



Research Article

CLINICAL TRIAL OF *GOMUTRA* (COW'S URINE) IN OBESITY MANAGEMENT

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ABSTRACT

The current research paper describes the importance of *Gomutra* (cow's urine) in obesity management. For this purpose 30 patients were selected randomly from M.M.M Government Ayurvedic College & Associated Group of hospitals, Udaipur. For diagnostic purpose objective parameters like total body weight of patient, BMI, Measurement of skin-fold thickness, Circumference of Chest, Abdomen, Hip, Mid thigh, biochemical analysis like lipid profile and subjective parameters like *Chalatva*, *Kshudra Swasa Daurbalya*, *Anga Gaurva*, *Alasya*, *Gatrasada*, *Alpa Vyavaya*, *Ati Kshudha*, *Ati Piapasa Nidradhikya*, *Swedadhikya*, *Daurgandhya*, *Snigdhangta*, *Sandhishool* were taken in to consideration. In pathogenesis of *Sthaulya*, *Kapha* (*Kledaka Kapha*), *Vata* (*Samana & Vyana Vayu*), *Meda* (fat /lipid) and *Medodhatvagni Mandyata* are main responsible factors according to our samhitas¹ My hypothesis for this evaluation was based on the facts that *Gomutra* has all those properties which can be helpful in *Samprapti vighatana* of obesity i.e., *Tikshna*, *Ushna*, *Laghu* and *Kaphavat shamak* etc. I also considered the biochemical analysis on *Gomutra* and its elemental properties. Keeping this in mind *Gomutra* was given to every patient according to their age and *Kosthagni* ranging from 3ml to 5ml with water and all changes were calculated by parameteric and non parameteric tests. In this study cow's urine proved very effective in obesity management reduced weight and B.M.I by 6.51% and 6.11% respectively. This research is very important in today's life because the problem of obesity is increasing day by day due to our sedentary life style and it is leading to very fatal diseases.

KEYWORDS: *Gomutra*, Cow's urine, *Sthaulya*, Obesity.

INTRODUCTION

Ati Sthula has been defined as a person, "who on account of the inordinate increase of fat and flesh, is disfigured with pendulous, buttocks, belly and breasts and whose increase bulk is not matched by a corresponding increase in energy"² Obesity is blessing of modern age of machines and materialism. It is physiological, psychological and social disorder, which is most disfavored by modern society for social as well as medical reasons. The present day society expects peak physical and mental performance from each of its member and obese person is unable to find out himself physical and mental fit for it. It occurs as a result of lack of physical activities with increased intake of daily diet results into the clinical entity, which can be called as obesity. Obesity is a medical condition in which excess body fat has accumulated to the extent that it may have a negative effect on health leading to reduced life expectancy and/or increased health problems. "*Sthaulya*" (obesity) is such a disease, which provides the platform for so many hazards like H.T., C.H.D., D.M., O.A. infertility, impotency as well as psychological disorders like stress, anxiety, depression etc. Thus, the mortality and morbidity are more in obese person compared to others. There are so many medications and methods in market which claim to reduce obesity, but today's study is to bring into light an ancient and holistic *Gomutra's* effect on obesity. In the *Chikitsa of Sthaulya Acharya Sushruta* has indicated the use of *Shilajatu*, *Guggulu*, *Gomutra*, *Triphala*, *Loharaja*, *Rasanjana*, *Madhu*, *Yava*, *Kordusha*, *Shyamaka*, *Uddalaka*, use of *Virukshana* and *Chedaniya Dravyas*, *Vyayama* and *Lekhana Basti*.³

In Ayurveda, there are many medicines made from cow urine, milk, dung, ghee, curds. This purifies, and clears all blocks in bodily channels (*Shroto- shodhaka*). It enhances the therapeutic actions of medicines taken along with it. It has been found to be very effective in worm infestations, skin diseases, urticaria and allergic rashes, pain abdomen due to indigestion, constipation, and ascitis, etc.⁴ Cow's urine is widely used in the Ayurvedic pharmaceuticals for enhancing the properties of many drugs, by giving *Bhavana* (repeated triturating). In *Shodhana* (purification) of metals used in therapeutics, cow urine was extensively used. Charaka, Sushruta and all other ancient physicians have given prime importance to cow's urine.

Aims and Objectives

- To reveal the potential in *Gomutra* (cow's urine)
- To prove the efficacy of cow's urine in the management of obesity.

Material and Method

Following materials and methods were adopted for conducting present research work

(A) Plan of the study: The study was conducted in following steps:

- (1) Clinical and therapeutically study of *Gomutra* (Drug study).
- (2) Discussion
- (3) Summary and Conclusion

(B) Selection of the cases

Obesity is common problem seen in all age group. 30 patients of obesity were selected randomly.

Drug Review

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Cow's urine is widely used in the Ayurvedic pharmaceuticals for enhancing the properties of many drugs, by giving *Bhavana* (repeated trituration). In *Shodhana* (purification) of metals, cow urine was extensively used. Charaka, Sushruta and all other ancient physicians have given prime importance to cow's urine. Milk or urine of cow of particular has been mentioned for a specific therapeutic use. Even though urine of many animals is used in preparing medicines, cow's urine has been found to be the best among all.

Gomutra

Rasa: *Katu, Tikta, Kashaya, Lavana (Anurasa)*

Guna: *Tikshna, Ushna, Laghu*

Virya: *Ushna*

Vipaka: *Katu*

Doshghanta: *Kaphavata Shamaka*

Action and Uses: *Deepana, Lekhana, Pachana, Anulomana, Malshodhak Amapachana*, it is also used in *Virechana* and *Basti*.

Table 1: Chemical Composition of Cows Urine⁵

Water - 95%	Salts - 2.5%
Urea - 2.5%	Hormones, Minerals, Enzymes -0%

Table 2: Chemical Constituents of healthy cow urine⁶

Urine volume 17-45ml/kg/day	Creatinine 15-20mg/kg/day
Specific gravity 1.025-1.045	Magnesium 3.7mg/kg/day
pH 7.4-8.4	Potassium 0.08-0.15 mmol/kg/day
Urea nitrogen 23-28ml/kg/day	Sodium 0.2-1.1 mol/kg/day
Ammonia nitrogen 1-1.7ml/kg/day	Sulphate 3-5mg/kg/day
Total nitrogen 40.45ml/kg/day	Uric acid 1-4mg/kg/day
Allantoin 20-60ml/kg/day	Uroporphyrin 1.5-7.0mg/dl
Calcium 0.1-1.4ml/kg/day	Leucocyte <15micro It
Chloride 0.1-1.1mmol/kg/day	Glucose & Protein Nil
Coproporphyrin 5-14micogram/dl	Hemoglobin Nil

In healthy cows' urine protein, glucose and hemoglobin are not found⁷

1. Urea - Product of Protein metabolism. Strong antimicrobial Agent.

2. Uric acid - Antimicrobial Activity helps to control infections.
3. Nitrogen - Diuretic, Stimulates Kidney
4. Sulphur - Purifies blood, increases intestinal peristalsis
5. Copper - Controls fat deposition
6. Iron - Production of RBC in blood.
7. Sodium - Purifies blood, checks hyperacidity.
8. Potassium - Appetizer, eliminates muscles Fatigue
9. Other Salts - Antibacterial
10. Carbolic Acid - Antibacterial, prevents Gas Gangrenes
11. Ammonia - Helps to maintain Integrity of body tissue & blood.
12. Sugar-Lactose - Prevents thirst & Giddiness
13. Vitamin A,B,C,D,E - Prevent excessive thirst, infuse vigour and vitality
14. Creatinine - Antibacterial
15. Aurum hydroxide- Antibacterial, improves immunity, acts as antidote

Thus the biochemical analysis of cow's urine also indicates that by virtue of nitrogen and copper it helps to excreted out fat in the form of *Kleda* through urine by increasing kidney functions and diuretic action. Copper don't allow the fat to deposit in the body and organs.

Clinical Trial**Materials and method**

30 patients of obesity were selected randomly from M.M.M.Government Ayurvedic College and associated group of hospitals. The patients were given pure cow's urine in dose ranging from 3ml to 5ml depending upon the condition of the patients for 3 months. They asked to visit hospital every month for follow up.

Inclusion criteria: Patients fulfilling the following general and diagnostic criteria were selected for the present study.

1. Patients having age more than 15 years and below 60 years.
2. BMI >25

Exclusion criteria

1. Patients having serious cardiac disorders like MI, Cardiac Failure etc.
2. Patients having major illness, IDDM, DM which is poorly controlled or newly diagnosed or is taking new therapy or recently adjusted therapy.
3. Patients having a history of untreated thyroid disorders.
4. Hyperlipidemia due to drugs e.g. glucocorticoids.
5. Pregnant females and lactating mothers and renal insufficiency

Investigation

1. Weight B.M.I., Body circumference of abdomen, hip, mid thigh, skin-fold thickness, biceps, triceps, subscapular and abdomen skin-fold thickness.
2. Lipid profile.

Assessment of therapy (Gradation of symptoms)

Total Assessment of the Therapy was done on the basis of relief in the signs and symptoms as well as objective criteria weight, BMI, Skin fold Thickness, Body

Circumference and Biochemical Parameters. Following scoring pattern was adopted for the assessment of sign and symptoms.

- If symptom is not present in patient-0
- If symptom presentation in patient is mild - 1
- If symptom presentation in patient is moderate- 2
- If symptom presentation in patient is severe - 3
- If symptom presentation in patient is very severe - 4

Obesity classification based on BMI as follows-

- Under weight - <18.5 kg/m²
- Normal weight - 18.5 - 24.9 kg/m²
- Over weight - 25 - 29.9 kg/m²
- Obesity (Class-I) - 30 - 34.9 kg/m²
- Obesity (Class-II) - 35 - 39.9 kg/m²
- Morbid Obesity (Class-III) - > 40 kg/m²

Main Observations During Clinical Trial

The main points of trial work have been described here in the form of tables and others will be described in the summary and conclusion.

Table 3: Distribution of patients according to their age

Age	No of patients	Percentage
15-30	4	13.3%
30-50	20	66.67%
50-60	6	20%

Table 4: Distribution of patients according to their sex

Sex	No of Patients	Percentage
Males	6	20%
Females	24	80%

Table 5: Distribution of patients according to their marital status

Married	17	55%
Unmarried	15	45%

Table 6: Distribution of patients according to their life style

Sedentary	25	83%
Working	5	17%

Table 7: Distribution of patients according to their religion

Hindu	21	70%
Muslims	6	20%
Sikh	3	10%
ISAI	-	0%

Table 8: Distribution of patients according to their Agni status

Tikshanagni	15	50%
Vishmagni	9	30%
Mandagni	3	10%
Samagni	3	10%

Table 9: Distribution of patients according to their B.M.I

BMI	No of Patients	Percentage
25-30 (Overweight)	18	60
30-40 (Obese)	9	30
>40 (Very Obese)	3	10

Table 10: Distribution of patients according to their weight

Weight in Kg	No of Patients	Percentage
61-70 kg	9	30%
71-80 kg	6	20%
81 & above	15	50%

RESULT

Results of cow's urine therapy have been calculated statistically and represented below in simpler tabular form.

Table 11: Cow's urine effect on Objective Criteria

Objective Criteria	Mean Scores		MD	% Relief	SD ±	SE ±	t	P
	BT	AT						
Weight (in Kg.)	81.8	76.5	5.3	6.51	1.5	0.61	8.67	<0.001
B.M.I.(Kg./m ²)	38.1	35.8	2.3	6.11	0.81	0.33	7.00	<0.001
Circumference (in Cm.)								
Chest	106.1	102.3	3.8	3.61	0.75	0.30	12.47	<0.001
Abdomen	101.5	98.0	3.5	3.44	0.83	0.34	10.24	<0.001
Hip	120.8	116.3	4.5	3.72	0.83	0.34	13.17	<0.001
Mid thigh	58.1	56.0	2.1	3.72	0.75	0.30	7.05	<0.001
Mid Arm	31.8	30.3	1.5	4.71	0.54	0.22	6.70	<0.001

As shown above Gomutra reduced weight and BMI by 6.51% and 6.11% respectively. It also reduced circumferences of chest, abdomen, hip, mid arm 3.61%,3.44%,3.72%,3.72% and 4.71% respectively

Table 12: Cow's urine effect on skin fold thickness in c.m

Skin fold Thickness (Cm.)	Mean Scores		MD	% Relief	SD ±	SE ±	t	P
	BT	AT						
Biceps	2.62	2.50	0.12	4.58	0.040	0.010	6.30	<0.001
Triceps	2.66	2.53	0.13	4.88	0.040	0.018	7.32	<0.001
Sub scapular	3.62	3.46	0.16	4.41	0.040	0.016	9.64	<0.001
Thigh	3.91	3.72	0.19	4.89	0.056	0.022	8.30	<0.001

Gomutra reduced Skin fold thickness (Cm.) of Biceps, Triceps, Sub scapular and Thigh by 4.58%, 4.88%, 4.41% and 4.89% respectively

Table 13: Cow's urine effect on lipid profile

Biochemical Values	Mean Scores		MD	% Relief	SD ±	SE ±	T	n	P
	BT	AT							
S.Triglyceride	179.33	159.05	20.09	11.02	7.73	2.57	7.68	4	<0.01
HDL Cholesterol	41.25	45.75	4.5	10.90	1.29	0.65	6.97	4	<0.01
LDL Cholesterol	141.5	125.0	16.5	11.66	8.19	4.09	4.03	4	<0.05
VLDL Cholesterol	35.44	31.66	3.78	10.65	1.64	0.55	6.90	4	<0.01
Total Cholesterol	221.5	197.50	24.00	10.83	13.22	5.39	4.44	6	<0.01
Total lipid	771.0	704.33	66.66	8.65	16.88	6.90	9.67	6	<0.001

Gomutra reduced S.Triglyceride, HDL,LDL, VLDL, Total cholesterol and Total lipid by 11.02%, 10.90%, 11.66%, 10.65%, 10.83% and 8.65% respectively

Table 14: Effect on Subjective Criteria / Sign and Symptoms

Symptoms	Mean Score		MD	% Relief	SD ±	SE ±	T	P
	BT	AT						
<i>Chalatva</i>	2.83	2.66	0.17	5.88	0.40	0.17	1.00	>0.05
<i>Kshudra Swasa</i>	2.33	0.66	1.67	71.42	0.52	0.21	7.90	<0.001
<i>Daurbalya</i>	1.67	0.5	1.17	70.00	0.75	0.31	3.80	<0.05
<i>Anga Gaurva</i>	2.0	0.66	1.34	66.00	0.52	0.21	6.32	<0.05
<i>Alasya</i>	2.33	0.66	1.67	71.42	0.52	0.21	7.90	<0.001
<i>Gatrasada</i>	1.5	0.66	0.83	55.55	0.75	0.31	2.71	<0.05
<i>Alpa Vyavaya</i>	0.83	0.66	0.17	20.00	0.41	0.17	1.00	>0.05
<i>Ati Kshudha</i>	1.67	0.83	0.84	50.00	0.98	0.40	2.08	>0.05
<i>Ati Piapasa</i>	1.17	0.66	0.5	42.85	0.84	0.34	1.46	>0.05
<i>Nidradhikya</i>	2.66	1.17	1.5	56.25	0.55	0.22	0.70	>0.05
<i>Swedadhikya</i>	2.0	1.17	0.83	41.66	0.75	0.31	2.71	<0.05
<i>Daurgandhya</i>	0.66	0.33	0.33	50.00	0.51	0.21	1.58	>0.05
<i>Snigdhangta</i>	1.0	0.5	0.5	50.00	0.55	0.22	2.24	>0.05
<i>Sandhishool</i>	2.66	0.83	1.83	68.75	1.17	0.48	3.84	<0.05

As shown above in the table *Gomutra* gave excellent relief in general symptoms of obesity or *Medovridhi* i.e., *Chalatva*, *Kshudra Swasa*, *Daurbalya*, *Anga Gaurva*, *Alasya*, *Gatrasada*, *Alpa Vyavaya*, *Ati Kshudha*, *Ati Piapasa*, *Nidradhikya*, *Swedadhikya*, *Daurgandhya*, *Snigdhangta* and *Sandhishool* by 5.88%, 71.42%, 70%, 66%, 71.42%, 55.55%, 20%, 50%, 42.85%, 56.25%, 41.66%, 50%, 50% and 68.75% respectively.

CUNCLUSION

My trial work was totally based on revealing anti obesity properties of *Gomutra* described in *Susruta samhita*. For this purpose 30 patients were selected randomly on the basis of objective criteria and subjective criteria. *Gomutra* (cow's urine) therapy was given to all patients for three months and results were calculated on statistically. *Gomutra* showed great improvement in all objective and subjective parameters as shown above. Thus we can say that *Gomutra* has a great medicinal value and is

very effective in the management of obesity and it can prove a boon in today's life.

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