Journal of Ayurveda

A Peer Reviewed Journal

Vol.V No.1 Jan-Mar 2011

Contents

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Demand draft to be made in favour of **"Director, NIA, JAIPUR**

EDITORIAL

Ayurveda: The Eternal Solution for Managing Life Style Related Disorders

Life-style diseases and disorders have of late been of concern to both citizens and the medical world, spreading as they are with industrialization and a quickening pace of life.

If we follow a disciplined diet-regimen and daily routine as our forefathers did, I am sure we can reduce such diseases and disorders to a great extent. *Ayurveda* in this context has a great potential in helping people by promoting a sound and healthy way of living.

Ayurveda can play a vital role in the management of various lifestyles disorders and help people to maintain proper health. According to the principles of *Ayurveda*, there is no separation between body, mind and consciousness. With this holistic concept in mind, the *Ayurvedic* community can play its role in the preventive and promotive aspects for maintaining and promoting good and sound health in order to bring about a disease-free society.

The main contributors to lifestyle disorders had been bad food habits, switching over to junk-food form the traditional nutrition-rich home-made foods, consumption of alcohol, tobacco, lack of body exercises, mediation etc. All these resulted in cropping up of various deadly diseases like Hypertension, Cancer, Diabetes etc. and also Obesity, Sleeplessness, Stress and Strain all around. We have a Divine System of Medicine, that is *Ayurveda*, handed over and preached to us centuries ago by our Revered *Rishis* and *Acharyas* and which has rich ways and means for promotive and preventive aspects incorporating the concepts of *Dinacharya, Ratricharya*, *Ritucharya* and *Sadvratta* which are the main contributors to lifestyle modulations.

As all of us are well aware of various remedial measures available in *Ayurveda* for leading and managing a lifestyle, free of any disorder or ailment. These include *Nidana Parivarjana, Ahara-Pathya-Apathya*-Modified Diet Regimen), *Vihara* (Lifestyle Modifications), *Ritucharya, Ratricharya, Satvavjaya Chikitsa* (Social Codes of Conducts for leading a disciplined and dutiful life), *Samshodhana* (Purificatory Therapies), *Shamana* (Palliative Therapies) etc. If one follows all these in a disciplined and proper way, he can lead a disease free life for the full span of his life, even touching a century.

Prof. Ajay Kumar Sharma
Director

Clinical Study

Management of Stable Angina With Herbal Formulation *Lashunadi Guggulu*

Prof. Ajay Kumar Sharma

Abstract -

In *Ayurvedic* classics detailed description of *Hridroga* is available in various texts. The description of *Hridroga* in *Ayurveda* seems to be very brief but while critically examinning, it appears to be very much in close association with various ailments described in modern Cardiology. Basically five types of *Hridroga* are described in *Ayurveda* viz., *Vataja, Pittaja, Kaphaja, Tridoshaja* and *Krimija*. On the basis of their descriptions these different type of *Hridrogas* can be correlated with various types of modern Cardiac disorders. It is difficult to give a specific correlate of I.H.D. in *Ayurveda* but on the basis of descriptions available in various *Ayurvedic* classics it resembles very closely with *Vatika Hridroga*.

The present study was conducted on 30 clinically diagnosed and confirmed patients of stable Angina. Patients having I.H.D. with specific conditions were not registered. The study was conducted with an objective of evaluating the role of *Lashunadi guggulu* in the management of stable Angina on various scientific parameters.

During present trial it was observed that there was significant improvement in clinical manifestations of Stable Angina after the therapy with *Lashunadi guggulu*. The level of S. Cholesterol, L.D.L., V.L.D.L. and Serum Triglycerides decreased and the level of H.D.L. increased considerably after the therapy.

Lashunadi guggulu possesses potent Antianginal and Cardio protective activities and it can be used effectively in the management/to slow down the progress of pathogenesis of atherosclerosis leading to various *Hridrogas* (I.H.D.) specially Stable Angina.

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Clinical Study

Management of Stable Angina With Herbal Formulation *Lashunadi Guggulu*

Prof. Ajay Kumar Sharma

Introduction

Cardiovascular diseases (C.V.D.) are currently the leading cause of death in all developed countries and in most developing countries. The most common cause of Ischaemic Heart Disease is narrowing of the lumina of the coronary arteries by atherosclerosis, and hence Ischaemic Heart Disease (I.H.D.) is often termed Coronary Heart Disease (C.H.D.) or Coronary Artery Disease (C.A.D.)Indians around the globe have the highest rates of morbidity and mortality from Coronary Artery Disease.

On reviewing the *Ayurvedic* literature the authors are tempted to correlate I.H.D. with *Vatika Hridroga* but Stable Angina with *Vata Kaphaja Hridroga*. The modern drugs don't correct/improve the pathogenesis responsible for the full fledged disease.

The proposed formulation *Lashunadi Guggulu* possesses properties like - *Vatakapha shamaka, Deepana, Pachana, Aampachana, Medohara, Medavritta vatahara, Lekhana, Srotoshodhaka, Vednashamaka and Hridbalya etc.* and it is expected that this indigenous compound preparation may be capable of breaking down the pathogenesis of Stable Angina because of their pharmaceutical properties which in turn may produce significant *Srotoshodhaka* effect (cleansing effect) at microcirculatory levels particularly of coronary arteries.

Materials And Methods

1. Selection of cases : Inclusion Criteria

30 clinically diagnosed and confirmed patients of Stable Angina (S.A) were selected.

Exclusion Criteria : Patients having I.H.D. with specific conditions like Acute Myocardial Infarction, Unstable Angina Pectoris, Congenital anomalies, Valvular diseases, Hypertrophic Cardiomyopathies, Severe hypertension and Congestive Cardiac Failure etc. were not registered.

2. Criterias of Assessment :

(i) Subjective improvement

(ii) Clinical evaluation.

(iii) Biochemical evaluation

(iv) E.C.G. changes

(v) Changes in Computerised Treadmill Test (C.T.M.T.)

Subjective Improvement: Patients were asked about growing feeling of well being if any, produced after the course of the therapy.

Clinical Evaluation:

For the assessment of following symptoms of I.H.D. "Grading Scale" provided by "Canadian Cardiovascular Society" was used.

1.	Breathlessness	2.	Chest Pain
3.	Palpitation	4.	Fatigue
5.	Others		

Biochemical Assessment : Following biochemical factors were assessed before and after the completion of the clinical trial .

(i) Serum Cholesterol (S.Ch.)

(ii) Serum Triglycerides (S.TG)

(iii) S.High Density Lipoproteins (S.HDL)

(iv) S.Low Density Lipoproteins (S.LDL),

(v) S.Very Low Density Lipoproteins (S.VLDL).

Electrocardiographic (E.C.G.) Changes:

For the sake of convenience of statistical analysis it was decided to convert ST↓/T↓ of one lead into "1+" and normal finding to "0". During episode of Angina pectoris, the ECG becomes abnormal in

50% or more of patients with normal resting ECGs. The most common findings are as follows :-

1.) ST segment depression.

2.) ST segment elevation and normalization of previous resting ST-T wave depression

3.) Abnormal significant "Q" waves (Prior M.I.)

4.) Left ventricular hypertrophy on E.C.G. suggests a poor prognosis

5.) Ambulatory E.C.G. monitoring may show episodes of silent ischaemia.

Computerised Treadmill Test (C.T.M.T.) Changes:

The criteria given by American Heart Association (A.H.A.) are considered at exercise stress test and for **Grading of Ischaemic Response.**

1) Normal Response (-ve Test)
2) Mild +ve Response (+)
3) Moderately +ve Response (++)
4) Strongly +ve Response (+++) :

3. Administration of Drug

30 clinically diagnosed and confirmed patients of Stable Angina were selected and registered for the present trial and randomly divided into following three groups :

§ **1st Group :** 10 patients were recommended Tab. Dilzem 30 mg TDS as **Allopathic therapy** for 45 days.

§ **2nd Group :** 10 patients were recommended *Lashunadi Guggulu* Vati 2.0 gm. T.D.S. with lukewarm water for 45 days as ***Ayurvedic* therapy.**

§ **3rd Group :** 10 patients were administered Tablet Dilzem 30 mg TDS with *Lashunadi Guggulu Vati* 2.0 gm T.D.S. with lukewarm water for 45 days as **Mixed therapy**.

All the patients were recommended dietary restrictions as per the descriptions available in *Ayurvedic* classics during the course of the therapy.

Duration of Clinical trial : 45 days.

Contents Of Proposed Compound Formulation

S. No.	Plant Used	Botanical Name	Part Used	Ratio
1)	*Lashuna*	Allium sativum	Bulbs	1 part
2)	*Pushkarmoola*	Inula racemosa	Roots	1 part
3)	*Guggulu*	Commiphora mukul	Olio-resin	1 part

Dose & *Anupana* : 2.0 gm T.D.S. with lukewarm water.

Clinical Study - Results & Observations

Table 1 : Clinical Recovery in 10 Patients of S.A. treated with Tab. Dilzem (Ist Group)

Observations	Mean BT	Mean AT	Mean Diff.	Result Mean %	No. of Pts.	S.D. ±	S.E. ±	t	P	Result
Breathlessness	2.40	1.70	0.70	29.17	10	0.48	0.15	4.58	<0.001	HS
Chest Pain	2.40	1.10	1.30	54.17	10	0.48	0.15	8.15	<0.001	HS
Palpitation	2.20	1.00	1.20	54.55	05	0.84	0.37	3.21	<0.025	S
Fatigue	2.50	1.50	1.00	40.00	08	0.76	0.27	3.74	<0.005	HS
Others	4.50	3.00	1.50	33.33	10	0.53	0.17	9.00	<0.001	HS

Table 2 : Clinical Recovery in 10 Patients of S.A. treated with *Lashunadi Guggulu* (IInd Group)

Observations	Mean BT	Mean AT	Mean Diff.	Result Mean %	No. of Pts.	S.D. ±	S.E. ±	t	P	Result
Breathlessness	2.00	0.89	1.11	55.56	09	0.33	0.11	10.00	<0.001	HS
Chest Pain	2.20	0.60	1.60	72.73	10	0.52	0.16	9.80	<0.001	HS
Palpitation	2.00	0.71	1.29	64.29	07	0.49	0.18	6.97	<0.001	HS
Fatigue	2.00	0.63	1.38	68.75	08	0.74	0.26	5.23	<0.001	HS
Others	4.25	1.75	2.50	58.82	08	1.60	0.57	4.41	<0.001	HS

Table 3 : Clinical Recovery in 10 Patients of S.A. treated with *Lashunadi Guggulu* & Tab. Dilzem (IIIrd Group)

Observations	Mean BT	Mean AT	Mean Diff.	Result Mean %	No. of Pts.	S.D. ±	S.E. ±	t	P	Result
Breathlessness	2.00	0.70	1.30	65.00	10	0.82	0.26	4.29	<0.001	HS
Chest Pain	2.50	0.50	2.00	80.00	10	0.47	0.15	13.42	<0.001	HS
Palpitation	2.00	0.43	1.57	78.57	07	0.53	0.20	7.78	<0.001	HS
Fatigue	2.14	0.29	1.86	86.67	07	0.90	0.34	5.46	<0.001	HS
Others	4.63	1.63	3.00	64.86	08	1.77	0.63	4.79	<0.001	HS

Table No. 4 : Physiological Changes in 10 Patinets of S.A. treated with Tab. Dilzem (Ist Group)

Observations	Mean BT	Mean AT	Mean Diff.	Result Mean %	No. of Pts.	S.D. ±	S.E. ±	t	P	Result
Body wt. in Kgs.	63.92	63.72	0.20	0.32	10	0.35	0.11	1.83	<0.1	NS
Pulse rate/ min.	73.50	73.90	-0.40	-0.54	10	0.84	0.27	-1.50	<0.1	NS
Resp. rate/ min.	17.90	17.40	0.50	2.79	10	1.27	0.40	1.25	<0.2	NS
Systolic BP in mm. of Hg.	131.80	127.80	4.00	3.03	10	2.67	0.84	4.74	<0.001	HS
Diastolic BP in mm. of Hg.	83.80	80.00	3.80	4.53	10	3.71	1.17	3.24	<0.010	S

Table 5 : Physiological Changes in 10 Patients of S.A. treated with *Lashunadi Guggulu* (IInd Group)

Observations	Mean BT	Mean AT	Mean Diff.	Result Mean %	No. of Pts.	S.D. ±	S.E. ±	t	P	Result
Body wt. in Kgs.	64.85	62.95	1.90	2.93	10	1.91	0.60	3.14	<0.010	S
Pulse rate/ min.	74.80	74.30	0.50	0.67	10	0.85	0.27	0.86	<0.050	S
Resp. rate/ min.	17.80	17.60	0.20	1.12	10	1.14	0.36	0.56	<0.5	NS
Systolic BP in mm. of Hg.	135.00	132.20	2.80	2.07	10	3.16	1.00	2.81	<0.010	S
Diastolic BP in mm. of Hg.	84.40	83.00	1.40	1.66	10	2.32	0.73	1.91	<0.050	S

Table 6 : Physiological Changes in 10 Patients of S.A. treated with *Lashunadi Guggulu* and Tab. Dilzem (IIIrd Group)

Observations	Mean BT	Mean AT	Mean Diff.	Result Mean %	No. of Pts.	S.D. ±	S.E. ±	t	P	Result
Body wt. in Kgs.	68.35	65.55	2.80	4.10	10	2.33	0.74	3.80	<0.001	HS
Pulse rate/ min.	75.80	71.40	4.40	5.80	10	13.23	4.18	1.05	<0.2	NS
Resp. rate/ min.	18.20	18.60	-0.40	-2.20	10	0.84	0.27	-1.50	<0.1	NS
Systolic BP in mm. of Hg.	133.00	126.20	6.80	5.11	10	3.43	1.08	6.28	<0.001	HS
Diastolic BP in mm. of Hg.	82.20	77.40	4.80	5.84	10	2.86	0.90	5.31	<0.001	HS

Table 7 : Changes in Lipid Profile in 10 Patients of S.A. treated with Tab. Dilzem (Ist Group)

Observations	Mean BT	Mean AT	Mean Diff.	Result Mean %	No. of Pts.	S.D. ±	S.E. ±	t	P	Result
H.D.L.	41.10	41.90	-0.80	-1.95	10	5.77	1.82	-0.44	<0.5	NS
L.D.L.	161.10	150.25	10.87	6.75	10	20.72	6.55	1.66	<0.1	NS
V.L.D.L.	35.00	33.64	1.36	3.89	10	2.02	0.64	2.13	<0.050	S
Serum Cholesterol	237.20	225.77	11.43	4.82	10	20.86	6.59	1.73	<0.1	NS
Serum Triglyceride	175.00	168.20	6.80	3.09	10	10.08	3.19	2.13	>0.1	NS

Table 8 : Changes in Lipid Profile in 10 Patients of S.A. treated with *Lashunadi Guggulu* (IInd Group)

Observations	Mean BT	Mean AT	Mean Diff.	Result Mean %	No. of Pts.	S.D. ±	S.E. ±	t	P	Result
H.D.L.	48.69	51.43	-2.74	-5.63	10	3.93	1.24	-2.20	<0.050	S
L.D.L.	125.11	105.12	19.99	15.98	10	23.57	7.45	2.68	<0.025	S
V.L.D.L.	39.04	31.85	7.19	18.42	10	6.34	2.01	3.59	<0.005	HS
Serum Cholesterol	212.84	180.40	24.44	11.48	10	24.52	7.75	3.15	<0.010	S
Serum Triglyceride	195.20	159.24	35.96	18.42	10	31.72	10.03	3.59	<0.005	HS

Table 9 : Changes in Lipid Profile in 10 Patients of S.A. treated with *Lashunadi Guggulu* and Tab. Dilzem (IIIrd Group)

Observations	Mean BT	Mean AT	Mean Diff.	Result Mean %	No. of Pts.	S.D. ±	S.E. ±	t	P	Result
H.D.L.	51.01	55.26	-4.25	-8.33	10	3.33	1.05	-4.40	<0.001	HS
L.D.L.	132.40	98.82	33.57	25.36	10	21.34	6.75	4.97	<0.001	HS
V.L.D.L.	42.49	32.49	10.01	23.55	10	6.38	2.02	4.96	<0.001	HS
Serum Cholesterol	225.90	186.57	39.33	17.41	10	21.87	6.92	5.69	<0.001	HS
Serum Triglyceride	212.46	162.43	50.03	23.55	10	31.91	10.09	4.96	<0.001	HS

Table 10 : Pattern of E.C.G. Changes in 10 Patients of S.A. treated with Tab. Dilzem (Ist Group)

Observations	Mean BT	Mean AT	Mean Diff.	Result Mean %	No. of Pts.	S.D. ±	S.E. ±	t	P	Result
Bipolar Limb Leads	0.53	0.60	-0.08	-14.29	10	0.65	0.20	-0.37	<0.5	N.S
Augmented Leads	0.53	0.33	0.20	38.10	10	0.28	0.09	2.23	<0.050	S
Precordial Leads	0.48	0.25	0.23	47.37	10	0.28	0.09	2.59	<0.025	S

Table 11 : E.C.G. Changes in 10 Patients of S.A. treated with *Lashunadi Guggulu* (IInd Group)

Observations	Mean BT	Mean AT	Mean Diff.	Result Mean %	No. of Pts.	S.D. ±	S.E. ±	t	P	Result
Bipolar Limb Leads	0.45	0.30	0.15	33.33	10	0.24	0.08	1.96	<0.050	S
Augmented Leads	0.47	0.19	0.28	58.82	09	0.26	0.09	3.16	<0.010	S
Precordial Leads	0.46	0.11	0.34	75.61	09	0.32	0.11	3.23	<0.010	S

Table 12 : E.C.G. Changes in 10 Patients of S.A. treated with *Lashunadi Guggulu* & Tab. Dilzem (IIIrd Group)

Observations	Mean BT	Mean AT	Mean Diff.	Result Mean %	No. of Pts.	S.D. ±	S.E. ±	t	P	Result
Bipolar Limb Leads	0.39	0.06	0.33	85.71	09	0.13	0.04	8.00	<0.001	H.S.
Augmented Leads	0.32	0.04	0.29	88.89	07	0.17	0.07	4.38	<0.001	H.S.
Precordial Leads	0.33	0.04	0.29	87.50	06	0.10	0.04	7.00	<0.001	H.S.

Table 13 : Changes in T.M.T. in 10 Patients of S.A. treated with Tab. Dilzem (Ist Group)

Observations	Mean BT	Mean AT	Mean Diff.	Result Mean %	No. of Pts.	S.D. ±	S.E. ±	t	P	Result
Excercise time in minutes	10.97	12.52	-1.55	-14.13	10	2.57	0.81	-1.91	<0.050	S
Maximum ST changes in mm.	-.140	-0.90	-0.50	35.71	10	0.62	0.20	-2.54	<0.025	S
Impression	1.95	1.30	0.65	33.33	10	0.63	0.20	3.28	<0.010	S

Table 14 : Changes in T.M.T. in 10 Patients of S.A. treated with *Lashunadi Guggulu* (IInd Group)

Observations	Mean BT	Mean AT	Mean Diff.	Result Mean %	No. of Pts.	S.D. ±	S.E. ±	t	P	Result
Excercise time in minutes	9.76	11.80	-2.04	-20.90	10	2.11	0.67	-3.06	<0.010	S
Maximum ST changes in mm.	-1.58	-0.85	-0.73	46.03	10	0.71	0.23	-3.22	<0.010	S
Impression	1.50	0.53	0.98	65.00	10	0.67	0.21	4.59	<0.001	HS

Table 15 : Changes in T.M.T. in 10 Patients of S.A. treated with *Lashunadi Guggulu* & Tab. Dilzem (IIIrd Group)

Observations	Mean BT	Mean AT	Mean Diff.	Result Mean %	No. of Pts.	S.D. ±	S.E. ±	t	P	Result
Excercise time in minutes	9.08	11.38	-2.30	-25.33	10	1.77	0.56	-4.10	<0.001	HS
Maximum ST changes in mm.	-0.90	-0.43	-0.48	52.78	10	0.34	0.11	-4.38	<0.001	HS
Impression	1.39	0.28	1.11	80.00	09	0.60	2.30	5.55	<0.001	HS

Discussions

During the present clinical trial it was observed that there was significant improvement clinically on various scientific parameters in all the three groups after the therapy. Though patients of Ist group showed significant improvement in their clinical symptoms but patients of IInd and IIIrd group witnessed highly significant improvement in their clinical symptoms of Stable Angina after the drug therapy. This was largely due to administration of *Lashunadi Guggulu* in patients of IInd and IIIrd group respectively.

Pulse rate was statistically decreased in the IInd group. There were insignificant changes in rate of respiration in all the patients of three groups. Similarly systolic blood pressure was highly significantly reduced in patients of Ist & IIIrd group whereas it was significantly reduced in the patients of IInd group after the therapy. Similarly diastolic blood pressure was highly significantly reduced in the patients of IIIrd group whereas it was statistically significantly reduced in the patients of Ist and IInd group. This shows that allopathic drug Dilzem has more potent action on blood pressure but it is clear from datas that *Lashunadi Guggulu* probably has mild hypotensive action due to its probable diuretic, adrenergic beta blocking and nitroglycerine like properties.

It was noticed that there was marked reduction in body weight of patients of IInd and IIIrd groups. There was insignificant change in body weight in patients of Ist group. This is largely due to pharmacological actions of *Guggulu* and *Rasona* in the form of *Lekhana, Karshana, Srotoshodhaka, Deepana* and *Pachana* properties, leading to hypolipidaemic activities. The weight reducing property of these drugs directly supports the concept of thier hypolipidaemic activity.

There was highly significant reduction in serum cholesterol and L.D.L. in patients of IIIrd group, significant reduction in patients of IInd group and insignificant changes in patients of Ist group. Similarly in case of Triglycerides and V.L.D.L. there was highly significant reduction in the patients of IIIrd and IInd groups respectivelty but results were insignificant in case of patients of Ist group.

The observation confirms potent dyslipidaemia corrective and cardioprotective activity of *Lashunadi Guggulu*. This is possibly due to pharmacological properties of the components of *Lashunadi Guggulu* like *Deepana, Pachana, Lekhana, Medohara* and *Yakrito-uttejaka* properties of *Lashuna, Pushkarmoola* and *Guggulu*.

Studies on parameters like E.C.G. and C.T.M.T. have revealed that *Lashunadi Guggulu* has potential of increasing blood supply to myocardium through its coronary vasodilating effect due to presence of drugs like *Pushkarmoola, Guggulu* and *Lashuna* having *Lekhana, Medohara, Parshvashoolahara* and *Srotoshodhaka* properties. There was correction of E.C.G. findings in different leads in all the three groups especially in patients of IIIrd group. Similarly there was significant increase in exercise time, significant restoration of isoelectric or near to isoelectric changes in ST Segment, significantly normal or close to normal impression and moderate improvement in threshold of percentage target heart rate after the therapy in respective groups. This

suggests that *Lashunadi Guggulu* possesses properties similar to the antianginal and vasodilating effects.

It is proposed that the symptomatology of I.H.D. (Stable Angina) can be corrected/improved only if there is improved circulation to cardiac muscles, which is possible only when *Srotoshodhana* (Cleansing of microchannels) occurs because of the administration of Herbal drugs namely *Lashunadi Guggulu*. Basically all the three drugs of *Lashunadi Guggulu* have the potential of inducing *Srotoshodhana by* digesting *Aam Dosha* and improving the status of *Jatharagni, Rasadhatvagni* and *Medodhatvagni*. *Lashunadi Guggulu* seems to possess potent antianginal, hypolipidaemic and cardioprotective actions which is possible by following two approaches :-

1. There may be transient improvement in coronary blood supply i.e. coronary vasodilator activities.
2. *Due to Lekhana, Medohara, Srotoshodaka, Shothahara* and *Yarkrito-uttejaka* properties of *Lashunadi Guggulu* this preparation may breakdown/reverse/slow down or check the pathogenesis of Atherosclerosis, which is primarily responsible for I.H.D. It is presumed that *Lashunadi Guggulu* prevents the formation of atheromatous plaques, thrombous or embolus in blood vessels.

Probable mode of action of *Lashunadi Guggulu*

Lashunadi Guggulu is a combination of *Lashuna, Pushkarmoola* and *Guggulu* in equal proportions. Constituent drugs of *Lashunadi Guggulu* have dominance of *Agni* and *Vayu Mahabhutas, Katu and Tikta Rasas, Laghu, Tikshna Gunas, Ushna Virya, Katu Vipakas, Vatakaphahara Doshakarma* and *Hridrogahara Prabhava*. *Hridrogahara Prabhava* or cardio-protective action of *Lashunadi Guggulu* may be due *to Deepana, Pachana, Lekhana, Srotoshodhana, Medohara, Yakrito-uttejaka, Shoolprashamana and Rasayana* properties of its constituent drugs. Several studies have so far been done on the phytochemical properties and clinical actions of constituent drugs of *Lashunadi Guggulu* at various Ayurvedic research centres and renowned institutes. C.C.R.A.S., Delhi has conducted clinical trials on *Pushkara Guggulu* and has approved it as an effective Antianginal and Hypolipidaemic agent in the management of Caronary Artery Disease (C.A.D.).

All the patinets tolerated *Lashunadi Guggulu* very well and no side/toxic effects were reported by any patients registered for the present trial.

Conclusions

Stable Angina is a dreadful chronic disease which is multifactorial in origin with a chronic aetiopathogenesis. It is difficult to give exact correlate of Stable Angina in *Ayurvedic* Medicine. On the basis of their clinical manifestations authors are tempted to correlate *Vatika Hridroga* with Ischaemic Heart Disease and *Vata-Kaphaja Hridroga* with Stable Angina. *Lashunadi Guggulu* has shown encouraging results in the management of Stable Angina on various scientific parameters. It has shown-

(i) Potent hypolipidaemic activity with a tendency to lower down the levels of Serum Cholesterol, Serum Triglycerides, L.D.L. and V.L.D.L.

(ii) Strong cardioprotective activity by elevating the levels of Serum H.D.L. considerably.

(iii) Potent Antianginal and Coronary vasodilator effect when assessed on parameters of E.C.G. and C.T.M.T.

Lashunadi Guggulu has very limited role to play in acute episodes of I.H.D. or Stable Angina. But it can be used effectively as an adjuvant drug in combination with modern coronary vasodilators or independently to prevent or slow down or reverse the pathogenesis of Atherosclerosis, which is an essential pre-requisite pathology of I.H.D.

Therefore, it can be concluded that proposed indigenous compound preparation *Lashunadi Guggulu* may be used as an effective formulation for preventing or delaying or reversing the pathogenesis of atherosclerosis leading to Ischaemic Heart Diseases (Stable Angina).

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Clinical Study

Management of Cervical Erosion by Kshara Karma

*Prof. Neelam

Abstract

Cervical erosion is seen in all ages and it may be either congenital or acquired and cause of many gynecological symptoms. Clinically it is the development of a reddened area on portio-vaginalis around the external os, while pathologically it is the replacement of the stratified squamous epithelium of portio-vaginalis by the columnar epithelium of endocervix. It can show malignant changes in chronic stage. So treatment must be started as soon as the diagnosis of erosion is confirmed. The aim of treatment is to destruct the over grown columnar epithelium by use of local chemical, electrical or diathermy cauterization, cryosurgery or even excision of diseased area. After this destruction normal squamous epithelium from basal cell grows and heals the erosion. To enhance this process of epithelization use of certain enzymes, hormones, vitamins and antibiotic creams are prescribed. In Ayurvedic classics for destruction of any such lesion kshara are prescribed. Kshara are the substances which act as caustic or corrosive agent for any growth when used externally. According to the Ayurvedic texts Kshara Karma is said to be superior to any other surgical or para surgical measures due to it performs chedana, bhedana, lekhan and patana karma instead of its saumya nature and it can be applied in a narrowest place. Aim of study is to see the effect of different ksharas for destruction of over grown columnar epithelium in cervical erosion and which one kshara has better effect than other and Udumbara as a wound healer in cervical erosion. Total 425 cases suffering from various types of cervical erosion along with various extents, free from any other disorders were selected for kshara karma. Application of Snuhi kshara with Udumbara ointment gives better result in comparison to Apamarga and Palasha kshara.

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Clinical Study

Management of Cervical Erosion by Kshara Karma

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Introduction

Lifestyle disorders are a big problem for our society today. Once these were bacteria and Viruses, who were the prime killers, but now a days we human beings are proving biggest killers for ourselves. Lifestyle diseases are different from other diseases because they are potentially preventable, and can be lowered with changes in diet, lifestyle, and environment because these are the result of an ill-relationship of people with their environment. The fact that our diet is changing day by day, from high nutritional food, we move towards junk food, has contributed to the era of lifestyle diseases. Reduction in physical activity and exercise has also added to the scenario. Substance abuse may also increase the risk of certain diseases later in the life and people die at an early age.

The World Health Organization (WHO) has warned that more than 270 million people are susceptible of falling victim to diseases linked to unhealthy lifestyles. Most of these people are thought to come from China, India, Pakistan and Indonesia. Highlighting the fact that women play vital and multiple roles, especially those who are employed, the report stressed on the need for a balance to be maintained by them both at home and workplace."Ignorance of healthcare can have multiple implications on her surrounding environment such as her family, workplace and social network". Obesity, Cardiovascular diseases, Diabetes, Arthritis, Spinal Problems, Dementia, depression, anxiety and Carcinomas of different body parts are the lifestyle disorders most endangering to human beings now a days. Cervical Cancer is the commonest malignancy in females in India and incidence is twenty times more than that of endometrial carcinoma. Cervical Erosion may be an early sign of cervical cancer and it can show malignant changes in chronic stage.

Cervical Erosion is one of the commonest lesions of genital tract and one of common disease of women seen in OPDs. About 85% of women suffer from this lesion during their lifetime and it is a benign disease of the cervix and usually present in reproductive age group, although it is sometimes found in young Children. It is the interplay between two epithelia. Clinically it is development of a reddened area on portio vaginalis around the external os, while pathologically it is the replacement of the stratified squamous epithelium of the portio vaginalis by the columnar epithelium of the cervical canal (Dawn, 1993), through which the capillaries shine and gives the red colour to lesion. Cervix is the lowest and narrowest portion of the uterus, divided into portio vaginalis & supravaginalis. Portio vaginalis is composed by fibrous & collagenous tissue projects in the vagina and covered with squamous epithelium continuous with that of vagina, while Supra vaginalis composed by involuntary muscles & many fibers continuous with the corpus surrounded by pelvic fascia except on its posterior where it is covered with the peritoneum above the vaginal attachment.

Developmental [Error in mullarian duct system] and Hormonal [Effect of circulating maternal oestrogen] are the congenital and Infections [gono., strep., staphy. tricho., cand.], Hormonal [excessive oestrogen] and Environmental [change in vag. Ph] are the acquired causes of cervical erosion. Pathogenesis occurred in two phases that is Process of formation of erosion and Process of healing.

Formation of Erosion is-

Due to excessive oestrogen — Microglandular hyperplasia —Squamous metaplasia —Basal cell hyperplasia —Edema of endocervical stroma —Decidualization—**Erosion**

Due to infection –Inflammatory reaction to deep tissue of Cervix—Hyperaemia, Edema and Round cell infilteration—Chronic irritation of recemose glands —Vaginal discharge—Irritates to Portio Vaginalis—Maceration of Squamous Epithelium

followed by Desquamation – Raw area covered by outgrowth of columnar epithelium of cervical canal —**Erosion**

Process of healing is just reverse to its formation when infection & inflammation subside healing occurs and squamous epithelium replaces the columnar epithelium. Normal [Due to Hormonal], Hard or Fibrosed [Due to Infection] and Eversion of cervical os or contraction of scar [Due to Inflammation] cervical condition is found after healing of the erosion

Symptoms and Signs of cervical erosion are Persistent vaginal discharge (watery, mucoid or mucopurulent), Backache, Menorrhagia & Dysmenorrhoea, Contact bleeding, Pruritis Vulva, Infertility and Psychological upsets. On P/S and P/V examination Smooth with flat surface markedly red in colour with vascularisation cervix is found in **Flat erosion**, Papillary villous projection are seen on the surface of cervix with granular appearance and velvety cervix in **Papillary erosion.** In **Follicular erosion** Follicular & nodular appearance with soft nabothian follicles are seen on the cervix.

Differential diagnosis can be done by Ectropion, Ulceration of cervix, Tubercular ulcer of cervix, Syphilitic ulcer of cervix and Carcinomatous ulcer of cervix. Investigations like- Bacteriological test, Cytological test, Schiller's test, Histological test and Colposcopic examination are done to exclude the pathology.

Main principle of treatment of cervical erosion is destruction of overgrown columnar epithelium and It can be made by different methods like - Chemical, Electric and Cold cauterization, Conization, Trachelorraphy and Partial amputation of cervix. After this destruction normal squamous epithelium from basal cell grows and heals the erosion. To enhance this process of epithelization use of certain enzymes, hormones, vitamins and antibiotic creams are prescribed.

In Ayurvedic classics for destruction of any such lesion kshara are prescribed. Kshara are the substances that help in elimination of vitiated doshas when used internally or act as caustic or corrosive agent for any growth when used externally. Kshara Karma is said to be superior to any other surgical or para surgical measures due to it performs chhedana, bhedana, lekhana & patana karma instead of its saumya nature cures diseases arising by vitiation of tridosha and it can be applied in a narrowest place & internally where surgical procedures cannot be done.

Brief description of kshara

Types of kshara	**On basis of use of Kshara** 1.Pratisarniya [externally] 2. Paniya [internally] **On basis of potency of action** 1. Mridu 2. Madhya 3. Tikshna
Mode of Action	Kshara has tikshna guna and ushna virya with predominance of vayu and teja mahabhuta. Vayu helps in speedy action while tejas or agni produces caustic effect.
Time for Kshara application	Externally one can use in any season. Internally used except in Shishira, Greeshma and Varsha Ritu
Precaution	Mridu madhya and teekshna ksharas should be used according to disease and strength of the individual.
Contraindications	Children, Menstruating women, Pregnant women, Patients with fever, diabetes, tuberculosis, Genital organ displacements.
Indications	Gulma, Granthi, Arbuda, Dushtavrana like- Cervical Erosion

Clinical Study

Aim of study is to see the effect of different ksharas for destruction of over grown columnar epithelium in cervical erosion and which one kshara has better effect than other, Udumbara as a wound healer in cervical erosion.

Drug Selection

Various ksharas like Apamarga, Chitraka, Chirbilva, Palasha, Snuhi, Tila, and Arka etc. have been used for destruction of diseased tissue in cervical erosion in the dept of Prasuti Tantra, I.M.S, B.H.U, Varanasi. According to earlier workers Negi et.al. 1974, 1978, Neelam et.al., 1981, Grover et. al., 1983; Vinaya et.al., 1991 , Kiran et.al., 1995 and Archana et.al., 1999 reported that out of different Ksharas; Apamarga, Palasha and Snuhi. have better effect in cervical erosion. So in present clinical study Apamarga, Snuhi and Palasha Kshara along with Udumbara ointment were selected.

Brief description of drugs

Name of drug	Apamarga	Snuhi	Palasha	Udumbara
Latin name	Achyranthes aspera	Euphorbia nerifolia	Butea monosperma	Ficus glomerata
Rasa	Katu, tikta	Katu	Kashaya, Tikta, Katu	Madhura, Kashaya
Guna	Ruksha, Laghu, Tikshna	Snigdha, Laghu Tikshna	Snigdha, Laghu	Ruksha, Guru
Virya	Ushna	Ushna	Ushna	Sheeta
Vipaka	Katu	Katu	Katu	Katu
Effect	Kapha Vata Shamaka, Shoth har, lekhana, Vrana shodhana, Vedna sthapana	Kaphapitta, Rakta shamaka, lekhana,	Kaphapitta, Rakta nashaka, lekhana, shothhar	Kaphapitta, Rakta shamaka, vrana ropana, shothhar
Chemical constituents	Potash	Euphorbin, Resin, Calcium malate CO3?— , Ca++, Mg++, Na+, K+	Kino-tannic acid, Palasonin Cl-,CO3—, SO4—, PO4—,Na+, K+	Silica, Tanin Phosphorous,
Ph of kshara	10.90	10.95	10.92	-

Method of Preparation of Kshara & Ointment

— Panchanga of the plant is collected and dried in shade and burnt.

— Stem bark of Udumbar was dried and made powder.

— Kshara of different plants and ointment were prepared by the method described in Rasatarangini.

Selection of cases

Total 425 cases suffering from various types of cervical erosion along with various extents, free from any other disorders were selected for kshara karma.

Inclusion Criteria

General and systemic examination were WNL, No any other gynecological disorders were found, Routine Blood & Urine investigations were WNL, Special investigations like vaginal ph, Pap smear, cervical punch biopsy were WNL.

Exclusion Criteria

Systemic diseases, Organic pathology, inflammatory diseases of reproductive system, OCP's users, Pregnant and Lactating women.

On the basis of treatment total cases were divided into different groups

S.NO	GROUPS	TREATMENT
1.	**GROUP A**	Apamarga kshara cauterization + Udumbara ointment
2.	**GROUP B**	Palasha kshara cauterization + Udumbara ointment
3.	**GROUP C**	Snuhi kshara cauterization + Udumbara ointment
4.	**GROUP D**	No cauterization + Udumbara ointment

Method of Application

Day of Calling	After clearance of menses on second or third day
Position	Lithotomy
Part preparation	Savlon
Procedure	Cervix was cleaned properly after applying the Cusco's speculum and Kshara was applied with sterile swab stick & wait for two minutes for better cauterization. After two minutes of cauterization cervix was washed with lukewarm water and Udumbara ointment was applied over the cauterized area.
Review	At weekly interval and in each visit period of beginning of epithelization, completion of epithelization and symptomatic relief were observed and noted.
Advice	Avoid Coital act

Showing Incidence of Age, Parity, Gravidity and Marital Status in total cases of cervical erosion and all the groups.

Incidence	Age yrs)	Parity (nos)	Gravidity (nos)	Marital Status (yrs)
Group A	30.02	3.56	2.92	12.43
Group B	30.56	2.91	3.40	11.73
Group C	29.94	3.69	3.22	13.23
Group D	30.20	3.22	2.96	11.45

Showing Follow up observations in total cases of cervical erosion and all the groups.

Variables	Group A	Group B	Group C	Group D
Beginning of Epith(wks)	3.55 +0.90	4.50 +1.79	3.02 +2.17	-
Completion of Epith(wks)	8.33 +0.90	10.50 +1.79	5.91 +2.17	-
Partial symptoms relief	5.62 +1.74	5.31 +1.93	4.57 +1.56	7.63 +2.11
Complete symptoms relief	8.53 +2.04	10.51 +1.96	6.06 +2.09	-

Showing results of total cases of cervical erosion and all the groups.

GROUPS	CURED	IMPROVED	UNCHANGED
Group A	64.21	26.84	8.95
Group B	73.33	20	8.99
Group C	87.59	8.28	4.13
Group D	0	0	100

Mode of action of Apamarga, Palasha, Snuhi Kshara and Udumbara ointment

Name of kshara	Color after application	Action
Apamarga Acyranthes aspera	White	Death of superficial cells changing them into slough followed by epithelization
Palasha Butea monosperma	Deep red	Destroys the cells followed by formation of granulation tissue, neovascularisation, initiation of squamous metaplasia
Snuhi Euphorbia nerifolia	Dark violet	Vasoconstriction, death of superficial cells, regeneration of basal cells, growth of squamous epithelium.
Udumbara Ficus glomerata	NO	Astringent property which reduces the discharges by relieving the congestion.

Discussion

Cervical erosion was found maximum in active reproductive life of women in all the groups. Mean age was **30.02, 30.56, 29.94** and **30.20** years in group A,B,C and D respectively and mean age of marital status was **12.43, 11.73, 13.23** and **11.45** years in group A, B, C and D respectively, which indicates that this disease is common problem of married women during reproductive life. Further, none of the groups had significant difference in age distribution. Majority of the women were either multigravid or multiparous. Mean parity was **3.56, 2.91, 3.69** and **3.22** in group A, B, C and D respectively. It is possible that repeated pregnancies or deliveries produce some local trauma and denude the infra-vaginal cervix from squamous epithelium and columnar epithelium grows over it, this produces erosion.

100 % cases had complained for vaginal discharge. It may be due to hyperplasia of cervical glands which causes the excessive vaginal discharge.

After application of apamarga, Palasha and snuhi kshara the colour of erosion was changed into **white (**due to death of superficial cells changing them into slough followed by epithelization) **deep red** (destroys the cells followed by formation of granulation tissue, neovascularisation, initiation of squamous metaplasia) and **dark violet** (vasoconstriction, death of superficial cells, regeneration of basal cells, growth of squamous epithelium) in colour respectively.

Follow-up was observed on the basis of, Period in which epithelization started, Period of completion of epithelization, Symptomatic relief.

After cauterization epithelization of erosion was started much earlier in group C in comparison to group A, B and D, mean period of beginning of epithelization was 3.02 weeks in group C, while it was more than 3.55 weeks in group A and B, difference was highly significant. Identical trend was noted in

completion of epithelization of erosion, difference was highly significant. Corresponding to epithelization of the erosion the vaginal discharge was one of the most important symptom also disappeared earlier in more number of cases in group C than the other groups, the difference was highly significant. Epithelization of erosion was the only criteria for assessment of results.

1. **Cured:** Complete epithelization with all symptoms relived
2. **Improved:** Epithelization was started but it was not complete and relived in some symptoms
3. **Unchanged :** No change in erosion

It was seen that 87.59% cases were cured in group C, while in group A 73.33% and group B 64.21% cases had complete epithelization of erosion. In group D no trace of epithelization was seen in 100 % cases.

Destruction of erosion with Snuhi Kshara showed much better results in comparison to Apamarga and Palasha kshara. Application of Snuhi Kshara causes Vasoconstriction, death of superficial cells, regeneration of basal cells, and growth of squamous epithelium. Use of udumbara ointment probably prevented congestion or hyperaemia following fibrolysis or thrombolysis, thus prevented regeneration of superficial few columnar cells left over after destruction and helped in better epithelization.

CONCLUSION

1. Kshara is the best treatment for destruction of overgrown columnar epithelium which heals by squamous epithelization.
2. Application of Snuhi kshara with Udumbara ointment gives better result in comparison to Apamarga and Palasha kshara.
3. Application of Udumbara ointment without cauterization gives poor result in cervical erosion.
4. Post cauterization application of Udumbara ointment gives an effective symptomatic improvement and initiates the healing process by virtue of its astringent, decongestant and healing properties.

Snuhi kshara along with Udumbara ointment is safe, less painful, easy to apply, cheap, easily available and highly effective treatment for cervical erosion and most suitable for developing countries like India.

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Clinical Study

" Introduction of Arjun Guggulu and Gugulu Kshar Sutra in the patients of Fistula in ano with Hyperlipidimia and Atheromatous Heart Disease "

*Dr. Raakhi Mehra

Pathologic heart gives another conditions involve various degrees of risk for the surgical procedures especially for anesthetic implementation due to the risk of cardiac arrest. Henceforth, surgery is normally contra indicated in cases of Fistula in ano with Cardiac patients. Otherwise also **"If you have enmity to a doctor, refer him a patient of Fistula-in-ano and it will never heal" p**roverb justifies as patients of fistula in ano possess a longer hospital stay, a delayed wound healing, and demerit of recurrence especially in cardiac patients. With low strength in cardiac patients, the agony of fistula in ano gets aggravated.

The introduction of Guggulu *Kshara Sutra is useful in cardiac patients with fistula in ano. As* into the fistulous tract dissolves the tough fibrotic tissue and ultimately drains it out, creating a healthy base for healing by virtue of *Ksarana* (cutting) and *Ksanana* (to dissolve), *Chedana* (excision), *Bhedana* (incision) and *Lekhana* (scraping) *Kaphahara* (antislough) and *Medohara* (draining) karma. Ultimately these actions provide the medicinal debridement by reducing the slough or tissue debris with soothing effect simultaneously, pacifies imbalanced *Tridosa (trio humor)* main cause of the disease and does accelerated healing by inhibiting the fibrotic process producing significant pathophysiologic change and states the harmony of physical properties of tissue in cardiac patients. Considering the above view, it can be better to perform *Kshar Sutra* therapy in fistula in ano with cardiac disorder. However factors affecting healing rate in the cases of Fistula in ano depend on the age, status of physical strength, season, pathological association etc.

Atheromatous plaque is formed which constricts the flow of blood, oxygen, and nutrients to the heart muscles. With significant blockages, about 60% to 70% of the vessel wall and exertion the increased demand of blood by the heart is not met. The excess risk is directly related to the plasma concentration of LDL, cholesterol and inversely related to the plasma HDL Cholesterol concentration which is well maintained by the use of *Arjun* and *Guggulu* especially in cardiac patients. The analgesic, anti inflammatory effect of these drugs further provide easiness in *Kshar Sutra Therapy* in Cardiac patients.

On the basis of these scientific consideration *Kshar Sutra* Section of the Ayurveda Central Research Institute New Delhi is treating Cardiac patients with Fistula in ano by *Guggulu Kshar Sutra* Therapy with *Arjun tvak* powder (IMPCL) 2 gm and Shuddha Guggulu (IMPCL) 500 mg twice a day along with routine dressing with Jatyadi tail and Sitz bath with *Panchavalkal kvath*. The encouraging results is the achievement of success in treating heart patients with fistula in ano and should be presented amongst the medical world.

Key words; *Guggulu, Kshar Sutra, Arjun,* Fistula in ano, Atheromatous Cardiac Disease.

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Clinical Study

" Introduction of Arjun Guggulu and Gugulu Kshar Sutra in the patients of Fistula in ano with Hyperlipidimia and Atheromatous Heart Disease "

Dr. Raakhi Mehra

Pathologic heart gives another conditions involve various degrees of risk for the surgical procedures especially for anesthetic implementation due to the risk of cardiac arrest. Henceforth, surgery is normally contra indicated in cases of Fistula in ano with Cardiac patients. Otherwise also **"If you have enmity to a doctor, refer him a patient of Fistula-in-ano and it will never heal" p**roverb justifies as patients of fistula in ano possess a longer hospital stay, a delayed wound healing, and demerit of recurrence especially in cardiac patients. With low strength in cardiac patients, the agony of fistula in ano gets aggravated.

The introduction of Guggulu *Kshara Sutra is useful in cardiac patients with fistula in ano. As* into the fistulous tract dissolves the tough fibrotic tissue and ultimately drains it out, creating a healthy base for healing by virtue of *Ksarana* (cutting) and *Ksanana* (to dissolve), *Chedana* (excision), *Bhedana* (incision) and *Lekhana* (scraping) *Kaphahara* (antislough) and *Medohara* (draining) karma. Ultimately these actions provide the medicinal debridement by reducing the slough or tissue debris with soothing effect simultaneously, pacifies imbalanced *Tridosa (trio humor)* main cause of the disease and does accelerated healing by inhibiting the fibrotic process producing significant pathophysiologic change and states the harmony of physical properties of tissue in cardiac patients. Considering the above view, it can be better to perform *Kshar Sutra* therapy in fistula in ano with cardiac disorder. However factors affecting healing rate in the cases of Fistula in ano depend on the age, status of physical strength, season, pathological association etc.

Atheromatous plaque is formed which constricts the flow of blood, oxygen, and nutrients to the heart muscles. With significant blockages, about 60% to 70% of the vessel wall and exertion the increased demand of blood by the heart is not met. The excess risk is directly related to the plasma concentration of LDL, cholesterol and inversely related to the plasma HDL Cholesterol concentration which is well maintained by the use of *Arjun* and *Guggulu* especially in cardiac patients. The analgesic, anti inflammatory effect of these drugs further provide easiness in *Kshar Sutra Therapy* in Cardiac patients.

On the basis of these scientific consideration *Kshar Sutra* Section of the Ayurveda Central Research Institute New Delhi is treating Cardiac patients with Fistula in ano by *Guggulu Kshar Sutra* Therapy with *Arjun tvak* powder (IMPCL) 2 gm and Shuddha Guggulu (IMPCL) 500 mg twice a day along with routine dressing with Jatyadi tail and Sitz bath with *Panchavalkal kvath*. The encouraging results is the achievement of success in treating heart patients with fistula in ano and should be presented amongst the medical world.

Aims and object: Traditionally, explained these drugs have been undertaken for a trial to know the efficacy on heart patients who require surgery for their fistula in ano and to authenticate their well being with status of Blood pressure, lipid profile and cholesterol level with ayurvedic drugs *Arjuna a*nd *Guggulu*.

Material and Method: With the reference available the complete study is planned herewith to judge the claim of ancient medical science in reference to hyperlipidaemia, atheromatous cardiac disorder. The planning of the study is materialized into following previous referral study. Total data of 10 Cardiac patients who were needed *Kshar Sutra* therapy were treated with *Guggulu Kshar Sutra* therapy with oral administration of Arjun Tvak 2 gm and *Shudddh Guggulu* 500mg twice a day at *Kshar Sutra* Section, ACRI, New Delhi during 2007-2008. After registration all 10 patients had gone through

pathological and essential biochemical tests before and after treatment i.e. 3 months. It is better to minimize the agony by analgesic Guggulu 60 minutes before taking patient on the table. The procedure should be completed as swiftly as possible and the patients were counselled psychologically. The same method was adopted for successive changes of the thread. Less cardiac stress was noted as no additional cardiac doses were required during and after treatment. With this procedure all the patients of fistula in ano having a cardic pathology have excellently tolerated the *kshara sutra* treatment.

Observations and Result:

Table 1: Age and sex wise distribution of 10 patients :

Age group (in years)	Male	Female	Total
>35-< 70	08	02	10

Table 2: Occupation wise distribution of 10 patients

Occupation	Male	Female	Total
Sedentary work	05	00	05
Field work	01	00	01
General	02	02	04
Total	08	02	10

Table 3: Diet wise distribution of 10 patients

Diet	Male	Female	Total
Vegetarian	06	02	08
Non-Vegetarian	02	00	02
Total	08	02	10

Distribution of the patients result wise

Table 4 : Distribution of patients as per symptomatological relief :

S.No	Signs & Symptoms	Clinical Relief
01	Pain	92%
02	Burning sensation	86%
03	Itching Sensation	76%
04	Discharge	98%
05	Irritation	86%
06	Unhealthy granulation	98%
07	Inflammation	92%

Table 5 Effect of the trial

GROUP	Cutting Time	Healing Time	Changing Rate
Guggulu Kshar Sutra	3-4 days	6-8 days	5th day

Table 6: Effect of Biochemical Parameters

Duration	TC (mg/dl	HDLc (mg/dl	TC/HDLc (Risk factor
Initial	284.00	+50.12	8.10
	+ 48.44	+ 12.12	+2.80
After 12 wk	200.12	58.20	4.80
	+42.42	+10.20	+ 1.22
Comparison	P<0.001	P< 0.05	P<0.001

Table 7 Result wise distribution of the patients

Results			
Good	**Fair**	**Poor**	**Total**
07	03	-	10

Discussion and Conclusion:

Guggulu is the oleoresin and having analgesic, anti-inflammatory, lipolytic, detoxication, antiseptic, and healing properties for the surgical approach. Moreover its stable extract in alcohol with all surgical debridement and healing pharmacoceutical actions may be in cashed in the form of *Kshar Sutra* form.*1 Majority of 10 patients were having discharge as a common symptom followed by pain and burning sensation. *Vatsamaka*, and *Pittasamak* actions sooth the symptomatology.*2. Moreover, *Soshak* and *Lekhan* action of the *Guggulu* provide good debridement and reducing suppuration and complete exploration of the fistulous track. This not only helps in healing and increasing healthy granulation but also avoid reoccurrence. Moreover, externally, the fumigation of the *Guggulu* along with steaming of *Guggulu* water and sitz bath provide soothing effect on tenderness and easy to change thread with significant relief in pain also. While during *Kshar Sutra Therapy,* the internal administration of *Guggulu's* hypolipidemic activity*3, analgesic and anti inflammatory could be attributed to several mechanisms including inhibition of cholesterol, biosynthesis and enhancement in cholesterol degradation and / or excretion. Protective and antioxidant properties of *Guggulu* also play a part in its lipid lowering activity and reduce lipid peroxides, Xanthine oxidase and increases superoxide dismutase has been found to have the capacity to enhance production of thyroxin (T4), Guggul triidothyronine (T3) (thermogenic activity), which also account for its lipidolysis action. A keto steroid, 2-gugglusterone was found to counteract the thyroid suppressant activity of carbimazole. *9 Preclinical studies have reported guggul's effect on biogenic amines, catecholamine and dopamine liable to attribute to its lipid lowering properties.*6 It has been noted for helping the hypercholesterolemic B rabbits to recover the decrease in catecholamine sythesis. *Guggulu* significantly lowers serum triglycerides and cholesterol as well as LDL and VLDL cholesterol. *GuggulurMedoanilharanam* **(Ca.Su. 25).** *Arjuna* regulates beta-a cardiac receptors, inhibits platelet aggregation, lowers serum lipids and reduces the effects of stress through the anxiolytic action.*4 The LVEF significantly improved after

Arjuna therapy due to its adaptogenic activity. The effect is proclaimed to resulting out from the trial drug action on liver and thyroid, wherein, thyroid is stimulated to increase body's metabolic rate and the liver is stimulated to metabolize LDL cholesterol.*5 Being antioxidant helps to stop the oxidation of cholesterol and subsequent hardening of the arteries. Moreover, reduction of the stickiness of platelet, lowers the risk of coronary artery disease. *7 & *8. It stimulates the LDL receptor biding activity in hepatocytes and enhance its catabolism. It also inhibits oxidative modification of LDL due to its constituent gugglusteronel. Increase thyroid stimulation improves digestion and accelerate metabolism to pass the food along the GIT tract quickly. It also prevents the transformation of undigested carbohydrates into triglycerides and reduces cholesterol in blood by metabolizing the existing fatty acids. That are correlated with the development atheroselerosts, the underlying cause of coronary heart disease (CHI) and stroke. This markedly inhibits liver cholesterol biosynthesis. This causes interference in lipoprotein formation and lipid turnover.*11

Atheroselerosis or hardening of the arteries results from build up of cholesterol on the interior blood vessel walls. It is the LDL that leads to this build-up and HDL takes the cholesterol back to the liver. Trial drug has been found having capacity to lower the VLDL. LDL and triglycerides with simultaneously raising the HDL revealing that *Arjun* Guggul is useful in providing protection against atherosclerosis, being antioxidant it helps stop the oxidation of cholesterol and subsequently, trial drug inhibits platelets aggregation and provide protection against myocardial ischemia. Hyperlipidemia is caused by abnormal lipid and lipoprotein metabolism, *10 On the other hand, the cardioprotective HDLc were elevated by the administration of *Arjuna* and *Guggulu*.

The bark of Terminalia arjuna (A*rjuna*) contains B-sitosterol, ellagic acid, arjunolic acid and arjunic acid , a glucocide arjunetin and possesses diuretic, prostaglandin enhancing and coronary risk factor modulating properties. It is also useful as an anti-ischaemic and cardioprotective agent in hypertension and heart disease. It decreases total lipids, tryglycerides and cholesterol so brings dose dependent decrease in blood pressure and heart rate. In experimental study it is proved that *Arjuna* arrests the rise in TC,LDLc and VLDLc.*16 Histological pronounced reduction in the atherosclerotic involvement of the coronary artery. The architecture of the coronary artery returned almost to normal. Administration of *Arjuna* showed a significant hypolipidaemic activity in rats. Serum B-lipoprotein lipid components of serum and liver were accompanied with decreased level of serum free fatty acids and hepatic lipolytic enzyme activities. This caused the marked inhibition in hepatic biosynthesis of cholesterol and enhanced the excretion of faecal bile acids. *Arjuna* caused hypolipidaemia by affecting both anabolism and catabolism of liver lipids. The mode of action of *Arjuna* as a hypolipidaemic agent and as a hypocholesterolaemic agent to safeguard against cardiac diseases is established. An experimental study shows that significant protection against the biochemical changes that were induced by isoproterenol. In myocardial necrosis, the increased levels of serum creatinine phosphokinase, glutamate oxaloacetate transaminase, glutamate pyruvate transaminase and Y-glutamyl transpeptidase were found to be reversed by Arjuna. In addition, the decreased levels of glycogen, Yglutamyl transpeptidase, succinate dehydrogenase levels of glycogen, Y glutamyl transpeptidase, succinate dehydrogenase and mitochondrial oxygen uptake in the heart were also significantly protected. *14 The antihypertensive effects of *Arjuna* might be due to its alteration in transport of cations across the cell membrane. An increasing trend of HDLc levels and a lowering of LDLc levels with reduction in TC indicates the anti-atherogenic property of Arjuna. *17 The Framingham Heart Studies have proposed that the ratio of TC or LDLc to HDLc may be better predictors of coronary risk than TC or any of the lipoprotein cholesterol levels alone. It has the advantage of simplified calculation and applicability in different forms of hyperlipidaemia. *Arjuna* seemed to favourably modify the TC/HDLc ratio. It is wise to use *Arjuna* seemed to favourably modify the TC/ HDLc ratio. *18 *Arjuna* regulates beta-a cardiac receptors, inhibits platelet aggregation, lowers serum lipids and reduces the effects of stress through the anxiolytic action.*13 The LVEF significantly improved after arjuna therapy due to its adaptogenic

activity. Thus, it is wise to use *Arjuna* and *Guggulu**15** in order to minimize risks of other complications and prove its cardio protective properties. *Arjuna* can be advocated as a protective drug against atherosclerosis, hypertension and coronary heart disease.It reduces the sensitivity of the heart to adrenergic stimulation and thereby protects the heart against sympathetic outbursts. Heart is considered as vital body point in other way *Marm** **19** so ultimately, result in correction *Jatharagni* (Power of digestion) which leads to proper metabolism and prevent constipation or *Ama (*undigested food and constipation*) ,* the main cause of the fistula in ano occurs. Encouraging result suggests further research in large sample of trial.

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Clinical Study

CLINICAL STUDY ON THE EFFECT OF MOORCHITA TILA TAILA SHAMANA SNEHA AND NAVAKA GUGGULU IN HYPERLIPIDEMIA - A COMPARATIVE STUDY

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Clinical Study

CLINICAL STUDY ON THE EFFECT OF MOORCHITA TILA TAILA SHAMANA SNEHA AND NAVAKA GUGGULU IN HYPERLIPIDEMIA - A COMPARATIVE STUDY

***Dr. S. G. Mangalgi, *Dr. Sidram Guled*

INTRODUCTION:

As rightly stated by Acharya Charaka, "A physician should not be embarrassed if he is unable to name a disease as each and every disease cannot be named" This quotation is best fit for today's era where arrays of newer diseases have come into foreground. This is mainly due to the interplay of various lifestyles, genetic and environmental factors which have altered over the years due to modernization. Man has adopted himself to the fast paced life by modifying his dietary and lifestyle preferences to suit the modern era. This has resulted in a state of discrepancy between the external environment and his internal mechanism causing multitudes of diseases which are popularly referred as 'lifestyle diseases'. Fast foods, lack of exercise, stress, various addictions etc. are some of the factors which contribute greatly to such diseases. These factors generally act by impairing the metabolism of an individual making him prone to series of disorders.

Hyperlipidemia is one such disorder which is identified as a potential risk factor for multitudes of diseases like cardiovascular diseases, metabolic syndrome and even hypertension. Hyperlipidemia is term used to denote raised serum levels of cholesterol or triglycerides or both. Nikolai Anitschkow in 1912 discovered the role of cholesterol in atherogenesis. Since then raised levels of cholesterol and triglycerides have adjudicated as prime modifiable risk factors in atherosclerotic diseases.

Though, there is no precise terminology for Hyperlipidemia mentioned in the Ayurvedic classics, various scholars have tried use distinct nomenclature for the same like Rasagata Sneha Vriddhi, Rasa Raktagata Sneha Vriddhi, Medovriddhi, Medoroga or Medododosha, Ama Medo Dhatu etc. A detailed study of Hyperlipidemia reveals its similarity to Asthayi Medo Dhatu Vriddhi on the basis of its Pathophysiology. Also this excessively increased Asthayi Medo Dhatu is Ama in nature due to which it is retained in the body for a longer time resulting in further complications.

OBJECTIVES OF THE STUDY

- To evaluate the effect of Moorchita Tila Taila Shamana Sneha in Hyperlipidemia.
- To evaluate the effect of Navaka Guggulu in Hyperlipidemia.
- To compare and assess the effect of both drugs.

MATERIAL AND METHODS

MATERIAL:

1. Moorchita Tila Taila
2. Tab. Navaka Guggulu

METHODS:

Source of Data:

The patients' of either sex diagnosed to be suffering from Hyperlipidemia were selected from the OPD, IPD and special camps conducted in GAMC and Hospital, Mysore.

Study Design: Comparative study

Inclusion Criteria:

- Patients of either sex were selected for the study.
- Age group above 18 years was selected. i.e., Patients with increased serum lipids.
- Both obese and non-obese patients were selected.

Exclusion Criteria:

- Patients with age below 18 yrs were excluded.
- Patients who are suffering from secondary

Hyperlipidemia were excluded.

- ❖ Patients who are unfit for snehapana therapy were excluded.
- ❖ Patients with major systemic disorders, which interfere with the treatment, were excluded.

Diagnostic Criteria:

- ❖ The diagnosis was based on the serological investigation, viz. serum lipid profile.

Investigations:

- · Routine investigations for Blood, Urine were done.
- · Specific investigation – Serum lipid profile (12 hrs fasting sample) was done.

Parameters of the study:

- ❖ Parameters include the lipid profile picture done before and after treatment.
- ❖ Data was collected before treatment and after the completion of treatment. It was compared and analyzed for the improvement, and the results were statistically analyzed by using student's**'t'** test.

INTERVENTIONS:

As it was a comparative study, the patients were divided into two groups consisting of 20 patients in each group.

For Group A:

- ❖ Moorchita Tila Taila 15ml twice daily as Shamana Sneha with Ushna jala for 30 days.

For Group B:

- ❖ Navaka Guggulu in Tablet form 500mg, 1 tab thrice daily for 30 days.

Assessment criteria:

Assessment of effect of Tila Taila Shamana Sneha & Navaka Guggulu on serum lipid profile was done by pre & post test values of serum lipid profile by analyzing statistically.

The data was collected & analyzed. The total score before treatment & after treatment was assessed statistically by using Independent sample't' test, paired samples 't' test, descriptive statistics, and repeated measure 'ANOVA'. Analysis was considered by SPSS for windows (Statistical presentation system software).

RESULTS:

Table Showing the Results on Body Weight

	Pre-test mean	Post-test mean	Mean difference
Group A	78.05	76.35	1.7
Group B	71.60	69.95	1.65

P value for overall change from pre to post test is → 0.000 H.S.
P value changes with respect to groups → 0.913 N.S.

In Group A treated with Moorchita Tila taila there was a decrease of 1.7kgs of weight after one month treatment. In Group B treated with Navaka Guggulu there was a decrease of 1.65kgs of weight after one month treatment.

Table Showing the Results on Total Cholesterol

	Pre-test mean	Post-test mean	Mean difference
Group A	221.2600	196.1620	25.098
Group B	212.8050	198.5375	14.2675

P value for overall change from pre to post test is → 0.002 H.S.
P value changes with respect to groups → 0.359 N.S.

In Group A treated with Moorchita Tila taila the mean of Total Cholesterol before the treatment was 221.26, which was decreased to 196.162. So that mean decrease of total cholesterol from pre to post test was 25.098. In Group B treated with Navaka Guggulu the mean of Total Cholesterol before the treatment was 212.805, which was decreased to 198.5375. So that mean decrease of total cholesterol from pre to post test was 14.2675.

Table Showing the Results on HDL

	Pre-test mean	Post-test mean	Mean difference
Group A	40.3100	40.7150	0.405
Group B	43.7700	42.0750	-1.7

P value for overall change from pre to post test is → 0.596 N.S.
P value changes with respect to groups → 0.389 N.S

In Group A treated with Moorchita Tila taila the mean of HDL-C before the treatment was 40.31, which was increased to 40.7150. So that mean increase of HDL-C from pre to post test was 0.405. In Group B treated with Navaka Guggulu the mean of HDL-C before the treatment was 43.77, which was decreased to 42.075. So that mean decrease of HDL from pre to post test was 1.7.

Table Showing the Results on LDL

	Pre-test mean	Post-test mean	Mean difference
Group A	133.4490	119.2170	14.232
Group B	117.9420	114.8100	3.132

P value for overall change from pre to post test is → 0.115 N.S.
P value changes with respect to groups → 0.309 N.S.

In Group A treated with Moorchita Tila taila the mean of LDL-C before the treatment was 133.4490, which was decreased to 119.2170. So that mean decrease of LDL-C from pre to post test was 14.232. In Group B treated with Navaka Guggulu the mean of LDL-C before the treatment was 117.9420, which was decreased to 114.8100. So that mean decrease of LDL from pre to post test was 3.132.

Table Showing the Results on Triglycerides

	Pre-test mean	Post-test mean	Mean difference
Group A	250.0600	185.5200	64.54
Group B	254.5600	236.8550	17.71

P value for overall change from pre to post test is → 0.004 H.S.

P value changes with respect to groups → 0.086 N.S.

In Group A treated with Moorchita Tila taila the mean of Triglycerides before the treatment was 250.06, which was decreased to 185.52. So that mean decrease of Triglycerides from pre to post test was 64.54. In Group B treated with Navaka Guggulu the mean of Triglycerides before the treatment was 254.56, which was decreased to 236.855. So that mean decrease of Triglycerides from pre to post test was 17.71.

Table Showing the Results on VLDL

	Pre-test mean	Post-test mean	Mean difference
Group A	50.1620	35.3050	14.857
Group B	49.8450	45.6030	4.242

P value for overall change from pre to post test is → 0.002 H.S.

P value changes with respect to groups → 0.077 N.S.

In Group A treated with Moorchita Tila taila the mean of VLDL before the treatment was 50.1620, which was decreased to 35.3050. So that mean decrease of VLDL from pre to post test was 14.857. In Group B treated with Navaka Guggulu the mean of VLDL the treatment was 49.8450, which was decreased to 45.6030. So that mean decrease of VLDL from pre to post test was 4.242.

Table Showing the Results on Chol: HDL

	Pre-test mean	Post-test mean	Mean difference
Group A	5.8540	4.9535	0.90
Group B	4.9505	4.9210	0.0295

P value for overall change from pre to post test is → 0.075 N.S.
P value changes with respect to groups → 0.095 N.S.

In Group A treated with Moorchita Tila taila the mean of Chol: HDL ratio before the treatment was 5.8540, which was decreased to 4.9535. So that means decrease of Chol: HDL ratio from pre to post test was 14.857. In Group B treated with Navaka Guggulu the mean of Chol: HDL ratio before the treatment was 4.9505, which was decreased to 4.9210. So that means decrease of Chol: HDL ratio from pre to post test was 0.0295.

Table showing results on Individual type of Hyperlipidemia

Sl. No.	Type of Hyperlipidemia	Results before treatment (Mean)				Results after treatment (Mean)			
		Group A		Group B		Group A		Group B	
1	**Hypercholesterolemia**	225.48		248.52		197.1		198.78	
2	**Hypertriglyceridemia**	301.48		316.46		210.95		316.36	
3	**Combined Hyperlipidemia**	TC	TG's	TC	TG's	TC	TG's	TC	TG's
		220.8	319.2	236.5	246.5	190.29	233.36	210.3	211.25

In Group A treated with Moorchita Tila taila the mean of Total cholesterol in Hypercholesterolemia patients before the treatment was 225.48, which was decreased to 197.1, mean of Triglycerides in Hypertriglyceridemia patients before the treatment was 301.48 which was decreased to 210.95. In Group B treated with Navaka Guggulu the mean of Total cholesterol in Hypercholesterolemia patients before the treatment was 248.52, which was decreased to 198.78, mean of Triglycerides in Hypertriglyceridemia patients before the treatment was 316.46 which was decreased to 316.36.

DISCUSSION:

Maximum number of (42.5%) patients were from the age group of 51-60 years, (60.0%) were female; all are married (100.0%) and (90.0%) were Hindu by religion. Maximum patients were having Kaphavata Shareera Prakriti (45.0%); (37.5%) were Home maker by occupation; (45.0%) patients had

completed only high school; (77.5%) patients belonged to urban area; (67.5%) patients were fresh cases; majority of (40.0%) patients belonged to upper middle class; (52.5%) patients were taking moderate quantity of food; (57.5%) patients were having the habit of day sleep; (72.5%) patients were not having any other habits.

In Nidanas, Ahara dominant in Madhura Rasa, Guru and Snigdha Guna was dominant. Also consumption of fried foods and bakery products was found maximum. In Vihara, Divaswapa and Avyayama was found maximum. Maximum patients displayed insidious onset, negative family history of Hyperlipidemia. Maximum females were found to have attained menopause. Maximum patients showed symptoms of Bharavriddhi, Angagourava and Dourbalya.

On the overall assessment of the therapy, Moorchita Tila Taila showed a better effect on almost all the parameters of Lipid Profile as compared to Navaka Guggulu. Moorchita Tila Taila was seen to decrease S. cholesterol (Mean Difference of 25.098), S. Triglycerides (64.54), S. LDL (14.232), S. VLDL (14.857) and Chol:HDL ratio (0.90) and increase the S.HDL (0.405). Navaka Guggulu was seen to reduce the levels of S. Cholesterol (14.2675), S. Triglycerides (17.71), S.VLDL (4.242), S.LDL (3.132), Chol: HDL ratio (0.0295) and decreased S.HDL (1.7).

On overall assessment of both the groups from pre test to post test showed P values 0.000, 0.002, 0.596, 0.115, 0.004, 0.002, and 0.075 for Body weight, Total Cholesterol, HDL Cholesterol, LDL Cholesterol, Triglycerides, VLDL Cholesterol and Chol: HDL ratio respectively. This shows statistically highly significant results were found in reduction of body weight, Total Cholesterol, Triglycerides and Chol: HDL where as in reduction of LDL Cholesterol and in increase of HDL Cholesterol showed statistically non significant results.

When we compared both the groups on statistically for the significance with respect to groups, the change was insignificant. But when we analyzed individual results, Group A treated with Moorchita Tila Taila showed better results. Also the condition of 1 patient worsened totally in Moorchita Tila Taila group as opposed to 4 patients taking Navaka Guggulu.

The results shown by Moorchita Tila Taila can be attributed to its Medohara properties like ushna, teekshna, sookshma, vyavaya guna and Madhura, kashaya and tikta rasa, Ushna Veerya which are Kaphavata Shamaka properties. In modern Through Increased bile secretion while Navaka Guggulu effect can mainly attributed to Vatakapha and Medohara properties of Guggulu and in modern parlance through increased catabolism of plasma LDL cholesterol and increased hepatic binding sites for LDL. Whereas other ingredients like Triphala, Trikatu and Trimada of Navaka Guggulu can be helpful to reduce the body weight.

CONCLUSION:

1. Hyperlipidemia is one of the major modifiable risk factor for atherosclerotic diseases like CAD, stroke etc.
2. A precise reference of Hyperlipidemia is not available in Ayurveda but it can be understood in terms of Medoroga
3. Maximum numbers (95%) of patients are asymptomatic. This shows presence of signs and symptoms in Hyperlipidemia are very rare.
4. Shamananga snehapana can be safely carried out in patients of Hyperlipidemia.
5. Both the groups A and B showed reduction in serum Total Cholesterol, Triglycerides, LDL-C, VLDL-C and Chol: HDL ratio and Group A showed slight increase in HDL levels.
6. Comparing both the groups, Group A treated with Moorchita Tila Taila Shamana Sneha showed better results in reducing serum lipid values than Group B treated with Navaka Guggulu.

Clinical Study

Ayurvedic Perspective of Polycystic Ovarian Syndrome -A Clinical Study

*Dr. Smita Arora, **Dr. Nand Kishora

Abstract:

Life style disorders usually affect the physical health of an individual. But among the females, these life style disturbances not only affect the health but also affect her fertility specially in case of PCOS i.e. Polycystic Ovarian Syndrome or PCOD (Polycystic Ovary Disease).

In Polycystic ovarian syndrome, under-developed follicles accumulate in the ovaries. Follicles are sacs within the ovaries that contain ova. The ova in these follicles fail to mature and, therefore cannot be released from the ovaries. Instead, they accumulate as cysts in the ovary, such ovaries are two to five times larger than normal ovaries, and they have a white-thick-tough outer covering. Women are usually diagnosed when in their 20s or 30s. This can contribute to Infertility. The lack of follicular maturation and inability to ovulate are likely caused by low levels of follicle stimulating hormone (FSH) and higher-than-normal levels of androgens (male hormones) produced in the ovary. The ratio of LH to FSH is used by modern medicine as a pointer to PCOS. Ayurveda believes that for a healthy baby, a strong healthy ovum and equally strong sperms are needed. Hence at least 3-6 months of strengthening of ovaries, uterus, and sperms are attempted by diet, along with Ayurvedic treatment. Moreover it was seen that females who underwent precocious puberty have higher risk of PCOS. Females diagnosed with this disorder frequently have a mother or sister with similar symptoms commonly associated with PCOS.

This paper outlines a brief account of the present scenario of holistic approach of Ayurveda in the management of Polycystic Ovary Disease which is usually accompanied with many problems like Amenorrhoea, Oligomenorrhoea, DUB (Dysfunctional uterine bleeding), Hirsutism, Anovulation etc and hence is being presented in the form of Polycystic Ovarian Syndrome. A study / success story of 3 female patients having infertility and disturbed menses due to PCOS, is being presented in the form of a paper. The positive result in regular menstruation, decreased hair growth, Acne control and regaining fertility occurred in these patients with the Ayurvedic management and change of their life style.

Key words: PCOS, SHBG, Life style, Endocrine disturbance, Hyperinsulinemia, Disturbed metabolism etc.

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Clinical Study

Ayurvedic Perspective of Polycystic Ovarian Syndrome -A Clinical Study

*Dr. Smita Arora, **Dr. Nand Kishora

Introduction:

Ayurveda is an ancient medicine system which originated in India thousands of years ago. Polycystic Ovarian syndrome (PCOS) affects 6-10 % of women population and it is very often associated with insulin resistance. Polycystic Ovarian Disease is the most common endocrine disturbance affecting the women between 15 to 30 years of age. 73 % of females suffering from PCOS experience infertility due to anovulation. One of the most commonly sought-after Ayurvedic treatments is the PCOS Ayurveda or the natural way of curing Polycystic Ovarian Syndrome. This condition is believed to be caused by hormonal imbalance in a woman's body which brings about irregularities in menstruation, facial hair growth, acne, skin oiliness, obesity and overproduction of androgens. The Ayurveda considers this disorder as an imbalance of Dosha.

Polycystic ovarian syndrome (PCOS), also known by the name Stein-Leventhal syndrome. Ayurveda links the causes of PCOS with the over-consumption of kaphagenic (Kapha aggaravating) foods or foods which are juicy and sweet. These foods overwhelm the digestive tract with sugar and fluid and weaken it during the process. Ayurveda also believes that PCOS may be due to an emotional "sweetness" because of the person's lack of love or his/her low intrapersonal intelligence. In Ashtanga Hridayam, it is mentioned that 20 diseases of yoni (vagina / female reproductive tract) arise due to consuming bad food. The life style of a female usually associated with her physique, menstrual pattern and the complete health. As PCOS is supposed to be occurring mainly due to Kapha aggaravating factors. When there's a problem in the kapha, symptoms inevitably appear outside. Some of these symptoms are: weight gain and hair growth in unusual parts of the body. These symptoms may be followed by a noticeable decrease in appetite and some pain during the ovulation period. Then, the menstrual periods may vary from being too heavy, to not coming at all. In some women, their menstrual cycles become extraordinarily long or unusually short.

Although conventional medications have treatments for the condition, many patients are turning into PCOS Ayurveda or natural treatments because not only are they effective, they are a lot safer and cheaper too. Ayurveda suggests various natural remedies to help cure the disease by balancing the doshas and thus enable the individual to lead a healthy and happy life. The Ayurvedic treatments have also proven to promote female reproductive health and support hormonal balance.

Literature Review of PCOS :

No one is quite sure what causes PCOS. Although women with PCOS often have a mother or sister with the condition, there is not enough scientific evidence to prove that the condition may be inherited. The ovaries of women with PCOS frequently contain a number of small cysts, hence the name poly (many) cystic ovarian syndrome. A similar number of cysts may occur in women without PCOS. Therefore, the cysts themselves do not seem to be the cause of the problem. Basically, a malfunction of the body's blood sugar control system (insulin system) is frequent in women with PCOS, and researchers believe that these abnormalities may be related to the development of PCOS. It is known that the ovaries of women with PCOS produce excess amounts of male hormone known as androgen. This excessive production of male hormones may be a result of the abnormalities in insulin production.

Most common symptoms of PCOS are :

- ✓ Oligomenorrhea or amenorrhea (primary or secondary)
- ✓ Enlarged ovaries with multiple small cysts, an abnormally high number of follicles at various states of maturation, and a thick, scarred capsule

surrounding each ovary.

- ✓ Anovulation (lack of ovulation and therefore infertility)
- ✓ Dysfunctional uterine bleeding (abnormal bleeding patterns at mid cycles
- ✓ Infertility
- ✓ Hirsutism (excess hair growth, usually in a male pattern
- ✓ Acne, oily skin, seborrhea
- ✓ Insulin resistance (problems with blood sugar regulation)
- ✓ Weight gain, difficulties loosing weight, central obesity
- ✓ Hyper pigmentation on neck and face

PCOS is a condition where a hormonal imbalance affects follicular growth during the ovarian cycle causing the affected follicles to remain in the ovary. The retained follicle forms in to a cyst and with each ovarian cycle a new cyst is formed leading to multiple ovarian cysts. Women suffering from PCOS often present with other associated symptoms including hirsutism – excessive body hair, menstrual disturbances, acne vulgaris and obesity. Hyperinsulinemia – increased levels of insulin in the blood is one of the key factors of PCOS. This indicates a direct link between obesity and PCOS as an increased level of insulin in the blood is due to de-sensitivity of cells to insulin, a factor present in diabetes mellitus type II. Increased insulin in the blood stimulates androgen secretion by the ovarian stroma –the connective tissue of the ovary and reduces serum sex hormone–binding globin (SHBG) causing increased levels of free testosterone. Due to the presence of increased androgen in the ovary, the follicle undergoing maturation in the ovary cycle is affected causing anovulation of that particular follicle.

The ovarian cycle is governed by a hormonal feedback system moderated by the hypothalamus thus it requires constant feedback of hormonal levels for it to properly regulate the release of follicle stimulating hormone (FSH) and lutenizing hormone (LH) from the anterior pituitary gland. Both of these hormones play crucial parts in the development of the follicle during the ovarian cycle. As the hormonal levels in the body are imbalanced and the ovum is not released by the ovary the positive feedback mechanism to the hypothalamus to suppress FSH and LH release from the pituitary gland is inhibited. However the hypothalamus is receiving positive and negative feedback from hormones but not due to the normal occurrence of the ovarian cycle. The hormonal feedback that the hypothalamus is receiving is due to high levels of estrogen that has been formed from free androgens in the peripheral tissue.

Increased Insulin in blood

↓ **Stimulates**

Androgen secretion of ovary

SHBG (Sex-Hormone Binding Globulin) decreases

Increased level of free testosterone

Masculine features & Disturbed HPO axis

Causes

Anovulation & Infertility

Sex hormones are steroids i.e. fats and are therefore water insoluble – which is why they need the sex hormone binding globulins i.e. SHBGs (which are water soluble proteins) to move through the blood stream.

In Ayurveda Acharya Sushruta has mentioned Bandhya (Su/ut/38/10) a type of yonivyapada whose symptom is amenorrhoea or oligomenorrhoea. Similarly Acharaya Charaka has described Arajasaka (Ch/ChiS/30/17), a Yonivyapada indicating Amenorrhoea. A combination of classical history, close observation of patient and the following investigations are important tools to confirm a case of polycystic ovarian syndrome.

Ayurveda suggests that this is a Vata type disorder (Apan vata), though the involvement of other dosha can be there but in some measure because the yoni rogas are mainly supposed to be due to vitiation of vata.

Vata predominance manifests with painful menses, severe menstrual irregularity, low weight, coldness

Pitta predominance manifests as hair loss, acne, painful menses, clots, heart problems

Kapha predominance manifests as increased weight, infertility, hirsutism, diabetic tendencies, coldness

PCOS is a disorder involving pitta, kapha, medas, ambhuvahasrotas, and shukra/arthava dhatu.

The causes of PCOS as per Ayurveda can be taken as : Eating excessive sweet and kaphagenic foods, Eating inappropriate foods for digestive capacity: prajnaparadha, Long term digestive weakness: mandagni, Lack of love of affection in personal relationships and Lack of contact with inner self.

Kapha getting aggravated by use of foods which increase moisture leads to slaismiki characteristic by absence of pain, feeling cold, itching and discharge of pale, slimy blood - Astanga Hrdayam

Ayurveda classifies PCOS as a kapha disorder, and by looking at the findings of modern medicine the exhibiting features of the disease can be corelated with the dominate dosha responsible for the disorder. The organs responsible for reproduction in the female body are called artava dhatu. Artava vaha strotas supply, nourish and enable the functional action of carrying the ovum to the uterus. All three doshas play important and distinctive roles in the production, development, maturation and release of ovum and therefore the ovarian cycle and the menstrual cycle is under control of three doshas.

Material & Methods:

A clinical observation has done in the OPD, SBMN Ayurvedic College & Hospital, Rohtak from September 2006 to August 2007. Depending on symptoms of PCOS, a variety of herbal options along with diet and lifestyle changes are recommended by Ayurveda for the cure of the disease.

The treatment principle is to a) Clear obstruction, b) Normalize metabolism, c) Assist cleansing, d) Regulate Arthava dhatu was followed to manage the PCOS in patients.

Ayurveda has a wide range of phytosterols to strengthen ovarian functions. Considering this mechanism of treating PCOS, the following prescription was given to the patients.

The patients were prescribed the below mentioned medicines according to the symptoms present.

1. Ashokarishta 20 ml. BD (after meals with equal water)
2. Kanchnar guggul 250 mg BD
3. Amree Plus powder 10 gm BD (1/2 hr. before meals)
4. Trifala churna 5 gm H.S. (with warm water)
5. Arogyavardhini vati 250 mg BD (after meals)
6. Til seeds 2 gm & Rajeh Pravartini vati 250 mg BD (from 2nd week of menses till 1st day of menses) in cases of oligomenorrhoea / amenorrhoea.
7. Pushpadhanva ras 250 mg. BD with water (for infertility patients)

Ashokarishta, Til, Rajehpravartini vati and Pushpadhanva ras regulates the Artava dhatu & has ovulatory effect. Kanchnar guggul helps in reducing fat and clearing the obstruction by dissolving the cyst. Amree Plus powder helped in regulating the blood sugar level. Trifala churna assists in cleansing the bowel. Arogyavardhini vati normalizes metabolism by improving hepatic activity.

The complete study was planned in following ways-

Complete menstrual history noted : Age of menarche, duration of menses, interval of menses, regularity, amount of flow and association with pain or not.

Family history noted : The patients were asked if any of her sister or mother is suffering from this syndrome or had history of it. It has been noticed that it has occurred in the females having its family history.

Required investigations done: The following basic investigations were done to rule out the PCOS :-

- USG of whole abdomen
- LH (Leitinising Hormone) & FSH (Follicular Stimulating Hormone) ratio
- Serum DHEA (Dihydoepiandosterone)

These investigations were repeated at the end of the study. In USG (Ultra sonography) significant decrease in the size of ovaries were noticed.

LH:FSH which was disturbed, before the study, significant normalization of the same was present at the end of study, which may contribute to the fact that using Phytoestrols, the HPO axis (Hypothalamus-Pituitary-Ovary axis) was normalized as thus hormone balance occurred.

S.DHEA was decreased to some extent in the patients who were having hirsutism as showed positive results for it.

Diet Recommendations : Low glycemic index foods were advised, as they will cause a slower rise in blood sugar. Glycemic index is an indicator of how rapidly the food turns to sugar in the blood. The low glycemic carbohydrates also tend to have more fiber than the high glycemic foods. For example, breads, grains, cereals etc.

Plenty of Fluids : Patients were advised to take at least 8 glasses of water, for proper cleansing of their bowel.

Avoidance of fatty foods : All the patients were recommended mainly monosaturated fats (olive oil, canola oil, nuts) and omega-3 fats (fatty fish, flax seeds, nuts), as these fats are heart healthy.

Regular physical exercise : Patients were advised for brisk walking of half an hour daily to help in reduce their weight.

Fresh Fruits & Vegetables : Patients were advised to consume seasonal fresh fruits at least thrice a day to boost up their immunity.

Sound Sleep : Patients were advised for 8 hrs. sound sleep at night to avoid excessive psychological stress.

Phytoestrols containing Herbs: Patients were prescribed Ashokarishta, Til, Pushpadhanva ras etc. medicines whose ingredients possess phytoestrogenic activity.

Trifla for cleansing the bowel: Trifla powder 5gm, was given at bed time with warm water to cleanse the bowel.

Pushpadhanva ras : It was prescribed in the dose of 250mg twice a day with water to improve the ovulation & strengthening of the ova.

Diet Control *:* The kapha pattern is best controlled through diet, because food is an integral part of the overall health. PCOS may be eliminated or aggravated by the foods which are consumed. Basically, garlic, onion, and green vegetables are beneficial for PCOS sufferers. Whole grains are great too. Dairy products and red meat should be avoided because they worsen the condition.

Duration of the management: The trial management for the selected patients were prescribed for 6 months during September 2006 to August 2007.

Follow up: Follow up was done for 6 months at interval of 2 weeks.

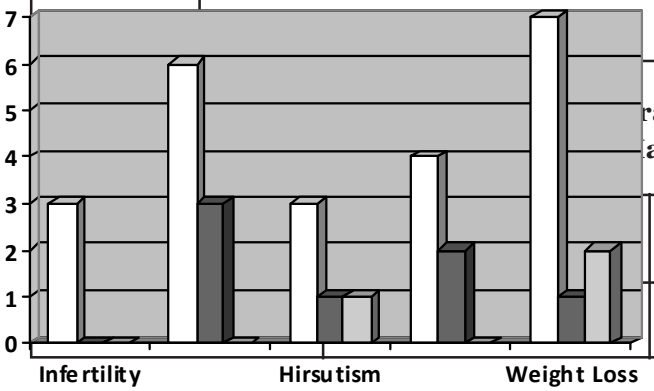
Observation: Total 10 patients of 15 to 35 years of age of females, among which 4 were unmarried & 6 were married, who had classical clinical symptomatology of PCOS had been selected at OPD of SBMN Ayurvedic College & Hospital, Asthal Bohar, Rohtak, Haryana for this study.

Table: Marital status and age wise distribution of females:

Age in Years	Unmarried Females	Married Females	Total
15-25 years	2	1	3
25-35 years	2	5	7

Table: Symptomatological parameters wise distribution of 10 females:

S.No.	Symptology Present	No. of Females
1.	Oligomenorrhoea	8
2.	Anovulation	8
3.	Dysfunctional Uterine Bleeding	2
4.	Infertility	5
5.	Hirsutism	7
6.	Acne	9
7.	Weight gain	10
		7



rated approach of Ayurveda with anagement in PCOS -

Hirsutism control	Acne cured	Weight Reduced
05	06	10

Discussion:

It can be seen that PCOS is due to kapha blocking vata and pitta, hence movement is obstructed and the transformation process is suppressed.

Kapha having first affected the digestive fire– jathara agni starts to affect the metabolic aspect of the seven tissues called dhatu agni. Each dhatu agni is responsible for the nourishment and formation of that particular tissue that it resides in. In the case of PCOS the dhatus that are affected are rasa dhatu – lymph and plasma, meda dhatu – adipose tissue and artava dhatu – the female reproductive system. The following significant point can be mentioned :-

- Due to factors that aggravate kapha, kledaka kapha residing in the GI tract increases in quantity and due to its heavy cold sticky qualities, it suppress the digestive fire, hence food that is ingested is not properly digested forming ama –toxins. As kledaka kapha increases it mixes with the toxins and begins to move out of the GI tract entering the channel of the first tissue rasavaha srota. Affecting the dhatu agni of the rasa – the metabolism of the lymph and plasma, rasa dhatu increases in quanity. In woman the superior byproduct of rasa dhatu is rajah – menstrual fluid. The menstrual fluid will also take on the quality of kapha which will in turn begin to block apana vayu in artavavaha srota and rajahvaha srota – the channel that supports the functional action of the menstrual fluid.
- It can be emphasised that Increased rasa dhatu circulating in the body via the circulatory system being mixed with increased kledaka kapha and ama begins to coat the cells of the body Due to the sticky heavy qualities of increased rasa dhatu, kapha and ama, the cell membrane of the tissues are coated and thus the permeability of the cell membrane is disturbed ; causing insulin receptors on the cell to not recognize chemical structures that normally engage them and hence Insulin becomes unable to engage cellular receptors and through the blood stream move towards artava dhatu where it comes across free receptors that engage its molecular structure.
- Aggravated kapha and ama having affected rasa dhatu moves through the channels to meda dhatu as kapha, ama and meda dhatu have similar qualities hence they are easily attracted to each other. Meda dhatu's metabolic disturbance reflects the kapha aggravation. Meda dhatu agni having been affected by the presence of the increased kapha dosha and ama causes meda vruddhi, increased meda dhatu causing obesity. As meda vruddhi is allowed to increase the increased meda, kapha and ama starts to block the channels of the body. Free androgens moving throughout the body are processed at the level of meda dhatu where it takes on the heavy cool quality of meda expressed as estrogen.
- Ama entering the cells of artava dhatu begins to affect the cellular function and insulin engaging to the receptors on the ovaries cause the production of androgens.
- Artava dhatu affected by the heavy sticky qualities of kapha and ama creates srota dushti in artavavaha srota. Apana vayu in artavavaha srota becomes stagnant – sanga, due to excessive kapha and ama accumulation blocking the channel impeding the flow of vata in the ovarian cycle and hence Pitta funtions i.e. the hormones that carry the energy of transformation are unable to initiate their action leading to hormonal imbalance. The accumulated kapha is expressed in the formation of the cyst in the ovary.
- The hyperpigmentation of face and neck, acne and increased body hair can be understood by the fact that due to vata and pitta being blocked in artava dhatu the other functions of both these doshas begin to become aggravated. Therefore, bhrajaka pitta and ranjaka pitta manifests as acne and increased body hair.
- Two of the active ingredients of Amree Plus (Aimil Pharmaceuticals) decreases the insulin resistance and thereby corrects the three axes namely metabolic, reproductive and steroidogenic. Flavonoid constituents of Pterocarpus marsupium like marsupin, pterosupin and epicatechin are insulinogenic because of post-receptor intracellular mediation by d-chiro-inositol.

1. GUDMAR (Gymnema sylvestre) :- **(**Mostly used in NIDDM**)**

a) **Acarbose**

↓

Inhibitor of α – glucosidase activity of intestinal villi

Slows digestion of complex CHO + Mono & Di-saccharides

Reduction in glucose absorption

Decrease in P.P. Blood Sugar

[Geisthovel, F., Frorath, B. and Brabant G. Acarbose reduces elevated testosterone serum concentrations in hyperinsulimaemic premenopausal women : a pilot study. Thun. Reprod. 1996, 11, 2377-2381]

↓

b) **Gymnema**

causes

Regeneration / Revitalization of the Residual â – cells

Increases endogenous Insulin secretion

Conclusion:

Out of the 10 patients studied, 9 patients possessed regularization of their menstrual cycle, 3 patients regained their fertility and 5patients had their hirsutism controlled, 6 patients had the Acne cured and all the 10 patients showed reduction in weight.

Two different women who have PCOS may have entirely different patterns of secondary system. In a symptom pattern Ayurveda refers to as “Kapha” there may be weight gain, high blood sugars, cold hands, cold feet, hairiness and infertility. In a symptom pattern called “Pitta”, there may be menstrual cramps, and acne etc. In “Vata”, there may be weight loss, extremely painful periods, and unusual timing of periods, either amenorrhoea, even when there is no pregnancy or dysfunctional uterine bleeding. Along with Ayurvedic treatment diet is key to controlling the kapha pattern. Meditation and gentle exercises are needed for pitta. Hormone-stimulating herbal preparations are required for “vata” stabilization and hence this can be concluded that maintaining the life style, helps to manage PCOS.

Other suggestion to manage PCOS:

I. Panchkarma

- Swedan or steaming with anti Vata herbs
- Abhyangam the whole body massage with anti-Vata oils
- Basti (the enema therapy) is the best choice to bring Vata in physiological proportion. The Matra Basti and Uttar Basti are highly efficient to calm down Vata dosha.
- Upnaha or poultice - A medical dressing consisting of a soft heated mass of herbal preparation or a castor oil packs.

II. Yoga

Surya namaskar, Sarvagasana, Paschimottanasana, Ardhmatsyendrasana, Matsyasana, Ushtrasana and all backward bending asana are recommended but they should be try under the supervision of an expert.

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Clinical Study

A Life style disorder- Tamakashwasa (Bronchial Asthma) and its management by different formulations of Tulsi

*Dr Vimal R. Joshi, **Dr Charmi S. Mehta, ***Dr B.J.Pattagiri, ****Dr P.K. Prajapati

Abstract-

Asthma is a common chronic inflammatory disease of the airways characterized by variable and recurring symptoms, reversible airflow obstruction, and bronchospasm. Symptoms include wheezing, coughing, chest tightness, and shortness of breath which closely resemble with Tamaka Shwasa . Tamaka Shwasa is the leading disorder pertaining to Pranavahashotas, its etiopathogenesis includes Kapha Vata dushti and Vimargagamana and Sanga type of Srotas dushti.According to researches etiology of Asthma includes both genetic and environmental factors related to life style like poor hygiene, exposure to indoor allergens, exposure to air pollutants etc. Acharya Charaka have described the drug Tulsi in Shwashara Mahakashaya in sutrasthana Adhyaya 4. In the present study, patients of Tamaka Shwasa (Bronchial asthma) attending the OPD and IPD of Rasashastra and Bhaishjya Kalpana dept., IPGT & RA, were randomly divided into two groups and were treated with two different formulations of Tulsi (Ocimum Sanctum) i.e Tulsi tablet and Tulsi Arka. At the end of study, it was found that both the formulations gave significant relief in the management of Tamaka Shwasa. Tulsi has properties like Katu- tikta rasa, Ushna Veerya and Vatakaphashamaka property by which it may act on the disease Tamaka Shwasa.

Key words- Tamaka Shwasa, Bronchial Asthma, Tulsi tablet, Tulsi Arka

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Clinical Study

A Life style disorder- Tamakashwasa (Bronchial Asthma) and its management by different formulations of Tulsi

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Introduction-

The prevalence of asthma has increased significantly since the 1970s. As of 2009, 300 million people were affected worldwide. In 2009 asthma caused 250,000 deaths globally Asthma is caused by environmental and genetic factors. These factors influence how severe asthma is and how well it responds to medication. The interaction is complex and not fully understood.[1] In Madhukosha commentary on Madhava Nidana, Vijayarakshita has furnished a quotation, describing the feature of Shwasa Roga. "Shwasastu Bhastrikaadhamana Samvatordhva Gamita" with this description it can be clearly differentiated from increased rate of respiration in physiological condition[2]. Specific etiological factors described in Samhitas are- Sita ahara(cold food), sita ambu (Cold water), Dadhi, Abhishyandi anna etc. Tulsi(Ocimum sanctum) is a plant described in Shwashara Mahakashaya[3] .Hence, in the present study, patients of Tamaka Shwasa (Bronchial asthma) were given two different formulations of Tulsi and their effect was assessed.

Aims and objectives -

To compare the efficacy of trial drugs Tulsi tablet and Tulsi arka in the treatment of TamakaShwasa.

Materials and methods-

Selection of Patients :

(1) The patients of Tamaka Shwasa having classical sign and symptoms were selected.

(2) Patients were selected randomly irrespective of their age, sex, religion etc. from O.P.D. and I.P.D. of Rasashastra and Bhaishajya Kalpana Department including drug research, I.P.G.T. & R.A., G.A.U., Jamnagar.

Criteria for Diagnosis

1) Patients having signs and symptoms of Tamakashwasa as described in Ayurvedic classics were selected for present work.

2) Detailed history was taken and physical examination was done on the basics of a special proforma incorporating all signs and symptom of the disease.

Investigations

Routine haematological, especially WBC, ESR, AEC and Urine, Stool examination was carried out in all the patients to assess the condition of disease and to exclude any other pathology.

Diet and restrictions

Patients are advised to avoid aggravating factors mentioned in ancient literature.

Grouping of patients

Randomly selected patients were divided in two groups viz.

(1) Group I Treated with Tulsi Tablet

(2) Group II Treated with Tulsi Arka

Dose and duration

1) Group I Tulsi Tablet - (500 mg) 1 Tablets TDS

2) Group II Tulsi Arka - 20 ml bid.

All the trial drugs were given for 28 days.

Criteria for assessment

Efficacy of trail drugs were analyzed in terms of relief produced in cardinal signs and symptoms before after treatment.

Overall effect of therapy

Improvement in all signs and symptoms of Shwasa was encapsulated, while analyzing the overall effect of therapy. The assessment of overall effect of therapy was done through the following gradation.

Table 1

Overall effect of therapy

Effect	Percentage of Relief
Complete remission	100%
Markedly improved	In between 75% to 100%
Moderately improved	In between 50% to 75%
Mildly improved	In between 25% to 50%
Unchanged	Less than 25%

Observations-

Table 2

Grouping of patients-

Group	No. of patients		
	Total registered	Drop outs	Completed
Group I : Tablet group	15	05	10
Group II : Arka group	10	0	10
Total	25	05	20

In the present study, total 15 patients were registered in tablet group out of which 5 were dropouts and 10 were completed. Total 10 patients were registered in group II and were completed.(Table 2)

It was found that maximum 48% had Vishamagni while 32% patients had Mandagni,44% patients had Vatakapha Prakruti, maximum 36% patients had chronicity from 3-4 years and more than 4 years.

Among the cardinal symptoms all the patients reported Shwaskashtata, other symptoms are as shown in the table——-

Table 3

Cardinal symptom wise distribution-

Symptoms	No. of patients		total	Percent
	Group I	Group II		
Shwasakashtata	10	10	20	100
Kasa	7	7	14	70
Peenasa	2	5	7	35
Parshwashula	1	0	1	5
Shirograha	1	2	3	15
Kaphastheevan	2	5	7	35

Results-

Table 4

Effect of Tulsi tablet on the cardinal symptoms

Sr. No.	N	Cardinal symptoms	Mean score		% of relief	SD (±)	SE (±)	T	P
			B.T.	A.T.					
1	10	Shwasa Vega frequency	2.7	1.3	51.85	0.516	0.15	8.57	<0.001
2	7	Intensity	1	0	100	-	-	-	-
3	10	Duration of attacks	1.0	0.8	20	0.42	0.13	1.53	<0.1
4	7	Kasa	1.428	0.3	78.87	0.899	0.340	3.360	<0.02
5	7	Kapha Nishtivanama	1.571	0.43	72.72	0.214	0.459	2.488	<0.05
6	3	Peenasa	2.33	0.33	85.71	1	0.577	3.464	<0.10
7	2	Urah Shula	1	0	100	-	-	-	-
8	6	Kanthe Ghurghurakama	1.33	0	100	0.516	0.210	6.324	<0.01

Shwasa vega frequency was reduced 51.85% which was statistically highly significant (P<0.01). Intensity, Urahashula and Kantha Ghurghurakarma was relieved by 100% which was statistically significant (P < 0.01). Peenasa was relieved by 85.71% was statistically significant (P < 0.10). Kasa was reduced by 78.87% while Kapha Nishtivanam was reduced by 72.72% which was statistically significant (P < 0.05)(Table 4)

Table 5

Effect of Tulsi arka on the cardinal symptoms

Sr. No.	N	Cardinal symptoms	Mean score		% of relief	SD (±)	SE (±)	T	P
			B.T.	A.T.					
1	10	Shwasa Vega frequency	3.8	1.9	50	0.316	0.1	19	<0.001
2	10	Intensity	1.0	0.3	70	0.48	0.15	0.54	<0.10
3	10	Duration of attacks	1.3	0.9	30.76	0.69	0.22	1.80	<0.10
4	09	Kasa	1.44	0.66	54.84	0.97	0.32	2.40	<0.05
5	08	Kapha Nishtivanama	1.5	0.5	66.66	0.53	0.18	5.29	<0.01
6	06	Peenasa	1.5	0.33	77.77	0.40	0.16	7	<0.001
7	02	Urah Shula	1.0	0	100	-	-	-	-
8	10	Kanthe Ghurghurakama	1.7	0.2	88.23	0.70	0.22	6.70	<0.001

In arka group, Shwasa Vega frequency was relieved by 50% was statistically highly significant (P < 0.001). Also the relief obtained in Kanthe Ghurghurakama was 88.23% while in Peenasa was 77.77. Both were found statistically highly significant (P <0.001). The relief found in intensity was 70% which was statistically significant (P < 0.10). 54.84% relief was found in Kasa which was statistically significant (P < 0.05). 66.66% relief was found in Kaphaneeshtevan was statistically significant (P < 0.01) while 100% relief was seen in Urahshula which was also statistically highly significant.(Table 5)

Table 6

Effect of each therapy on the cardinal symptoms

Sr. No.	Cardinal symptoms (Group)	Mean score		% of relief	SD (±)	SE (±)	T	P
		B.T.	A.T.					
1	Tulsi Tablet	8.2	2.7	67.07	0.44	0.15	4.53	<0.01
2	Tulsi Arka	11.3	4.5	60.17	0.58	0.20	4.25	<0.01

Both the formulations showed highly significant results in cardinal symptoms (P < 0.001). But the percentage of relief was seen more in Tulsi Tablet (67.07%) than in Tulsi Arka (60.17%) (Table 6)

Table 7

Overall effect of therapies

Status	Tulsi tablet		Tulsi arka	
	No. of patients	%	No. of patients	%
Complete remission	0	0	0	0
Markedly improved	0	0	0	0
Moderately improved	9	90	9	90
Mild improved	1	10	1	10
No improvement	0	0	0	0

It can be seen that in both the groups 90% patients were moderately improved and 10% patients had mild improvement.(Table 7)

Discussion

Tulsi is having Katu, Tikta Rasa, Laghu - Ruksha guna, Ushna Virya, Vatakaphghna and Dipana - Pachana gunas. Acharyas agreed on the use of Vatakaphaghna, Ushna, Vatanulomaka drugs as a first line of treatment of Shwasa.

Thus, Tulsi acts on Shwasa in the following manner:

Table 8

Shwasa	Tulsi
1. Kapha Vata Pradhana Vyadhi	Katu - Tikta Rasa[4] Laghu - Ruksha Guna Ushna virya Doshaghnata - Vatakapha Shamaka
2. Nidana Sevana	As Tikta is in favour to increase Agnibala, it helps to overcome Agnimandyata. Also Deepana and Pachana properties help in Agnideepana.
3. Agnimandya and Amotpatti	Tikta Katu Rasa, Ushna Virya and Laghu Ruksha Guna will deblock the process of Amotpatti.
4. Srotoavarodha	Ushna Virya causes Swedana and acts as Srotoshodhana. Also Tulsi arka (and aerosol) has Laghupaki, Vyavayi and Vikashi guna which helps in deblocking Srotovarodha.

5. Vyadhinashakatva	Kaphavatanashaka, Siroverechan, Pachana, Anulomana, Kasahara, Swasahara properties. Tulsi arka is vyavayi and Vikashi and therefore quickly assimilates in the body and helps in emergency condition of the disease Shwasa.

Also leaf extract modulates humoral immune response and it also has expectorant and stimulating properties.

Tulsi is reported to posses Anabolic property which increases Dehabala and Dhatubala of the patient in addition to smooth muscle relaxant properties which acts in.

Clinical results of both the formulations against cardinal symptoms such as Shwasakashtata, Kasa, Urahashula etc. as well as associated symptoms were highly significant.

In terms of overall effect of therapy 90% patients improved moderately in group treated with both the groups while 10% patients had mild improvement in both the groups. On comparing the effect of the formulations on cardinal symptoms it was found that 67.07% relief in Tulsi tablet group and 60.17% relief were found in Tulsi arka group which implies that success rate of Tulsi tablet was better than arka.

Conclusion

Thus, in life style disorders like Tamakashwasa, Tulsi is found to be safe and effective medicament. It is quite evident from literary review that Acharya Charaka has first time described the drug Tulsi in Shwasahara Mahakashaya .Both the groups showed significant results in the management of Tamaka Shwasa. The efficacy of various formulations of Tulsi in the management of Shwasa, mentioned by different Acharyas is thus supported by present study.

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Clinical Study

Anti Ulcer Activity of Guduchi (*Tinospora cordifolia* (Willd) Miers) in three different formulations

*Dr. B. K. Prashanth, **Dr. K.Shankar Rao,

Abstract:

In the present modern era, due to fast, hectic life style, mental stress and incompatible food habits, most of the population is becoming prone to life style disorders like Amlapitta. It can be checked in its initial stages effectively by the administration of 'tikta rasa' pradhana dravyas. Hence, it was planned to evaluate suitable compound from the treasure house of Ayurveda, which can be beneficial in Amlapitta. In the present study, three formulations of Guduchi i.e. Satwa, Ghrita and Kashaya were selected. To prove their efficacy over hyperacidity, it was planned to evaluate through suitable experimental models. Guduchi Kashaya was found to be most effective against hyperacidity, followed by Guduchi Ghrita and Guduchi Satwa.

Key words: Hyperacidity, Amlapitta, Guduchi, Satwa, Ghrita, Kashaya, Pyloric ligation

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Clinical Study

Anti Ulcer Activity of Guduchi (*Tinospora cordifolia* (Willd) Miers) in three different formulations

*Dr. B. K. Prashanth, **Dr. K.Shankar Rao,

INTRODUCTION:

In the present modern era, due to fast, hectic life style, mental stress and incompatible food habits, most of the population is becoming prone to life style disorders like Amlapitta. Sour belching, heart burn etc. are the most common and earliest symptoms found in this condition. If this stage is managed in initial stages, it may not enter into fully manifested condition. The drugs given at present for the disease in allopathic system are only palliative in nature. In chronic stage, surgery is advised, which is painful and expensive. Tikta rasa pradhana dravyas have been advised to be given for Amlapitta[1]. The tikta rasa does pitta shaman, thus bringing down the severity of the disease. There are many drugs which are having predominance of tikta rasa. To substantiate the fact of tikta rasa bringing down the aggravated pitta condition, an experimental study was carried. Considering this, Guduchi, a Tikta rasa pradhana dravya, which is easily available, was chosen for the experimental study. Three different formulations i.e. Satwa, Ghrita and Kashaya were prepared out of it and subjected to the experimental studies.

Guduchi was chosen out of the many 'Tikta Rasa' dravyas, as the drug is mentioned in many of the formulations mentioned for amlapitta. The drug is also easily and abundantly available in the place where the study was carried out.

Aims & Objectives:

a) To evaluate the efficacy of different forms of Guduchi in Hyperacidity.

b) To evaluate the better formulation amongst the three in Hyperacidity.

Materials and Methods:

Raw Material: The raw drug Guduchi was evaluated and authenticated by botanist.

The Trial Drugs: The three trial drugs i.e. Guduchi Satwa, Ghritha and Kashaya were prepared according to the standard procedures.

Selection of rats:

Winstar Albino rats of either sex, weighing between 150 – 250 g, were used in the study. The animals were maintained under ideal husbandry conditions and reared under standard conditions of temperature, humidity and exposed to 12 hour light and dark cycles. All animals were exposed to the same environmental conditions and were maintained on a standard diet and water *ad libitum*. The experimental protocol was approved by the Institutional Animal Ethical Committee.

Experimental design[2]:

Rats were randomized in to 4 groups, each consisting of 6 animals. Group (I) normal control group and Group (II), (III) and (IV) were drug - treated groups which received Guduchi Satwa (18 mg), Ghrita (0.865 ml) and Kashaya (1.73 ml) respectively. The drugs were administered orally once daily for 5 consecutive days to the respective groups and vehicle to control group in a volume of 1 ml/100 g body weight. During 5^{th} and 6^{th} day only the drugs in the respective doses were administered. On 7^{th} day, 1hr after drug administration, rats were anesthetized by intra-peritoneal inj. ketamine. Abdomen was opened layer-by-layer, 1-2 cm below the xyphoid process, stomach was identified and pyloric end ligation was done with cotton thread. Abdomen was closed layer by layer with interrupted sutures. After 14–18 hrs of ligation, rats were sacrificed with an overdose of ketamine and abdomen was opened. The cardiac end of stomach was ligated and the stomach was taken out. Gastric juice was collected from the stomach and analyzed for volume, pH value, free acidity and total acidity. The ulcer score was calculated using Lawrence and Bacharach method.

Dose fixation:

The dose fixation of drug for rats is calculated as per Paget & Barnes 1969.

Rat dose = Human dose x 0.018 x 5/kg body wt.

Investigation methods:

1) **Volume:** The gastric juice was collected in a graduated test tube to measure the total volume.

2) **pH:** A drop of gastric juice was taken with a glass rod and placed on a strip of pH paper. The color change was matched with the standard chart and the reading was noted.

3) **Free and total acidity:** These were estimated as described by Varley (1962).

Principle:

Reagents:

i) Sodium hydroxide N/100 - freshly prepared.

ii) Topfer's reagent, pH range 2.9 - 4.6

iii) Phenolphthalein, pH range 8 - 10

Procedure:

The collected gastric juice was centrifuged at 6000 rotations/min. for 10min. 1ml of this centrifuged gastric juice was taken and used for bio-chemical investigations. 2 - 3 drops of Topfer's reagent indicator with 1ml gastric juice was added in a test tube. Titration with sodium hydroxide N/100 was done, until yellowish - orange end point observed. The volume used was noted for calculating the amount of free acid.

2-3 drops of phenolphthalein indicator was added and titration was done till persistent red tinge was observed. The total volume used was noted for calculation of total acid. Free acidity and total acidity were calculated in mEq/L/100g. body weight.

4) **Ulcer score:** The incidence and grading of ulcer was done according to the method described by Lawrence and Bacharach[3].Stomach was cut opened along with the greater curvature. The mucous was washed under slow running tap water. Ulcers were examined under a magnifying lens.

Grading of gastric mucous:

Grade	Type of mucous
0	Normal
1	Scattered hemorrhagic spots
2	Hemorrhagic spots + ulcer
3	Deep hemorrhagic spots + ulcer
4	Perforation of mucous

The values found were tabulated appropriately and subjected for statistical analysis.

Results:

The control group served as before treatment (BT) reading, while the trial groups are presented as the after treatment (AT) reading.

Paired 't' test formula was used to calculate the readings.

Discussion :

Group1 - Guduchi Satwa.

	Parameter	Mean X (in ml)	SD	SE	't' value	'P' value
1	Volume	0.4166	0.584	0.238	1.745	>0.1
2	pH	1	0.5477	0.2235	4.474	<0.01
3	Free acidity	2.666	2.338	0.954	2.79	<0.05
4	Total acidity	2.50	2.50	1.024	2.439	<0.1
5	Ulcer score	0.833	0.983	0.401	2.075	<0.1

Group 2 - Guduchi Ghrita

	Parameter	Mean X (in ml)	SD	SE	't' value	'P' value
1	Volume	1.083	0.204	0.083	12.996	<0.001
2	pH	0.916	0.376	0.153	5.961	<0.01
3	Free acidity	1.166	0.408	0.166	6.996	<0.001
4	Total acidity	1.833	0.408	0.166	10.998	<0.001
5	Ulcer score	1.33	0.516	0.210	6.322	<0.1

Group 3 - Guduchi Kashaya:

	Parameter	Mean X (in ml)	SD	SE	't' value	'P' value
1	Volume	2.083	0.376	0.153	13.55	<0.001
2	pH	1.333	0.258	0.105	12.64	<0.001
3	Free acidity	1.166	0.516	0.210	7.902	<0.001
4	Total acidity	2.666	0.516	0.210	12.645	<0.001
5	Ulcer score	1.50	0.547	0.223	6.70	<0.01

SD = Standard Deviation SE = Standard Error

Inter group comparison:

	Parameters	Groups	't' value	'P' value	Remarks
		G2 & G1	2.629	< 0.050	G2>G1
1	Volume	G3 & G1	5.875	< 0.001	G3>G1
		G3 & G2	5.726	< 0.001	G3>G2
		G2 & G1	0.309	> 0.10	G2=G1
2	pH	G3 & G1	1.335	> 0.1.	G3=G1
		G3 & G2	2.230	< 0.050	G3>G2
		G2 & G1	1.541	> 0.10	G2=G1
3	Free acidity	G3 & G1	1.020	> 0.10	G3=G1
		G3 & G2	1.83	< 0.10	G3=G2
		G2 &G1	0.644	> 0.10	G2=G1
4	Total acidity	G3 &G1	0.153	> 0.10	G3=G1
		G3 &G2	3.079	< 0.020	G3>G2
		G2 &G1	1.096	> 0.10	G2=G1
5	Ulcer score	G3 &G1	1.452	> 0.10	G3=G1
		G3 &G2	0.553	> 0.10	G3=G2

CONCLUSION:

The study has proved the efficacy of Guduchi in its three formulations over hyperacidity. The results concluded that trial drug 3 i.e. Guduchi Kashaya provided highly significant result (P<0.001) over other two trial drugs in reducing the gastric juice volume. It provided moderate result (P<0.020) over Guduchi Ghrita in reducing the total acidity. Trial drug 2 i.e. Guduchi Ghrita provided moderately significant result (P<0.050) over Guduchi Satwa in reducing the volume of gastric juice. The results for other parameters are not significant over Guduchi Satwa (P>0.10). In the present study, Guduchi Kashaya is the most effective drug against hyperacidity, followed by Guduchi Ghrita and Guduchi Satwa.

Similarly, other tikta rasa pradhana drugs can be studied for its action against hyperacidity and may be found effective in the treatment. For the betterment of health in lifestyle related diseases and prevention of stress related hyperacidity, proper diet consisting of tikta rasa pradhana ahara plays an important role.

Probable mode of action:

- Guduchi has Tikta rasa, Guru, Snigdha guna, Madhura vipaka and Tridoshaghna property, which acts against the Teekshna, Ushna, Laghu guna of pitta and does the Pittadosha shamana. Hence, the three formulations gave positive results against hyperacidity.
- Kashaya has Sthambana, Soshana, Sheeta, Raktapitta prashamana property. As the pyloric end of stomach was ligated during the experiment, the local action of Kashaya might have produced the desired result. The gastric juice analysis showed decrease in volume and pH value. The Soshana guna of Kashaya was probably responsible for the 'Dravyata kshaya' (decrease in volume) and 'Gunata kshaya' (decrease in pH).
- As the Kashaya is mentioned under the 'Panchavidha Kashaya Kalpana', it is more potent than the other two 'Upakalpanas' i.e. Ghrita and Satwa. Moreover, the Kashaya is administered in a fresh form thus giving significant results in comparison with the other groups.
- Further, clinical trials are necessary and needed to evaluate the efficacy of the formulations. The clinical trial results may vary, as the method and parameters taken are different.

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Clinical Study

Evaluation of Therapeutic Effect of *Chitrakadi Avaleha* In The Management of Bronchial Asthma W.S.R To *Tamaka Shwasa*

*Dr. Sachin.Deva, **Dr. Anil Kumar Rai.D, ***Dr. Nagraj. S, ****Dr. G. Shrinivasa Acharya

Clinical Study

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Introduction

Bronchial Asthma is one of the most common chronic diseases globally and currently affects approx 300million people.There is the rising incidence that appears to be associated with increased urbanization and change in lifestyle. Asthma is a disease of airways that is characterized by increased responsiveness of the tracheobronchial tree to a multiplicity of the stimuli.Asthma is manifested physiologically by the widespread narrowing of the air passages,which may be releived spontaneously or as a result of the therapy,and clinically by paroxysms of dyspnea,cough & wheezing.In Ayurvedic paralance symptoms of Bronchial Asthma closely resembles with that of Tamaka shwasa caused by multiple factors like expose to dust,sensitive diets etc where shwasa and kasa are the cardinal symptoms.

Aims and objectives

1 To evaluate the therapeutic effect of Chitrakadi avaleha in bringing symptomatic releif in the patients suffering from Tamaka Shwasa.

2 To explore the efficacy of the combination in completely curing or decreasing the episodes of Tamaka Shwasa.

Source of data

Patients complaining of cough and breathlessness who attended the OPD & IPD of SDM Ayurveda Hospital during the period from April 2001 to January 2002 were screened.Out of these,56 patients suffering from Tamaka Shwasa fulfillng the below criteria were taken for this study.The complete profile of the patient was prepared as per the detailed proforma consisting all the relevant data like symptomatology,physical signs,assesment criteria, results of the laboratory investigations, patient's constitution, intervention and other information.

Inclusion criteria

56 patients from SDM Ayurveda Hospital in whom Tamaka Shwasa was diagnosed were taken for the study according to the following criteria of inclusion.

1. Patient with Pratyatma lakshana of Tamaka Shwasa
2. Age group above 5 years.
3. A minimum history of 6 months.

Exclusion criteria

During the screening of the patients in the hospital,certain patients of Tamaka Shwasa were excluded from the study as per below mentioned criterion

1. Below age group of 5yrs
2. Patients of Tamaka Shwasa who also suffer from other systemic disorders like Tuberculosis, complications of Bronchial Asthma like emphysema, Cor pulmonale etc.

Investigations

All the patients included in the study were also subjected to the following loboratory investigations as a routine measure

1. Blood-TC, DC, ESR, Hb%, other investigations if needed
2. Routine urine analysis
3. Spirometric test
4. X-ray wherever necessary.

Design

It is single blind comparitive clinical study with pre-test and post-test design wherein, 56 patients suffering from Tamaka Shwasa of either sex

of age group of 5 years were selected and randomly allocated into GroupA-Test and GroupB-Control groups.

Intervention

GroupA patients were treated with oral administration of Chitrakadyavaleha along with hot water in a dose of 10gms b.i.d for 1month.This group was considered as Test group.

GroupB patients were treated with Durjalajeta Rasa 250mg b.i.d orally with hot water and Pushkaramulasava 15ml t.i.d for 1 month.This was the Control group.

Assessment criteria

The state of the disease of Tamaka Shwasa,changes after the intervention, improvement or otherwise was determined by adopting the standard methods of scoring.Functional efficiency of the respiratory system was assessed both before and after the intervention to note any change by using the spirometer.The details of the assessment criteria are given below.

Severity of Tamaka Shwasa:

Mild intermittent-

- Symptoms < 2 times a week
- Asymptomatic and normal PEF between exacerbations,brief exacerbation (few hours to few days), intensity may vary.
- Night time symptoms < 2times a month.
- Lung function – FEV or PEF 60% to 80% predicted, PEF variability > 20%

Mild persistent-

- Symptoms > 2times a week but < 1 time a day,exacerbation may affect activity.
- Night time symptoms > 2 times a month.
- Lung function-FEV,or PEF 80% predicted,PEF variability 20% to 30%.

Moderate persistent-

- Daily symptoms,daily use of short acting beta2 agonist inhaler,exacerbation affects activity, exacerbations > 2 times a week,may last for few days.
- Lung functions-FEV or PEV 60% to 80% predicted,PEF variability>30%.

Severe persistent-

- Continual symptoms,limited
- Physical activity affected with frequent exacerbation.
- Night time symptoms-frequent
- Lung function-PEV or PEF <60% of predicted,PEF variability>30%.

Breathlessness:

1. Mild-Breathlessness with activity.
2. Moderate -with talking
3. Severe-At rest
4. Impending respiratory failure-Breathlessness at rest.

Speech:

1. Mild-Sentences
2. Moderate-Phrases
3. Severe-Words
4. Impending respiratory failure-Mute.

Cough:

1. Morning bouts or after exercise-do not disturb work
2. Continuous cough during morning-Disturbing work
3. Continuous cough during morning and night hours-Disturbs activity.
4. Throughout whole day and night with disturbed sleep and activities.

Sputum:

1. Less than 2.5ml/day
2. 2.5ml to 15ml/day
3. 15 to 25ml/day
4. >25ml/day

Body position:

1. Mild-Able to recline
2. Moderate-Prefers sitting
3. Severe-Unable to recline
4. Impending respiratory failure-Unable to recline

Respiratory rate:

1. Mild- >10/min
2. Moderate- >20/min
3. Severe-after > 30/min
4. Impending respiratory failure > 30/min

Expansion of chest:

1. Circumference of chest is noted during inspiration and expiration.
2. Difference in circumference is calculated in cm.

Laboured breathing:

1. Mild-Usually no use of accessory muscles
2. Moderate-Rarely uses accessory respiratory muscles
3. Severe-Usually uses accessory respiratory muscles
4. Impending respiratory failure-Paradoxical thoraco-abdominal movement.

Breath sounds:

1. Mild-Moderate wheezing at mid to end expiration.
2. Moderate-Loud wheeze throughout expiration.
3. Severe-Loud inspiratory and expiratory wheezes.
4. Impending respiratory failure-Little air movement without wheezes. (silent chest)

Heart rate:

1. Mild-100/min
2. Moderate-100-120/min
3. Severe- > 120/min
4. Impending respiratory failure-Relative bradycardia

Pulses paradoxes:

1. Mild < 10mm of Hg
2. Moderate-10-25mm of Hg
3. Severe > 25mm of Hg
4. Impending respiratory failure-Often absent

Mental status:

1. Mild-May be agitated
2. Moderate-Usually agitated
3. Severe-Always agitated
4. Impending respiratory failure-Confused or drowsy.

Spirometric tests:

Computerized electronic kit micro spirometer is used in this study for assessing the functional efficacy of the lung.The technical features of this spirometer includes-

Flow meter	Bi-Directional digital turbine
Range for flow measurement	0.03-20 l/s
Range for volume measurement	10l
Accuracy of measurement	3% or 50ml
Dynamic resistance @ 12 l/s	< 0.7cmH2O/l/s

The inspiration of the predicted values for spirometric lung volumes was calculated following the ERS 93 criteria(Official Statement of the European Respiratory Society,The European Respiratory Journal Volume 6,Supplement 16,March 1993) following is the list of spirometric tests,included in the present study on Tamaka Shwasa.

Symbol	UM	Parameter
FEC	l/(btps)	Forced Expiratory Vital Capacity
FEV1	l/(btps)	Forced Expiratory Volume in 1 Second
PEF	l/sec	Peak Expiratory Flow
MEF25%	l/sec	Maximal Expiratory Flow when 75% of the FVC remains to be exhaled
MEF50%	l/sec	Maximal Expiratory flow when 50% of the FVC remains to be exhaled
MEF75%	l/sec	Maximal Expiratory Flow when 25% of the FVC remains to be exhaled.
FEF25-75%	l/sec	Forced mid-expiratory flow
FEV1/FVC%	l/sec	FEV1 as a percentage of FVC.

Broncho dilators:

If the patient is on bronchodilators,the dosage of the same to become symptom free is noted.

Steroids:

If the patients are taking steroids,the dosage of the same to remain asymptomatic is noted.

Assessment of overall effect:

For assessing the overall effect of the treatment, the total scores of cardinal symptoms of Tamaka Shwasa after the treatment was considered.As per the reduction in the total scores of dyspnoea,cough and wheezing the overall effect is calculated as under:

Complete remission-Total score is 0 after the treatment.

Moderate remission-Reduction in more than 60% of the initial score.

Average remission-Reduction in score between 30 to 60%

Unchanged-Reduction less than 30% of the initial score.

Adopting the scoring method,symptoms of the illness like breathlessness, cough, sputum, speech, physical signs like respiratory rate, heart rate, expansion of the chest as well as spirometric parameters are taken as assessment criteria in this study.

Observations

Effect of Chitrakadyavaleha, Puskara-moolasava and Durjalajeta Rasa in patients of Tamaka Shawasa. (paired 't' test)

GROUP A

	B.T	A.T	DIFF. in means	S.D	S.E	t	P
Severity	2.962	1.285	1.577	0.578	0.133	13.916	<0.001
Dyspnoea	2.423	0.085	1.538	0.647	0.127	12.127	<0.001
Speech	2.269	0.923	1.346	0.562	0.110	12.223	<0.001
Cough	2.231	1.00	1.231	0.514	0.101	11.20	<0.001
Sputum	2.269	0.962	1.308	0.628	0.121	10.795	<0.001
Body position	2.038	0.808	1.230	0.430	0.084	14.606	<0.001
Respiratiry rate	25.538	24.077	1.462	2.370	0.465	3.144	<0.001
Expansion of chest	1.835	2.231	0.395	0.199	0.039	10.132	<0.001
Laboured breathing	1.923	1.00	0.923	0.392	0.769	12.00	<0.001
Breath sounds	1.923	0.962	0.923	0.445	0.087	11	<0.001
Heart rate	78.769	74.846	3.923	3.452	0.677	1.364	=0.185
Mental state	1.962	0.962	1	0.4	0.0784	12.748	<0.001

GROUP B

	B.T	A.T	DIFF. in means	S.D	S.E	t	P
Severity	3.360	1.360	2.00	0.577	0.115	17.321	<0.001
Dyspnoea	3.080	0.920	2.160	1.993	0.399	5.418	<0.001
Speech	2.640	0.800	1.840	0.800	0.160	11.500	<0.001
Cough	2.280	0.760	1.520	0.872	0.174	17.321	<0.001
Sputum	2.040	0.600	1.440	0.651	0.130	11.060	<0.001
Body position	2.240	0.880	1.360	0.638	0.128	10.663	<0.001
Respiratiry rate	23.660	20.720	2.640	3.239	0.648	4.076	<0.001
Expansion of chest	1.916	2.216	0.300	0.396	0.792	3.790	<0.001
Laboured breathing	2.00	0.840	1.160	0.374	0.075	15.571	<0.001
Breath sounds	2.04	0.840	1.200	0.500	1	12	<0.001
Heart rate	77.04	75.6	1.440	4.063	0.813	1.772	=0.089
Mental state	1.960	0.8	1.160	0.374	0.0748	15.501	<0.001

Comparison of effect of treatment on symptomatology in the two groups

(unpaired t test)

Comparison of effect of treatment on Severity in the two Groups

Group	No. of Patients	Diff. in mean	Unpaired 't' test			
			S.D	S.E.M	't'	P
B	25	2	0.577	0.115	2.391	0.021
A	26	1.615	0.571	0.112		

Comparison of effect of treatment on Dyspnoea in the two Groups :

Group	No. of Patients	Diff. in mean	Unpaired 't' test			
			S.D	S.E.M	't'	P
B	25	2.04	0.841	0.168	3.193	0.002
A	26	1.423	0.504	0.98		

Comparison of effect of treatment on Speech in the two Groups

Group	No. of Patients	Diff. in mean	Unpaired 't' test			
			S.D	S.E.M	't'	P
B	25	1.88	0.833	0.167	2.486	0.016
A	26	1.385	0.571	0.112		

Comparison of effect of treatment on Cough in the two Groups :

Group	No. of Patients	Diff. in mean	Unpaired 't' test			
			S.D	S.E.M	't'	P
B	25	1.64	0.07	0.14	2.133	0.038
A	26	1.269	0.533	0.105		

Comparison of effect of treatment on Sputum in the two Groups

Group	No. of Patients	Diff. in mean	Unpaired 't' test			
			S.D	S.E.M	't'	P
B	25	1.88	0.0781	0.156	3.159	0.001
A	26	1.231	0.514	0.101		

Comparison of effect of treatment on Body Position in the two Groups

Group	No. of Patients	Diff. in mean	Unpaired 't' test			
			S.D	S.E.M	't'	P
B	25	1.56	0.712	0.142	3.226	0.002
A	26	1.077	0.272	0.053		

Comparison of treatment on Respiration Rate in the two Groups

Group	No. of Patients	Diff. in mean	Unpaired 't' test			
			S.D	S.E.M	't'	P
B	25	3.6	2.63	0.526	2.104	0.041
A	26	2.308	1.668	0.327		

Comparison of effect of treatment on Expansion of Chest in two Groups

Group	No. of Patients	Diff. in mean	Unpaired 't' test			
			S.D	S.E.M	't'	P
B	25	0.6	0.502	0.1	2.244	0.003
A	26	0.368	0.157	0.031		

Comparison of effect of treatment Laboured Breathing in the two Groups :

Group	No. of Patients	Diff. in mean	Unpaired 't' test			
			S.D	S.E.M	't'	P
B	25	1.36	0.569	0.114	3.542	<0.001
A	26	0.846	0.464	0.091		

Comparison of effect of treatment on Breath Sounds in the two Groups :

Group	No. of Patients	Diff. in mean	Unpaired 't' test			
			S.D	S.E.M	't'	P
B	25	1.36	0.638	0.128	3.894	<0.001
A	26	0.769	0.43	0.084		

Comparison of effect of treatment on Heart Rate in the two Groups :

Group	No. of Patients	Diff. in mean	Unpaired 't' test			
			S.D	S.E.M	't'	P
B	25	3.04	2.01	0.432	2.821	0.007
A	26	1.692	1.35	0.265		

Comparison of effect of treatment on Mental Status in the two Groups :

Group	No. of Patients	Diff. in mean	Unpaired 't' test			
			S.D	S.E.M	't'	P
B	25	0.76	0.436	0.087	4.378	<0.001
A	26	1.385	0.571	0.112		

Conclusion

Based on statistical observations severity, dyspnoea,cough etc symptoms markedly decreased in both the groups and the results were statistically highly significant. When the effect of two remedies are compared, Group B patients showed better response.

The absolute values of FVC in Group B showed better result compaired to Group A. Both the groups showed elevation in absolute values of FEV 1,after the treatment. Improvement in the two groups when compaired , a better result was observed in Group B . The Spirometric values of FEV1 /FVC % when compared Group B showed better improvement than Group A.

The analysis of the overall effect of the treatment showed a better esponse in the Group 1 with regard to the complete remission of the symptoms of Tamaka Shwasa.The treatment was given in the patients for a duration of one month in both the groups. None of the patients in both the groups developed any untoward symptoms or any side effects during the course of the treatment and therefore these medicines in therapeutic dosage are very safe.

The above said observations indicate that patients have shown improvement in all the criteria of assessment of Tamaka Shwasa. To get the relief in Tamaka Shwasa, the medicines administered should have the therapeutic effects like Srotomardavakarana, Kaphaharana, Kaphavilayana, Kaphanissarana and Kasaghna. These therapeutic effects clear the air passages and also widen them.. The ultimate effect will be reduction in the airway resistance-the basic pathology of the Tamaka Shwasa. The medicines administered in these two groups have shown all these therapeutic effects and the severity of the illness therefore has markedly reduced. In that sense, this will be a complete treatment of Tamaka Shwasa. Further, the comparison of the therapeutic effects in the two groups showed a marginally better improvement in the Control group rather than the Test group. Contrary to this, complete remission of symptoms was better observed in Group 1. It would be better to conclude that the dosage of Chitrakadyavaleha prescribed in this study is comparatively less. One can get a better result if the dosage of the Chitrakadyavaleha is increased. Further, Avaleha preparation is more palatable than the medicines in other forms. And therefore, Chitrakadyavaleha is better accepted by the patients including children. Thus the administration of the same is very easy. In this regard the Chitrakadyavaleha has an edge over any other medicine. The present thesis work is presented with the hope that the observations and results widen the scope for further research and advancement in this aspect of Ayurvedic Medicine, for the betterment of mankind.

Reference : Dissertation by Dr.Anil Kumar Rai on "Evaluation of therapeutic effect of Chitrakadi Avaleha in patients of Tamaka Shwasa-Aclinical study"

LITERARY REVIEW

An Ayurvedic Perspective on seasonal influence and management of cardiac disorders

*Dr. BabitaYadav,**Dr. Sandya K, ***Dr. Sulochana Bhat, ****Dr. M.M.Padhi

Abstract

Till early eighties, it was widely believed that heart disease was virtually irreversible. This meant that once developed, the disease ran a progressive course until the coronary arteries were completely blocked. But recent studies have proven beyond doubt that not only it is possible to stall the process of artery blockage but also the blockage can be reversed. But it is quite sad that the highly technological approach of the modern medicine literally bypasses the underlying causes of the heart disease. Ayurveda, on the other hand, aims to strike at the gross root of the disease. A real cure of any disease is only possible if we adopt a holistic approach as advocated in Ayurveda and address the problem at its root level. By keeping the factors affecting the prevalence of heart diseases in mind, recently researchers discover that winter is worst season of the year for heart disease

The concept of cold weather and the cardiac diseases seems to be as old as our Classics. According to Ayurveda year is divided into 6 seasons and out of them winter consist of Hemant and Shisher ritu The ancient Indian Physician laid down basic principles for the maintenance of normal positive health and pronounced certain preventive measures against the diseases including cardiac aliments and widely described the diet ,activities and rituals. So to maintain the climatic homologation of dosha in the form of equilibrium in different seasons and to promote health, we can follow the regimen mentioned as per ritucharya.

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LITERARY REVIEW

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*Dr. BabitaYadav,**Dr. Sandya K, ***Dr. Sulochana Bhat, ****Dr. M.M.Padhi

Cardiovascular diseases made up 16.7 million, or 29.2% of total global deaths according to World Health Organization (2003) and around 80% of CVD deaths took place in low and middle-income countries[1]. India had 6.6 million cases and now India is on the verge of becoming the "heart disease capital of the world", experts warned today[2].

Till early eighties, it was widely believed that heart disease was virtually irreversible. This meant that once developed, the disease ran a progressive course until the coronary arteries were completely blocked. But recent studies have proven beyond doubt that not only it is possible to stall the process of artery blockage but also the blockage can be reversed. This implies that through measures other than angioplasty (ballooning) or bypass surgery, it is quite possible to increase the blood flow to the areas of the heart that receive less than adequate blood supply due to obstruction of the coronary arteries.

It is quite said that the highly technological approach of the modern medicine literally bypasses the underlying causes of the heart disease. Ayurveda, on the other hand, aims a striking at the gross root of the disease. A real cure for this disease is only possible if we adopt a holistic approach as advocated in Ayurveda and address the problem at its root level.

There are lots of factors affecting the prevalence of heart diseases like Stress, Dyslipidemia, hyperglycemia, hereditary and seasonal changes have influence on prevalence of heart diseases. Recently researchers descover that winter is worst season of the year for heart disease[3,] by keeping the factors affecting the prevalence of heart diseases in mind, various scientist studied how cold weather affects blood pressure and also lead to cardiac diseases. Researchers analyzed seasonal variation in blood pressure among 8,801 adults over the age of 65 in France over two years.The results showed both systolic and diastolic blood pressures varied with the weather .Overall, the average systolic blood pressure was 5 points higher in winter than in summer. But the study conclude that older people between the ages of 75 and 84 and those with previous coronary heart disease seemed to be more vulnerable to the effects of temperature reductions, [4]" Both systolic and diastolic blood pressures were highest during winter and that is why hypertension complications are more frequent in winter.[5]

Exactly why winter is prime time for heart attack is still an evolving story, but many theories exist and possibly overlap. Research has shown heart attacks are more common and more severe[6]. Lower outdoor temperatures are linked to an increase in the risk of heart attacks[7], winter is worst season of the year for heart disease,. With that in mind, they studied how cold weather raises blood pressure.[8]

In a scientific study Bhaskaran and colleagues on 84,010 patients admitted to hospital with a heart attack between 2003 and 2006 and compared this with daily temperatures. They found that a 1°C reduction in average daily temperature was associated with a cumulative 2% increase in risk of heart attack for 28 days. The highest risk was within two weeks of exposure. So even a small increase in risk decode to around 200 extra heart attacks for each 1°C reduction in temperature on a single day[9]. In another study the relationship between winter ischaemic heart disease (IHD), deaths and weather is investigated using a synoptic climatologically approach[10].

Winter mornings may be particularly risky. Studies demonstrated that more heart attacks occur nationwide during winter than any other season.[11]Scientist believe that a combination of an increased prevalence of respiratory infections (i.e.,

flu) in the winter months, increased consumption of fatty foods, salt and alcohol in wintertime and imbalances in the body's hormonal levels due to reductions in the amount of sunlight may be contributing factors.[12] Hemanta ritu means winter season which is beautifully quoted in Astang Hridya is similar to morning and the risk of heart attack is 40 percent higher in the morning compared to any other time of the day.[13]

The concept of cold weather and the cardiac diseases seems to be as old as our Classics. According to ayurveda year is devided into 6 seasons and out of them winter consist of hemant and shisher ritu[14] means month of November to Feburary.To maintain the climatic homologation of dosha in the form of equilibrium in different seasons and to promote health, we can follow the regimen mentioned as per ritucharya. Ayurveda has laid a great stress on prevention and control of diseases.During this season out of three humors mainly Vata dosh aggravates and due to this aggravated vata, digestive activity becomes powerful. Sweet, salty & sour food stuffs can be taken, to pacify the vitiated vata[15]. The diet and life style for the winter season is mentioned in classics under the concept of Ritucharya means what is to be followed by all individuals according to seasons to live healthy and long life

Recommended food articles, diet and activites during Hemanta & Shishira ritu

Ahara (food items): - The fruits & vegetables which are[16]

- Sweetened in taste
- Light in nature
- Cold for digestion like Amalki,
- Meat of lean and thin birds & animals like Lava, kapinjala, Dear & Rabbit Therapeutic use of alcohol
- Old variety of rice,
- Green gram
- Rice
- Wheat
- Barley
- Parval and Honey*

All types of above mention are beneficial and can be used in more quantity. during Hemanta Ritu (A.H.Su.3/57)

Vihar (Activites and practices) [17]

- Local application of paste of Agaru
- Woolen clothes keep the body warm
- Exposure to sunlight
- Oil message and sudation
- Live in warm places

A very common cause of heart diseases is mental stress. Regular practice of yoga and Pranayama (breathing exercises) reduces stress levels. Also, meditation has been scientifically proven to prevent as well as manage heart diseases

Avoid (Apathya) [18] too much use of

- saturated Fat
- Oils
- Curd
- Bitter, pungent and astringent taste dietary items
- Day sleep,
- Cold breez etc.

Ayurveda is very much concerned about conservation of health. Ayurveda presumes that improper dietary habits give rise to various disorders. With practice of dietary measures recommended in Ayurveda will definitely help with respect to quality,quantity,processing and cooking combination One can improve lifestyle and manage unnecessary stress by following Sadavritta(Ethical prompt),Achaara Rasayana (normal conduct)[19] Ahaar (diet) and Vyayaam (physical exercise)

According to Ayurveda, heart takes higher position not only by its vital functions but also by its psychological and spiritual importance [20]. The human body consists of six component (four limb, trunk & head & neck)[21], the Indriyas (Five Sensory organ along with their object), the wisdom, the mind and the soul – all of these are dependent upon normal functioning of the heart The ancient Indian Physician laid down basic principles for the maintenance of normal positive health and

pronounced certain preventive measures against the diseases including cardiac aliments,

Cardiac problems arise mainly due to improper or mainly kapha and vata vitiating diet and stressful life styles[22]. "These lead to thickening of arteries (dhamani praticaya) or hardening of arteries (dhamani kathinaya) resulting in marga sanga (angio-obstruction)that ultimately causes vitiation of vata dosha and result into hypertension,angina or coronary artery diseases

Causes of heart disease in Ayurveda [23]

- Physical exertion
- Drastic & excessive purgation & enema.
- Anxiety.
- Fear
- Terror
- Faulty management of disorder.
- Suppression of vomiting & ama.
- Injury

Symptoms of Heart Disease[24]:

- Abnormal discoloration of skin
- Fainting
- Fever due to Inflammatory heart disease.
- Cough
- Hiccough due to mitral Regurgitation or stenosis.
- Breathlessness.
- Distaste of mouth due to coronary insufficiency.
- Tendency of Emesis.
- Anorexia.
- Thirst
- Chest Pain
- Giddiness

The primary approach to health care in Ayurveda was the prevention one & then came the role of drugs. A combination of some herbal medicine is very useful in heart disease. There are some effective natural measures for regulating and strengthening the heart.

The principal of management is Langhana and Pachana therapy and mridu Virechana in case of Pattika Hridroga[25]

Some Promising single drugs:

Amla fruit[26] as an excellent anti-oxidant that can help to prevent arterial damage from free radicals as well as nourishing the heart tissue. Amla can help boost the immune system and nourish the heart.

Arjuna[27] A major cause of heart problems is due to hardening, inflammation or congestion of the arteries which can restrict blood flow as well as putting pressure on the heart muscle and tissue. is one of wonder herbs for strengthening the cardiac muscle, reducing arterial congestion and lowering blood pressure.

Ashwagandha[28] . It is a wonder herb for helping reduce tension in the body and mind as well as strengthen the heart muscle.

Some Classical formulations[29]:

- ♦ Haritkyadi Ghrita
- ♦ Pushkamooladi Kasaya
- ♦ Triphala Guggul

Council"s (CCRAS) contribution[30]: Many studies have been conducted by premier Institutions of Ayurveda and Modern medicine and allied disciplines. The Council has taken up investigation on Ischaemic heart diseases

1 **Guggulu:** A preliminary study was conducted on 40 patients for a period of three months to evaluate changes in all the fractions of lipid. The crude drug was administered 12-16 gm. per day in divided doses At the end of three months, the percentage of average fall was serum cholesterol 25.4% triglyceride 30%, phospholipid 21.5% and serum free fatty acid 35.1%. . The overall results showed a positive response in over 80 percent of patients.

2.**Puskara Guggulu:**Dried and powered roots of Puskaramula (Inula racemosa Hook F.) were mixed to coarse granules of oleroresin of Commiphora wightii (Guggulu, Sodhita (purified) in triphala kasaya) to formulate the drug Puskara

guggulu was administered in the divided doses of 8 to 10 gm. per day for a period of three to six months. precordial pain, dysponoea and palpitation were completely absent after the treatment. Their ECG pattern returned to normal with considerable improvement observed through various biochemical parameters. . In further studies, 355 patients of CHD, with evidence of Ischemia (in ECG) and exertional angina, when treated with Puskara guggulu (1:1w/w) powder for a period of 6 months, 6-8 Gms. /day in divided doses, showed a significant fall in cholesterol, triglycerides and total lipids.

3.Karavira :The drug has been administered in the form of tincture prepared from roots. Observation on 99 patients of Congestive Cardiac Failure due to Rheumatic Heart Disease, Hypertension, Mycordial infarction for 6 weeks. About 90% of patients showed relief and relapse was noted in about 20% of these patients.25 patients as the control group and 110 patients the trial group, showed very good effects of drug in patients with coronary insufficiency. The precordial pain and dysponea on effort, cardinal features of the disease were relieved completely in about 70% of the patients in the treated group and substantially reduced in the remaining patients.

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Clinical Study

A Randomized Control Trail Of Brahmi Gritha In Apasmara W.R.T Generalized Tonic Clonic Seizures

*Dr. Geetha L., **Dr. Suhas kumar shetty, ***Dr. Narayana Prakash. B

Abstract :

Introduction : Apasmara/epilepsy is devasting disease prevailing 5-10 in 1000 people. This study aims to determine effect of Brahmi gritha in Apasmara and to evaluate overall added effect to manas and shareera.

Materials and methods : 20 patients age between 16 – 60 years attending OPD of SDMCAH were randomly selected and divided into two groups for shamana group with dose of 40ml & control group (phenobarbitone : dose 60 – 120mg) for the duration of 3month with follow up of 3months. Detailed history, mental status examination of each patient done. Data collected on basis of structured proforma. Psychosomatic symptoms collected from questioners. It's comparative study with pre and post test design

Result: Brahmi gritha showed significant improvement in severity, frequency, duration of attack and pre& post ictal features along with improvement in higher mental functions.

Discussion: Phenobarbitone was useful in reducing most of symptoms, but did not show better effect than shamana group. Drug research in contemporary science introduced Anti-Epileptic Drug, all remained anti seizure rather than retrieving pathology. Ayurvedic medicines are psychoactive & psychonormalisor hence can give better life to epileptic patients.

Key words: Apasmara, Epilepsy, Brahmi gritha, Seizures

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Clinical Study

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INTRODUCTION

The word Apasmara means loss of memory (during attack).symptoms of apasmara similates with epilepsy. Epilepsy is the name for occasional, sudden, excessive, rapid and local discharge of the grey matter (Hugh lings Jackson). Apasmara/epilepsy is devasting disease prevailing 5-10 in 1000 people. This study aims to determine effect of Brahmi gritha in Apasmara and to evaluate overall added effect to manas and shareera

MATERIALS AND METHODS

Source of data: 20 patients, showing the symptoms of Apasmara were selected from OPD & IPD of S.D.M.College of Ayurveda & Hospital, Hassan. The patients were diagnosed purely on the basis of clinical presentation of Apasmara, as mentioned in Ayurvedic & modern texts.

Plan of the study:

1. Patients were selected randomly. It is a comparative study with Pretest - posttest design.
2. The selected patients were assigned into 2 groups, each consisting Of 10 patients.
3. Control Group – Patients received Phenobarbitone (Anti-epileptic drug) in the dose of 60-120 mg/day.
4. Brahmi Ghrita Shamana Group – Patients of this group received Brahmi Ghritha in form of Shamana Sneha in the dose of 4 Tolas (40 gms.) in single dose in empty stomach in the morning in between 9-10am, when the previously taken has been completely digested & the patient had good appetite. After Sneha Jeerna Lakshanas, patients were advised to take Laghu and Anabhishyandi Ahara like Peya, Vilepi, Yusha etc.

   Duration of treatment: 3 months.
5. Standard epilepsy scoring pattern and self-graded symptomatic scoring for Apasmara was adopted for statistical analysis. The data obtained was statistically analyzed by paired t-test, in comparison with the control group.

Follow up study: After stopping the drugs, the patients were instructed to attend the OPD at the interval of one month for 3 months. During this period, recurrence in the attack was note.

Inclusion criteria: Patients of Apasmara having a maximum interval of 3 months between two attacks, irrespective of age, sex & religion were included for the study.

Exclusion criteria: Patients suffering from mental retardation, congenital anomalies, infectious diseases of brain, vascular causes, toxic causes, metabolic causes of seizures were excluded from the study.

Assessment Criteria: The effect of trial & control drugs, administered to patients were assessed on the basis of following criteria:

1. Severity of attack
2. Frequency of attack
3. Duration of attack
4. Phena vamana
5. Pre-ictal features
6. Post-ictal features
7. Higher mental functions

Diagnostic criteria: The diagnosis of the patients was based on the following criteria:

- Pre ictal phase
- Ictal phase
- Post ictal phase

Drug review:

Brahmi Ghrita is considered as Medhya and indicated specially in the treatment of Apasmara and Unmada. Brahmi gritha explained in classics has the following qualities-Deepaka, Pachaka, Akshepakahara, Sanjnasthapaka, Sroto Shodhaka, Smrti Vardhaka, Balya, Rasayana, Medhya etc. it fulfills all the criteria for the management of Apasmara. It consists of Brahmi, Vacha, Kusta, Shankhapushpi and Purana Ghrita.

Mode of administration of gritha as

Shaman sneha: If properly administered, alleviates all the ailments instantaneously. It removes the Doshas, pervades all the system of the body, strengthens and rejuvenates the body, sense organs and mind.

Ketogenic diet

It is a high fat, low carbohydrates diet developed in 1920s for intractable epilepsy in children. Consist of daily regimen of 0.9g, enough fat to make up desired caloric requirement & a very small amount of carbohydrates. The ketogenic potential to antiketogenic potential ratio3:1 potential should be achieved to produce enough ketonemia & academia to affect seizure control.

This induces ketosis & acidosis which helps in controlling seizures since the objective is to induce a metabolic switch over from glucose to ketones

RESULTS:

In this present clinical study, 20 patients of Apasmara were treated in 2 groups i.e. modern anti-epileptic drug (AED) i.e. Phenobarbitone and Brahmi Ghrita as Shamana Sneha Following are the demographical and general observations made in this clinical study of Apasmara:

Effect of Brahmi Gritha as Shamana Sneha on signs & symptoms of Apasmara

Signs & Symptoms	Mean Score		% of Relief	S.D	S.E	't' Value	'P' Value
	B.T	A.T					
Severity of attack	2.0	0.5	75.0	0.850	0.269	5.58	<0.001
Frequency of attack	2.2	0.4	81.8	0.632	0.200	9.00	<0.001
Duration of attack	2.4	0.5	84.0	0.994	0.314	6.04	<0.001
Salivation	1.3	0.2	84.6	0.316	0.100	11.00	<0.001
Pre ictal features	1.5	0.3	80.0	1.033	0.327	3.67	<0.005
Post ictal features	0.9	0.1	88.9	0.919	0.291	2.75	> 0.05
Higher mental functions	0.9	0.1	88.9	0.632	0.200	4.00	<0.005

Overall effect of Brahmi Ghrita as Shamana Sneha

IMPROVEMENT	NUMBER OF PATIENTS	PERCENTAGE
MARKED IMPROVEMENT	4	40.0
MODERATE IMPROVEMENT	3	30.0
MILD IMPROVEMENT	2	20.0
UNCHANGED	1	10.0

Effect of Brahmi Ghrita as Shamana Sneha on Apasmara after follow up

IMPROVEMENT	1ST FOLLOW UP (1 MONTH)	2ND FOLLOW UP (2 MONTHS)	3RD FOLLOW UP (3 MONTHS)
MARKED	40%	30%	30%
MODERATE	20%	30%	30%
MILD	30%	20%	20%
UNCHANGED	10%	20%	20%

Effect of Phenobarbitone on various signs & symptoms of Apasmara

Signs & Symptoms	Mean Score		% of Relief	S.D	S.E	't' Value	'P' Value
	B.T	A.T					
Severity of attack	2.0	1.1	45.0	0.876	0.277	3.25	< 0.01
Frequency of attack	2.4	1.0	58.3	0.843	0.267	5.25	<0.001
Duration of attack	2.5	1.1	56.0	1.350	0.427	3.28	< 0.01
Salivation	1.3	0.4	69.2	0.568	0.180	5.01	<0.001
Pre ictal features	1.1	0.7	36.4	0.699	0.221	1.81	>0.05
Post ictal features	0.9	0.3	66.7	0.843	0.267	2.25	<0.05
Higher mental functions	1.0	0.9	10.0	0.316	0.100	1.00	>0.05

Overall effect of the Phenobarbitone

IMPROVEMENT	NUMBER OF PATIENTS	PERCENTAGE
MARKED IMPROVEMENT	2	20.0
MODERATE IMPROVEMENT	3	30.0
MILD IMPROVEMENT	2	20.0
UNCHANGED	3	30.0

Effect of Phenobarbitone on Apasmara after follow up

IMPROVEMENT	1ST FOLLOW UP (1 MONTH)	2ND FOLLOW UP (2 MONTHS)	3RD FOLLOW UP (3 MONTHS)
MARKED	20%	10%	10%
MODERATE	30%	20%	20%
MILD	10%	30%	20%
UNCHANGED	40%	40%	50%

DISCUSSION:

Brahmi Ghrita as Shamana Sneha provided significant relief in severity, frequency of attack, salivation, pre and post ictal features in comparison to control groups. Better overall improvement was also seen in Shamana group. The control drug provided significant relief in the signs & symptoms but Brahmi Ghrita provided better results.

After the follow up for 3 months at an interval of one month, it was seen that in Shamana, 20% of patients suffered the attack after the stoppage of treatment where as 50% of patients had the Vegas in the control group of follow up.

Hence it is concluded that Brahmi Ghrita as Shamana Sneha provided significant and better relief in most of the symptoms. Apasmara, being a disease fit for higher dose of Sneha was having better relief with Brahmi Ghrita as Shamana Sneha Moreover, as Shamana Sneha was administered in empty stomach in higher dose, when the patient had good appetite, the absorption and assimilation of Ghrita were faster thereby showing better results.

Clinical Study

The mangement of madhumeha (Diabetes Mellitus) by a Herbo-mineral preparation (Diabo-7)

*Dr. Anita sharma, **Dr. Vinod Kr. Gothecha, *** Dr. Sushila sharma

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Introduction

Diabetes Mellitus is one of the major killer of present times. The recent studies suggest that it is acquiring the status of an epidemic. It is suggested that the increase in the occurrence of this disease possibly is due to changing food habits and the increased stress in the society. Use of pesticides may have some contributing factor in this particular context.

The symptoms and signs of Diabetes Mellitus have great resemblance with Madhumeha a condition mentioned in Ayurvedic classic. Madhumeha is a disease deranged metabolism and ojas undergoes Kshaya i.e. which attains the course of krichra sadhyta. Due to disturbance of metabolism, no organ is spared from undergoing vikriti or dusti. Thus arteries may undergo atherosclerosis, heart may undergo hypertrophy. Involvement of nervous system may produces peripheral neuritis.The mutravaha srotas is also vitiated resulting in Diabetic nephropathy when accumulation of Amadosha and amavisha (? Keton bodies) occurs in blood and reaches the brain, especially the sensory centers of brain, Murcha(unconsciousness) and Sanysa (coma) may be precipitated.

Madhumeha in Ayurveda:

Renowned treaties of Ayurveda namely charka samhita and sushruta samhita(2000-1000 Bc) have described a disease entity called Prameha roga. The term Prameha is derived from "Miha Sechan" meaning watering. In reference to human beings it can be considered to be the act of urination. The prefix "pra" is suggestive of something in excess both in quality and quantity that's why the main cardinal features of prameha is prabhuta mutrata and Avilmutrata i.e. excessive urination with passage of dirty urine (turbidity), phosphates (sandramena) and many more things.

"Prameha" is of 20 types

1.	Kaphaj Prameha	10 types
2.	Pittaj Prameha	6 types
3.	Vataj Prameha	4 types

Madhumeha is a type of vataj Prameha, which is supposed to be krichchhrasadhya i.e. difficut to treat.In Ayurvedic texts various classifications of Madhumeha roga have been put forward by various scholars, which can be summarized below:

1. Sahaja (congenital)
2. a. Sthula pramehi (obese diabetic)
   b. Krisha pramehi (under weight diabetic)
3. a. Avrut vatajanya
   b. Shudha vatajanya
4. a. Svatantra (independent)
   b. Partantra (due to secondary causes)

Samprapti of Madhumeha

It is mentioned in Ayurvedic classics that Madhumeha is a chronic debilitating disease, which may run in families. All the prameha, if treated inadequately may be converted into Madhumeha. Various factors taking active part in the pathogenesis of Madhumeha are:

1. Dosh: Madhumeha is a tridoshaj " Vata pradhan vyadhi.Vata prakopa can be direct or indirect i.e.Avaranjanya.

2. Dushya: Madhumeha is a disease which spares no organ of body. All the Dhatus (Dushya) may be involved by this dreaded disease as is clear by the following quotation :

"bhbXd< medae ma<s zrIrj¬ed> zu³< zaei[t< vsa m¾a lsIka rsíaEjs> s<Oyat! #it Ë:y ivze;> .

3. Srotas: Almost all the Srotas are involved in the pathogenesis of prameha and Madhumeha

roga. Mutravaha Srotas and Medoveha Srotas are predominantly involved. The type of vikriti produced is mainly "Atipravriti (excessive flow) and Vimarggaman.

4. Agni: Madhumeha roga is the result of Dhatvagni mandyata. As per modern physiology Diabetes Mellitus (Madhumeha) is a metabolic disorder. Improper functioning of dhatvagni leads to various metabolic disorders in our body, Madhumeha is one of them.

5. Ama Dosha: Amadosha is a toxic substance which is produced by hypofunctioning of jatharagni. It is postulated that Ama Dosha produced at the level of G.I.T. may vitiate Mansa, Meda and Kleda Dhatu which ultimately is responsible for the pathogenesis of Madhumeha roga.

Pathogenesis of Prameha Roga and Madhumeha roga :

It is worth mentioning following quotation:

"Çya[ame;a< indanaid ivze;a[< siÚpate ——— ——————————— ——— àk«it ivk«it ÉUtTvat." (c.

It means that Shlesma Dusti plays a key role in production of prameha roga and Madhumeha roga. Meda Dhatu is also not spared. Vitiated Meda dhatu and Shleshma when reach Mansa dhatu it is also vitiated, which inturn involves Kleda dhatu of body. This development results in production of excessive and turbid urine, which is one of the cardinal features of Madhumeha roga. If this disturbed state of physiology persists for a long time and proper treatment is not advocated to patient, it may result in precipitation of other complications of urinary system (Mutra vaha Srotas) for e.g. Nephritis , Nephrotic syndrome and Kidney failure etc. In prameha roga there is significant disturbance in the metabolism of sugar, electrolytes, minerals and water etc. This is manifested in the form of presence of sugar in urine as well as in blood, excessive excretion of water in the form of urine and passage of several other electrolytes and mineral in the urine.

The concept that diabetes is supported by the fact that the basic cause of Madhumeha roga is a metabolic disorder is supported by the fact that the basic cause of Madhumeha roga is Dhatvagni mandya as is clear by the description available in Ayurvedic classics.

Diabetes Mellitus:

The term "Diabetes"is derived from a greek word "Diabainein"(Dia= through, bainein=to go) which means to run through a free passage (of urine). Diabetes Mellitus is a chronic disorder of carbohydrate, fat and protein metabolism. A defective or deficient insulin secretory response, which translates into impaired carbohydrate (glucose) use, is a characterstic feature of Diabetes Mellitus, as is the resulting hyperglycemia.

Etiological factors: Various etiological factors are responsible for Diabetes Mellitus such as

1. Genetic factors: Many studies done on monozygotic twins have proved that genetic factors are important in the development of "Non Insulin dependent Diabetes Mellitus "(NIDDM), but there is little information about what is inherited.

2. Life style.: The habbit of overeating, especially when combined with obesity and underactivity may produce the disease NIDDM.

3. Age: NIDDM is principally a disease of the middle aged and elderly, thus aging is an important risk factor for NIDDM.

4. Pregnancy: Repeated pregnancy increases the likelihood of developing Diabetes, particularly in obese women.

Pathology

NIDDM is due to the deficiency of insulin secreted by the beta cells of islets of langerhans of pancreas.This are because of some pathological changes in pancreas. The most consistent of these changes is probably deposition of amyloid, which is accompanied by atrophy of the normal islet tissues. In more advanced lesion, the islets are more or less converted into amyloid and the reduction in the number of insulin secreting cells is more pronounced than that of glucagon secreting cells. Increased hepatic production of glucose and resistance to the action of insulin may be developed. Insulin resistance is due to an abnormal insulin molecule, an excessive amount of circulating antagonists and target tissue defects.

The number of insulin receptor and post receptor defect also affects the action of insulin. The

pancreatic islets fail to fight with this situation because hepatic production of glucose increases but peripheral utilization of glucose decreases. When the concentration of glucose in the plasma exceeds the renal threshold (that is the capacity of renal tubules to reabsorb glucose from glomerular filtrate) glycosuria and other symptoms of Diabetes are then correspondingly slight.

To understand the etiopathogenesis of Diabetes Mellitus, we must look for the functions of insulin.

Functions of insulin-

Insulin promotes the transfer of glucose, amino acids and electrolytes across cell membranes.The cell membrane have got a specific transport system. This transport system helps in the transfer of glucose across the cell membranes into the interior.

Insulin helps this transport system. Insulin helps glucose uptake in muscle and adipose tissues due to its influence on the specific transport system, cell permeability and phosphorylation process. Insulin activates the intracellular enzymes. It antagonizes the phosphorylase activation in response to glucagons and epinephrine and increases the muscle and hepatic glycogen synthetase activity.

Classification of Diabetes Mellitus

Diabetes Mellitus has been broadly classified in following two groups:

1. Insulin dependent Diabetes Mellitus (IDDM) or Type 1: This form of Diabetes Mellitus

Results from a severe, absolute lack of insulin caused by a reduction in the beta-cells mass. Patients depends on insulin for survival, hence the term "Insulin dependent Diabetes Mellitus"

2. Non Insulin dependent Diabetes Mellitus (NIDDM) or Type 2: This is heterogeneous group of disorders characterized by hyperglycemia, appreciable insulin secretary capacity, although usually subnormal and sluggish, and varying degrees of insulin resistance.

Out of these two, IDDM can be treated only with the help of insulin. Since IDDM can be due to congenital disorders, in such cases it is uncurable because patient has to take regular dose of insulin throughout his life. In Ayurveda this type of Diabetes Mellitus is comparable with Beejdoshjanit madhumeha or Sahaj prameha. Efforts have been made by various scholars to develop some dependable remedies for NIDDM patients since Beejdoshjanit madhumeha or Sahaj prameha is considerd to be a "Asadhya" in Ayurveda as is clear by the following quotation:

"jat> àmehI mxumeihnae va n saXy %´> s ih bIj dae;at!, ye caip keict k...lja ivkara ÉviNt ta<í àvdNTysaXyn!." (c.ic.A.6/57)

Management of Madhumeha by a proposed herbo-mineral compound drug "Diabo-7:

Various Ayurvic scholars have been trying to develop certain dependable treatment for NIDDM patients. Various researches have been carried out in this regard with encouraging results. It is postulated that various herbo-mineral preparation having potent therapeutic effect against Madhumeha , can be processed together in a fixed proportion to develop a specific herbo-mineral compound preparation which may be named as "Diabo-7",which may show potent therapeutic effect against Madhumeha roga . This preparation named "Diabo-7" is derived on the basis of various researches carried out by various scholars. Various component of "Diabo-7" and their probable mode of action are summarized below:

1. Drugs having Beta –cells stimulator effect:

These drugs increase insulin secretion by stimulating Beta –cells of pancreas

Reference: Journal of Diabetic Association vol.35 no.1, 1995 page -1

Latin name	Ayurvedic name
Eugenia jambolana	Jambu
Pterocarpus marsupium	Vijayasara
Ficus glomerata	Udumber
Gymnema sylvestre	Meshashringe
Momordica charantia	Karvelleka

*Vijayasara is also effective in regeneration of Beta –cells of pancreas.

The flavonoid epicatchin, extracted from the

bark of this plant has been shown to prevent alloxan induced beta cell damage in experimental rats.

Reference: Chakravarty Bk et-al 1978 page no. 37 Nagarjun, October 1983 *www.wikidiabetes.blogspot.com*

**Meshashringe- It also improves the ability of insulin to lower blood sugar in both Type -1and Type -2 Diabetes .It decreases crawing for sweet.

Reference: www.ayurvedic cure.com

*** Jambu- It diminishes the level of sugar in the urine and allays the unquenchable thirst typical in diabetes.

Reference: www.scieco.br.com

2. Drugs promoting increased peripheral glucose utilization:

Solanum xanthocarpum Kantakari

Kantakari has direct effect on the tissues, because it increases peripheral glucose utilization.

Reference: Journal of Diabetic Association .vol.32 no.2, April 1998 page no.33.

3. Drugs helping in decreasing degradation of insulin

Yashad Bhasma Zinc ash

a. Zinc decreases degradation of insulin so that insulin can act for longer time.

Reference: journal of Diabetic Asso.vol.36 no.4 1996, page no-65

b. Zinc deficiency induces the rate of degradation of insulin and might interfere with insulin synthesis, storage and release.

Reference: journal of Diabetic Asso. Vol.23 April 1983 page no 37

4. Drugs helping in increasing ketabolism of glucose

Coccinia indica Bimbi

It has an enzyme "Glucokenin " which has sugar reducing properties . The enzyme has well marked amylolytic properties and rapidly hydrolysed starch.

Reference: www .Natural news .com
www.acrobat planet .com

Proposed compostion of "Diabo-7"

A 1000 mg capsule contains following drugs

Contents	Useful Parts	percentage
Jambu (Eugenia jambolana)	seed	310 mg
Kantakari (Solanum xanthocarpum)	whole plant	310 mg
Meshashringe (Gymnema sylvestre)	leaf	310 mg
Yashad Bhasam (yashad)	Ash	70 mg

Bhavana

Three Bhavana of Vijaysara (pterocarpus marsupium)	decoction of stem wood.
Three Bhavana of Udambra(Ficus glomerata)	decoction of stem wood
Three Bhavana of Karvellaka (Momordica charantia)	whole fruit juice
Three Bhavana of Bimbi (Coccinia indica)	leaf juice

All the drugs jambu, Kantakari, Meshashringe, are taken in the prescribed dosage and crushed into fine powder and mixed with yashad bhasma then it given the Bhavans of the above mentioned herbs as per the following rule of Bhaisajya kalpana.

"Ôven yatta sMyk cU[R sveR Plut< Évet." (za<rgxr s<ihta 6\6)

Finally the powder is to be dried in shed and the capsule of 1000 mg is to be prepared**.**

Recommended dosage

Two capsules twice or thrice a day before meal with normal water.

Conclusion

It is expected that the drug used as ingredients of "Diabo-7"may prove to be a boon in patients of Madhumeha roga (Diabetes mellitus). The basis of this hypothesis is the researches carried out on various ingredients of "Dibo-7" by different scholars.

Clinical Study

The Comparative Study between Kasisadi Tail Abhyang and Barrons Band Ligation in the Management of Abhyantar Arsh (Internal Haemorrhoids)

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INTRODUCTION

In early phase 'Arsh'(Hemorrhoid) can definitely treated with medicine and ultimately another interventional modalities is to be avoided. But it could not certainly stated that all types of hemorrhoids' were treated by internal medicine only. Those patients not responding favorably to this initial line of treatment another local and parasurgical treatment deserve its importance.

The Claims made in Ayurvedic texts "Kasisadi Tail" mentioned at "Bhaishajya Ratanavali" in 'Arshoudhikar' is also one of the efficient remedy regarding the management of Arsh.

At the same time various efficient and time accepted parasurgical modalities also practiced in the modern surgery. One of them is "Barrons Band Ligation".

Both the ruling medicinal branches having their own successful line of treatment. But comparative study between these established modality had not been done yet..

Therefore to carry out a scientific study and reacess ancient mode of treatment in the scientific era.

AIM & OBJECTIVE

To study the Comparison between Kasisadi Tail Abhyang and Barrons Band Ligation in the Management of Abhyantar Arsh (Internal Hemorrhoids)

MATERIALS AND METHODS

➢ Plan of study:

This is prospective, randomized, controlled clinical trial.

Group A:

30 patients of well diagnosed ll degree hemorrhoid were selected.

29 patients were given Kasisadi Tail Abhyanga about 3 to 4 ml quantity for 7 consecutive days.

1 patient was dropped out due to discontinuation of follow up

Group B:

30 patients of well diagnosed ll degree hemorrhoid were selected.

22 patients were given Barrons Band ligation was conducted as per standard method.

8 patients were dropped out due to irregular follow up.

Group A (Kasisadi Tail Abhyang)

➢ **Medicament:**

a) Kasisadi Tail about 5cc.

b) Xylocain jelly 2%

➢ **Instruments**

1. Proctoscope-Large, medium, small size.
2. Guaze pieces
3. Sinus forcep.

Group B (Barron Band Ligation)

➢ **Medicament:**

a) Xylocain jelly 2%

➢ **Instruments**

4. Barrons Band Ligation.

5. Sklar Rubber Band.
6. Proctoscope-Large, medium, small size.

➢ **Inclusion criteria:**

· Patient having non complicated and well diagnosed cases of 2 degree internal hemorrhoids non responding to routine conservative managements.

· All patients in the age group of 15-70 year with either sex will be included in study.

➢ **Exclusion Criteria:**

· Patient having complicated internal hemorrhoids.

· Patient having Neoplasm of anorectum.

· Patient having severe anemia with poor general condition.

· Patient having associated definite obstruction or life threatening systemic complication.

➢ **Method**

Kasisadi Tail Abhyang

· The patient was kept comfortably in the lithotomical position. Well lubricated appropriate size proctoscope was completely in the "Kasisadi Tail" is kept in the canal after identification of the hemorrhoidal mass with help of sinus forcep.

· After that the proctoscope is removed and a sterile pad given.

Barron Band Ligation

· The patient was kept comfortably in the lithotomical position. Under all aseptic precaution. A Well lubricated appropriate size proctoscope was introduced slowly and steadily into the anal canal.

· Barrons Band Ligation was introduced through the proctoscope which was already loaded by two sklar rubber band having a diameter of 1/10 inch.

· By closing the handles of the ligator the rubber ring are close over the base of piles.

· After that the proctoscope is removed and a sterile pad given.

OBSERVATION

Table showing effect of treatment on signs and symptoms of Group A:-

Sr.no	Sign & Symptoms	n	Mean	S.D	S.E	t	P
1	Degree of Hemorrhoid	29	0.79	0.41	0.076	10.30	P <0.05
2	P.R.Bleed	29	1.55	0.93	0.173	8.959	P <0.05

Table showing effect of treatment on signs and symptoms Of Group B:-

Sr.no	Sign & Symptoms	n	Mean	S.D	S.E	t	P
1	Degree of hemorrhoid	22	1.41	0.72	0.154	9.15	P <0.05
2	P.R.Bleed	22	1.18	0.65	0.139	8.489	P <0.05

Applying unpaired t- test to compare the results achieved by both Treatments are

a) Degree Of Hemorrhoid:

Group A		Group B		SE	T	P
Mean	S.D	Mean	S.D			
0.79	0.41	1.41	0.0.72	0.163	-3.80	p<0.05

't'- calculated is -3.80 and t- table is 2.00, i.e. ttab< tcal, Above table suggest that the "Degree of Hemorrhoid" was significantly reduced in Group B than Group A.

b) Per Rectal Bleeding:

Group A		Group B		SE	T	P
Mean	S.D	Mean	S.D			
155	0.93	1.18	0.65	0.236	1.568	P>0.05

Here tcal is 1.568 and ttab is 2, i.e. ttab>tcal . hence t-test is insignificant.

RESULT

Total Effect of therapy:-

Group	Completely Cured	Improve	Not cured	Total
Group A	22	4	3	29
Group B	19	0	3	22
Total	41	4	6	51

DISCUSSION

Kasisadi Tail was an effective Ayurvedic drug regimen as far as the management of Abhyantar Arsh was considered.

As –Kasis-i.e. ferros sulphate – which reduces bleeding and stabilizes vascular endothelium by its styptic effect. It also having Vrana Ropan and Shodan. So it facilitates and promotes quick healing at the eroded portion of hemorrhoidal vessels.

At the same time remaining Tail / Oil ingredients like Danti , Karveer, Chitrak and Arka all of those having Tikshna, Ushna proparties along with katu rasa causes Lekhan, Ksharan and Kshpan. i.e. scrubbing of the tissue decreases size of hemorrhoids.

Barron Band Ligation was also a timely accepted and effective modality . After application of band over the base of the hemorrhoidal tissue. It causes pressure effect over the base and ischemic changes in the distal part of aemorrhoidal tissue and complete necrosis of concerned Hemorrhoidal mass.

SUMMARY

1. Randomly selected and well diagnosed internal hemorrhoid total 51 patient selected those not responding to conservative treatment selected for study.
2. Kasisadi Tail preparation was carried out as per standard Ayurvedic Siddha tail.
3. Standard rubber band ligation instrument and rubber band was utilized in the study.
4. Application of Kasisadi Tail in total 29 patients and rubber band ligation in total 22 patients was carried out as per methodology described earlier was conducted in total 51 patients.
5. The obtained data about assessment criteria was statically analyzed separately, which was manifested as-

   –Barron Band Ligation was more effective than Kasisadi Tail Abhyanga for 'Degree of Hemorrhoid'

   _Kasisadi Tail Abhyanga was effective than Barron Band Ligation for 'P.R. Bleeding'.

CONCLUSION

By statistical analysis, it was concluded that **"Barron Band Ligation was more effective than Kasisadi Tail Abhyanga in management of Abhyantar Arsha (ll Degree internal Haemorrhoid)"**

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