

Research article

“Role of Punarnavadi Vati in the management of Sthaulya with special reference to dyslipidemia in Hypertension”

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Article Received on: 24/12/2025 Accepted on: 30/02/2026 Published on: 25/04/2026

ABSTRACT:

Sthaulya (Obesity) is the blessing of modern age of machine and materialism, which is most disfavored by modern society. It occurs as a result of sedentary life style which increase intake of daily diet. In Ayurveda on the basis of Dyslipidemia clinical picture it can be corelate with Sthaulya. A clinical trial was conducted on 30 diagnosed patients of Sthaulya for a duration of one month, and very good improvement was observed in lipid profile parameters and all symptoms of Sthaulya. Atikshudha, Ayasenshwasa, Atitrushna and Atinidra these are the features of Sthaulya. In *Punarnavadi Vati*, the Guggulu having property of Lekhana by action on medovaha strotas as well as other drug having properties like deepan, aampachan, strotorodh nashan, lekhana and medohara & pacifies Sthaulya. So that pathogenesis improves and symptoms of Sthaulya.

KEY WORDS: Sthaulya, Dyslipidemia, Punarnavadi Vati

INTRODUCTION:

Sthaulya (obesity) provides platform for many hazards like Hypertension, DM, PCOS, Hypothyroidism. It is causing high rate of mortality & morbidity. That's why this disease is gaining more & more attention at the global level and so many countries are making an effort to find out perfect remedy for this burning problem. The burden of cardiovascular disease (CVD) is increasing worldwide. The increase in the burden is a major concern in developing countries like India.

A person having pendulous appearance of *Sphika* (Hip), *Udara* (Abdomen) and *Stana* (Chest) due to excess deposition of *Meda* along with *Mamsa Dhatu* and also having unequal or abnormal distribution of *Meda* with reduced zeal towards life is called "*Atisthula*".^[1]

According to "Article on Lipitension: Interplay between Dyslipidemia and Hypertension" it is well-established that hypertension and dyslipidemia are the two major contributing risk factors for CVD. Various epidemiological studies have shown the prevalence of the co-existence of dyslipidemia with hypertension in the range of 15 to 31%.^[2]

Dyslipidemia is defined as "Abnormalities in plasma lipoproteins, derangement in lipid metabolism and disorders of lipoprotein metabolism are collectively called as Dyslipidemia." Person having total cholesterol level (TC) ≥ 200 mg/dl or low-density lipoprotein (LDL) ≥ 130 mg/dl or Triglycerides (TG) ≥ 150 mg/dl are considered as dyslipidemia. As per NCEP guidelines HDL cholesterol for men < 40 and for women < 50 .^[3]

Current antihyperlipidemic treatments mainly suppress symptoms and are often associated with adverse effects, high cost, and limited long-term results. There is a

growing need for safer, affordable, and effective options that address the root cause of dyslipidemia. Ayurveda offers holistic formulations that can manage lipid disorders with better tolerability and additional health benefits. Therefore, evaluating the efficacy and safety of Ayurvedic interventions can provide valuable complementary or alternative treatment approaches. Hence, this topic has been selected for clinical research.

MATERIALS AND METHODS:

Objectives:

Primary Objective:

To evaluate the efficacy of *Punarnavadi Vati* in Sthaulya with special reference to Dyslipidemia in Hypertension

Secondary Objectives:

1. To study the etiopathology of *Sthaulya* and Dyslipidemia
2. To study the of ingredients of *Punarnavadi vati*
3. To evaluate any adverse effect of *Punarnavadi Vati* if any.
4. To study the efficacy of *Punarnavadi vati* in blood pressure.

Clinical Material:

A clinical trial was conducted on 30 patients with symptoms of Sthaulya.

Study Design:

30 patients were selected from concern ayurvedic institute, who fulfils the inclusion criteria. Written informed consent obtained. Then *Punarnavadi Vati* 500 mg four tablets twice a day given for 30 days. Follow up taken on 15th and 30th day.

Drug Material – Punarnvadi Vati

For the management of Sthaulya, Punarnavadi vati was selected from the classical reference

of Bhaishajyaratnavali 40th Adhyaya Udara rogadohikar.^[4]

Ingredients of Punarnavadi Vati

- | | |
|--------------|----------------------------|
| 1. Punarnava | 4. Guduchi. |
| 2. Deodaru | 5. Guggulu |
| 3. Haritaki | 6. Bhavana dravya: Gomutra |

Punarnava, Devdaru, Haritaki, and Guduchi were taken in equal proportions and mixed thoroughly, while Guggulu was added in four times the quantity of each ingredient. The mixture was blended uniformly, and processed Gomutra was added as Bhavana dravya and triturated until a fine consistency was achieved. Afterward, a suitable binding agent was incorporated, and the material was dried. The dried mass was then granulated, passed through mesh numbers 8 and 16 to obtain uniform granules, and dried again for 24 hours. Finally, the granules were compressed into tablets using a standard punch, with each Vati weighing 500 mg.^[5]

This dosage form was preferred for clinical use due to its accuracy in dosing and better patient acceptability.

INCLUSION CRITERIA:

1. Patients from age group of 18 to 60 years irrespective

of gender, religion, socio-economic status, marital status.

2. Patients of Sthaulya with hypertension as per signs and symptoms BMI between 25 to 34. Including overweight Obese Class I and as per signs and symptoms mentioned in Ayurvedic Samhitas.^[6]

3. Patient with known case of HTN; Systolic BP should be <160; Diastolic BP should be <100

EXCLUSION CRITERIA:

- 1) Pregnant and lactating women.
- 2) Acute life-threatening conditions like C.V.A., CA, Acute M.I. DM I and Insulin Dependent.
- 3) Known Cases of Hypothyroidism and hyperthyroidism.
- 4) Patient with Systolic BP >160 diastolic BP >99.

ADMINISTRATION OF DRUG:

Drug: Punarnvadi Vati

Form of drug: Vati

Dose: 500 mg four tablets Twice a day

Anupana: Koshna Jala

Sevankala: Bhojanpurva

Duration: 30 Days

Follow Up: On 15th and 30th day

SUBJECTIVE VARIABLES

Table No. 01: Subjective Variables

Ayasen Shwas	Score	Features
	0	Not Troubled by Breathlessness
	1	Troubled by shortness of breath on walk of 150mtr
	2	Troubled for breath on walking upto 100 mtr
	3	Dyspnea at rest
Atitrushna	Score	Features
	0	Up to 2 lit/24 hrs (8<veg)
	1	3 lit/24 hrs (9-12veg)
	2	4 lit/24 hrs (13-15veg)
	3	5 lit/ 24 hrs (>16tveg)
Atikshudha	Score	Features
	0	1-2 times a day
	1	3 times a day
	2	4 times a day
	3	>4 times a day
Atinidra	Score	Features
	0	6-7 hrs/ day
	1	8-10 hrs/ day
	2	10-12 hrs/ day
	3	>12 hrs/ day

OBJECTIVE VARIABLES:

- | | | |
|--------------------|------------------|----------------------------------------------|
| 1. Body weight | 3. Lipid Profile | 5. Abdominal girth at the level of umbilicus |
| 2. Body-Mass Index | 4. BP monitoring | |

OBSERVATIONS AND RESULTS:

Table No. 2: Results statistics Subjective Criteria

Atikshudha	Mean BT	Mean AT	Paired Mean Differences (Z Value)	Sig. (1-tailed)	% Relief
	1.90	0.27	-4.928	<0.001	85.79
Ayasen Shawas	Mean BT	Mean AT	Paired Mean Differences (Z Value)	Sig. (1-tailed)	% Relief
	1.70	0.23	-4.774	<0.001	86.47
Atitrushna	Mean BT	Mean AT	Paired Mean Differences (Z Value)	Sig. (1-tailed)	% Relief
	1.67	0.23	-4.939	<0.001	86.23
Atinidra	Mean BT	Mean AT	Paired Mean Differences (Z Value)	Sig. (1-tailed)	% Relief
	1.57	0.23	-4.875	<0.001	85.35

Table No. 3: Results statistics Objective Criteria - Systolic Blood Pressure

Mean BT	Mean AT	Paired Differences			t	df	Sig. (1-tailed)	% Relief
		Mean	Std. Deviation	S.E. Mean				
139.33	130.13	9.2000	3.9163	0.7150	12.87	29	<.001	6.60

Table No. 4: Results statistics Objective Criteria - Diastolic Blood Pressure

Mean BT	Mean AT	Paired Differences			t	df	Sig. (1-tailed)	% Relief
		Mean	Std. Deviation	S.E. Mean				
91.33	84.00	7.3333	3.9769	0.7261	10.10	29	<0.001	8.03

Table No. 5: Results statistics Objective Criteria - Weight of Patient

Paired Differences			t	df	Sig. (1-tailed)
Mean	Std. Deviation	Std. Error Mean			
1.897	0.535	0.098	19.43	29	0.0005

Table No. 6: Results statistics Objective Criteria - BMI of Patient

Paired Differences			t	df	Sig. (1-tailed)
Mean	Std. Deviation	Std. Error Mean			
0.88966	0.37829	0.07025	12.665	28	0.000

Table No. 7: Results statistics Objective Criteria - Total Cholesterol

Mean BT	Mean AT	Paired Differences			t	df	Sig. (1-tailed)	% Relief
		Mean	Std. Deviation	S.E. Mean				
256.33	216.97	39.36	15.9449	2.9111	15.52	29	0.001	15.35

Table No. 8: Results statistics Objective Criteria - Triglycerides

Mean BT	Mean AT	Paired Differences			t	df	Sig. (1-tailed)	% Relief
		Mean	Std. Deviation	S.E. Mean				
254.67	200.53	54.133	14.2023	2.5929	20.87	29	0.004	21.26

Table No. 9: Results statistics Objective Criteria - LDL

Mean BT	Mean AT	Paired Differences			t	df	Sig. (1-tailed)	% Relief
		Mean	Std. Deviation	S.E. Mean				
164.93	147.17	17.76	22.24	4.061	4.375	29	<0.001	10.77

Table No. 10: Results statistics Objective Criteria - HDL

Mean BT	Mean AT	Paired Differences			t	df	Sig. (1-tailed)	% Relief
		Mean	Std. Deviation	S.E. Mean				
46.02	53.63	-7.613	7.9247	1.4473	-5.26	29	<0.001	16.54

Table No. 11: Results statistics Objective Criteria - Abdominal Girth

Mean BT	Mean AT	Paired Differences			t	df	Sig. (1-tailed)	% Relief
		Mean	Std. Deviation	S.E. Mean				
115.43	110.00	5.4333	2.1120	0.3856	14.090	29	<0.001	4.70

The efficacy *Punarnavadi Vati* was proved by applying Wilcoxon Signed Rank Test for subjective criteria and Paired t-Test for objective criteria which gives promising results.

Subjective symptoms such as Atikshudha, Atitrushna, Atinidra, and Ayasena Shwasa showed highly significant improvement, indicating restoration of functional balance and metabolic regulation. Anthropometric parameters—including body weight, BMI, abdominal girth, reflecting improvement in body composition and

decreased central as well as peripheral adiposity.

Biochemical evaluation showed marked enhancement in lipid metabolism, with a reduction in total cholesterol, triglycerides, and LDL levels, along with an increase in HDL. These findings suggest that *Punarnavadi Vati* effectively modulates dyslipidemia and contributes to reducing symptoms of *Sthaulya*.

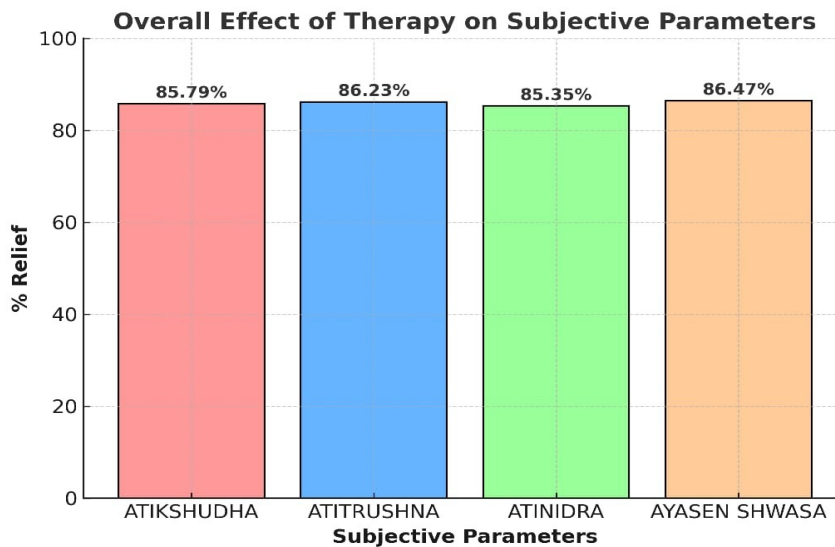
Symptomatic Relief According to Percentage:

Subjective Parameters:

Table No. 12: Overall effect of therapy on Subjective parameters

Parameter (Subjective)	Effect %
ATIKSHUDHA	85.79%
ATITRUSHNA	86.23%
ATINIDRA	85.35%
AYASEN SHWASA	86.47%
TOTAL	85.96%

Graph No. 01: Graph showing Percentage of Overall effect of therapy on Subjective parameters



According to the above table it is evident that total no of **Ayasen Shwasa** with the drug *Punarnavadi Vati* in the patients shows **85.79% in Atikshudha, 86.23% in management of *Sthaulya*.**

Atitrushna, 85.35% in Atinidra, and 86.47% in Overall Percentage Relief of Objective Parameter

Table No. 13: Percentage of Overall effect of therapy on objective parameters

Parameter	Percentage Relief
T. Cholesterol	15.35%
Triglycerides	21.26%
LDL	10.77%
HDL	16.54%
Systolic BP	26.60%
Diastolic BP	8.03%
Weight	3.30%
BMI	6.32%
Abdominal Girth	4.70%
Average	12.54%

The overall therapeutic response to Punarnavadi Vati showed a mean objective improvement of 10.08%. A reduction in systolic (6.60%) and diastolic (8.03%) blood pressure indicates its antihypertensive effect. Obesity-related parameters—body weight (3.30%), BMI (6.32%), abdominal girth (4.70%) demonstrated statistically significant reductions. These findings indicate a gradual yet consistent reduction in both central and peripheral adiposity.

Lipid profile assessment revealed marked improvement, with reductions in triglycerides (21.26%), total cholesterol (15.35%), and LDL (10.77%), along with a 16.54% increase in HDL. This reflects a favorable lipid-modulating effect and reduced cardiovascular risk in Sthaulya patients with dyslipidemia.

Table No. 13: Overall effect of treatment

Overall Effect (SUBJECTIVEPARAMETERS)	Frequency	Percentage
No Change	00	00
Mild Improvement	00	00
Moderate Improvement	07	24.17%
Marked Improvement	23	75.83%
Complete Cure	00	00

According to the above table, it is evident that 75.83% of patients achieved a marked improvement, 24.17% of patients achieved moderate improvement, while 0% of the patients experienced mild level of improvement with Punarnavadi Vati.

DISCUSSION:

After 30 days of treatment with Punarnavadi Vati, it is noticed that signs and symptoms of Sthaulya are minimized.

The reference of this kalpa is from Bhaishajyaratnavali, Udara Adhyaya 40/39

Punarnavadi Vati contains *Punarnava, Devadaru, Guduchi, Haritaki, Guggulu, and Gomutra* acts synergistically to alleviate *Sthaulya* through its *Tikta-Katu-Kashaya Rasa, Ushna Viryatmaka, Kaphamedohara, Lekhana, Deepana-Pachana, Amapachaka, Mutrala, and Srotoshodhaka* properties. These drugs collectively correct the vitiation of *Kapha and Meda*—the chief Doshas involved in *Sthaulya* also act on *aama*, increased *dhatwagni, jatharagni* and reduce symptoms of *Sthaulya*.

Table No. 14: Drug Analysis

Dravya	Rasa	Virya	Vipaka	Doshaghata	Guna
<i>Punarnava</i>	<i>Katu, Madhura, Tikta, Kashaya</i>	<i>Ushna</i>	<i>Katu</i>	<i>Tridoshaghata</i>	<i>Laghu, Ruksha, Sara</i>
<i>Deodaru</i>	<i>Tikta, katu, Kashaya</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kaph-Vatshamak</i>	<i>Laghu, Ruksha.</i>
<i>Haritaki</i>	<i>lavan varjya Panch-ras</i>	<i>Ushna</i>	<i>Madhur</i>	<i>Tridosh-har</i>	<i>Laghu, ruksha</i>
<i>Guduchi</i>	<i>Tikta, Kashaya</i>	<i>Ushna</i>	<i>Madhur</i>	<i>Tridoshashamak</i>	<i>Guru, Snigdha</i>
<i>Guggulu</i>	<i>Tikta, Katu, Kashaya</i>	<i>Ushna</i>	<i>Katu</i>	<i>Tridoshashamak</i>	<i>Laghu, Ruksha, Tikshna, Vishada, Sookshma, Sara, Sugandhi, Lekhaniya</i>
<i>Gomutra</i>	<i>Katu, Kshara</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kaph-Vatshamak</i>	<i>Teekshna, Ushna, Laghu Kushtahara, Lekhaniya.</i>

Mode of Action:

Punarnava and *Gomutra* act as *Mutrala* and *Shothahara*, helping reduce excess fluid retention and adipose accumulation.^[8] *Devadaru* and *Guduchi* support *Agni* *Deepana* and *metabolism* while aiding in *Ama Pachana*. *Haritaki* facilitates *Vatanulomana* and *Srotoshodhana*, assisting in proper elimination and channel clearance. *Guggulu*, with its strong *Lekhana* and *Medohara* properties, promotes effective scraping of excess *Meda* *Dhatu* and accelerates tissue metabolism.^[9]

Collectively, these ingredients exhibit *Tikta-Kashaya Rasa, Ruksha Guna, and Ushna Virya*, along with *Deepana, Pachana, Kapha-Medohara* and *antioxidant* actions. This synergistic effect enhances *Jatharagni*, normalizes *Dhatvagni*, digests *Ama*, and promotes *Meda Kshaya*, thereby restoring *Dhatu Samya* and effectively managing *Sthaulya*.

Punarnava is well documented for its diuretic action, helping reduce fluid retention and edema, which indirectly supports weight reduction. Devdaru exhibits strong antioxidant properties, protecting lipid-rich tissues such as the nervous system and preventing LDL oxidation, an important mechanism in dyslipidemia control. ^[10] Haritaki contributes anti-obesity benefits by providing fiber that reduces hunger and regulates appetite. Its active constituents—gallic acid and ellagic acid—are known to modulate cholesterol metabolism by inhibiting enzymes involved in absorption and synthesis. ^[11]

Guduchi demonstrates significant hypolipidemic activity comparable to rosuvastatin, with cordifolioside contributing to reduced serum cholesterol, triglycerides, and LDL levels, along with antioxidant support. ^[12] Guggulu is a well-established Medohara drug with strong lipid-lowering effects, reducing body weight, total cholesterol, triglycerides, LDL and VLDL, and improving HDL levels. ^[13] Gomutra contains bioactive compounds such as urea and urokinase, contributing to hypolipidemic, antibacterial, and metabolic-enhancing effects. ^[14]

Collectively, these ingredients provide synergistic diuretic, antioxidant, anti-obesity, and lipid-modulating actions, supporting effective management of Sthaulya associated with dyslipidemia.

CONCLUSION:

Hence Punarnavadi Vati Showed good and promising results in Sthaulya w.s.r. to Dyslipidemia in Hypertension.

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Cite this article as:

Shweta Shirsath, Sameer Shinde, Role of Punarnavadi Vati in the management of Sthaulya with special reference to Dyslipidemia in Hypertension, DJIM 2025; 10(1), p. 17-22.