided in two group viz. group A and group B. One patient from each group left the treatment before completion of study. Hence assessment of drug effect was done on remaining thirty patients. Therapeutic assessment was observed and analysed under three heading:

1. Clinical assessment
2. Statistical assessment
3. Conclusive assessment

Clinical Assessment

Clinical assessment of symptoms was done before and after treatment in both groups. Total ten symptoms were selected and assessed fortnightly in both groups.

Table No.5: Showing Percentage of Fortnightly Improvement in Symptoms.

S.No	Symptoms	Weeks											
		2nd		4th		6th		8th		10th		12th	
		A	B	A	B	A	B	A	B	A	B	A	B
1	*Sandhishul*	13.3	13.3	26.7	33.3	40	46.7	60	66.7	66.7	73.3	73.3	80
2	*SarukShoth*	10	18	30	36.3	40	54.5	50	63.6	60	72.7	80	90.9
3	*Raga*	18.1	18.1	45.4	36.3	63.6	72.7	81.8	81.8	90.9	90.9	100	100
4	*Kandu*	16.7	28.6	33.3	28.6	33.3	57.1	50	57.1	83.3	85.1	83.3	100
5	*Dhamanyangui sandhi Sankoch*	14.2	12.5	28.5	50	42.8	62.5	57.1	75	57.1	75	71.4	75
6	*Vidah*	12.5	33.3	37.5	44.4	37.5	55.5	50	66.6	62.5	88.8	75.5	100
7	*Toda*	10	9	20	27.2	30	36.3	50	72.7	70	81	80	90.9
8	*Trishanaadhiky*	12.5	10	25	30	37.5	40	50	50	50	70	75	90
9	*Twak Vaivarny*	66.7	14.3	16.7	28.6	33.3	42.9	33.3	42.9	56	57.1	66.7	71.4
10	*Spasrshashishnuta*	13.3	13.3	26.7	33.3	40	53.3	46.7	73.3	66.7	80	73.3	86.7

B. Statistical Assessment

Statistical assessment of symptoms and serum uric acid level was done after completion of therapy. The change in symptoms and serum uric acid level was statistical significant.

Table No.6: Depicting Statistical Significance of Treatment on Symptoms.

S. No.	Symptom	Statistical Value		Between Groups Comparison (z test)
		Group A *GugguluVati*	Group B *Ashwath twak Kwath*	
1	*Sandhishul*	P <0.001 Significant	P <0.001 Significant	0.4317
2	*SarukShoth*	P< 0.001 Significant	P< 0.001 Significant	0.7135
3	*Raga*	P< 0.001 Significant	P< 0.001 Significant	1.0235
4	*Kandu*	P< 0.05 Significant	P< 0.05 Significant	0.1186
5	*Dhamanyangulisandhi Sankoch*	P< 0.05 Significant	P< 0.05 Significant	0.1854
6	*Vidah*	P< 0.05 Significant	P< 0.05 Significant	1.5978
7	*Toda*	P< 0.01 Significant	P< 0.01 Significant	0.7135
8	*Trishanaadhiky*	P< 0.05 Significant	P< 0.05 Significant	0.8485
9	*Twak Vaivarny*	P< 0.92 Significant	P< 0.92 Significant	0.1854
10	*Spasrshashishnuta*	P< 0.001 Significant	P< 0.001 Significant	0.9129

Table No.7: Statistical Significance of Treatment on Serum uric acid.

Serum Uric Acid	Statistical Value		Between Groups Comparison (z test)
	Group A *GugguluVati*	Group B *Ashwath twak Kwath*	
	P <0.001 HS	P <0.001 HS	NS

N.B.: HS- Highly Significant, NS-Not Significant

Conclusive Assessment

The efficacy of the drugs were analysed in the following manner.

1. Cured
2. Improved
3. Not Improved

Table No.8: Depicting Conclusive Assessment in Group 'A' and 'B'.

S. No.	Group	Cured		Improved		Not Improved	
		No. of Patients	Percentage	No. of Patients	Percentage	No. of Patients	Percentage
1	'A'	8	53.3	7	46.7	0	0
2	'B'	9	60	6	40	0	0

DISCUSSION

The term *Vatarakt* is very broad term and many inflammatory conditions from modern medicine can be considered under its domain. In its manifestation both *vata* and *rakt* are involved. Most of the symptoms of *Vatarakt* are compatible with gouty arthritis.

Food and lifestyle play an important role in maintaining health as well as in manifestation of disease. In present series of patients following unhealthy dietary habits were noted in most of the patients. Habit of *adhyashan* – eating before digestion of previous food (75%), *vishamashan*-irregular way of eating (71%), *virudhashan* – eating incompatible food article (67%), and *atyaadaan* –over eating (46%), as well as regular and excessive intake of legumes and beans, leafy vegetables, meat, alcohol, beverages like tea, coffee, cold drinks and spicy, fried, sweet, sour, salty food articles, was found in present series of patients. Day time sleep, awakening late in night, travelling with vehicle with suspended legs e.g. bike, scooter riding (50%), habit of holding physiological urges (74%), lack of exercise (65%) was found in considerable number of patients. It is to be noted that such unhealthy way of eating and living resulted in vitiation of body humours particularly *vata* and *rakt* and became instrumental in production of *aama*, as well as in disruption of microchannels of body. Owing to its sticky nature and distortion of channels of small joints this aama (here uric acid) lodged in joints and eventually culminated in manifestation of *Vatarakt* (gout).

CONCLUSION

- *Vatarakt* is a special type of *vata vyadhi* and is multi system in nature.
- According to modern concept gout is a purine metabolic disorder.
- *Vatarakt* and gout are very much similar to each other but are not exactly the same. In fact gout only shares a part in the broad spectrum of *Vatarakt*.
- It can be concluded that *Vatarakt* primarily affect peripheral joins. And metatarsophalangeal joint of the great toe is afflicted maximally.
- Drugs of this clinical study are herbal in nature and effectively have relieved the symptoms and have lowered down the raised serum uric acid. Hence it can be concluded

that *Guggulu Vati* and *Ashwath Twak kwath* have the potential in checking out the on-going pathogenesis of *Vatarakt*.

I would sincerely like to thank all the patients for giving their consent for the present clinical study.

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