

Therapeutic efficacy of *Agnimantha* (*Premna obtusifolia* R. Br.) in obesity (*Sthaulya*)

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Sthaulya is a deprecate state of human being. The physical morbidity of *Sthaulya* is paramount and enhances several disease processes. In the study, the role of *Agnimantha* (*Premna obtusifolia* R. Br.) as antiobesity agent has been studied in 26 subjects with severe form of *Sthaulya* and has been compared in 24 age and sex matched controlled subjects. Subjects of treatment showed remarkable decrease in BMI, triglyceride, cholesterol-HDL ratio, uric acid, LDL-HDL ratio and midtriceps skin-fold thickness. However, these observations are persistent only after continuation of treatment for 9 months. These observations could be more substantiated if a larger study is carried out with assessment of lipoprotein lipase activity and leptine determination. *Agnimantha* shows significant therapeutic value in obesity. The drug being *tikta-katu rasa*, *ruksha-laghu guna*, *ushna virya*, *Katu-vipaka*, act nicely for the treatment of obesity. *Agnimantha* is an ideal drug for the treatment of obesity as it is potent, innocent, cheap and easily available.

Keywords: Ayurvedic drugs, Obesity, *Sthaulya*, *Agnimantha*, *Premna obtusifolia*

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In Ayurvedic System of Medicine, obesity is considered under the title of *medoroga*, which stands amongst *Asta ninditiya roga* as *Sthaulya roga*. The excessive fat (*Atisthauilya*) is worse than excessive lean body (*Atikrisha*). This is an important nutritional or metabolic disorder. Several factors like physical, behavioural, cultural, metabolic and genetic factors are related to obesity. Uncontrolled eating habits are of great importance that again may occur due to several associated factors. An obese individual generally overeats beyond the normal calories than needed by the body.

Methodology

Root bark of *Agnimantha* (*Premna obtusifolia* R. Br.) procured from local market was standardised by Central Research Institute (Ayurveda) Kolkata. The root bark was dried and powdered in the pharmacy of Institute of PG Ayurvedic Education and Research, Kolkata. After vivid history taking clinical and pathological examination, 50 patients were selected

from the OPD of Institute of Post Graduate Ayurvedic Education and Research at SVSP Hospital Kolkata. Selection criteria included BMI (Body Mass Index), waist hip circumference ratio, mid-triceps skin fold thickness, and abnormal lipid profile. Exclusion criteria included hypothyroidism, diabetes mellitus, patients with alcoholic disorder, patients with mental disorder, and obesity due to other medicines, eg. contraceptive pills, steroids, etc. Assessment criteria included BMI, waist hip circumference ratio, mid triceps skin fold thickness, abnormality in lipid profile, estimation of insulin hormone, and estimation of enzyme lipoprotein lipase. Treatment group which

Table 1—Distribution of 50 patients according to treatment groups

Treatment groups	Groups	Drugs	Doses	No of patients
Diet + Exercise + <i>Agnimantha</i>	A	<i>Agni- mantha</i>	3 gm twice daily	26
Diet + Exercise Placebo	B C	— Rice powder	— 1 gm twice daily	12 12

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Table 2—Significance of treatment on different variables

Variables	Groups	Before treatment	Three months after treatment	Six months after treatment	Nine months after treatment
BMI	1	32.78 ± 0.33	30.89 ± 0.33	28.95 ± 0.31*	26.50 ± 0.37*
	2	32.83 ± 0.85	31.93 ± 0.86	31.23 ± 0.88	30.37 ± 0.88
	3	34.73 ± 0.33	34.51 ± 0.33	34.13 ± 0.35	33.87 ± 0.35
Waist hip ratio	1	0.89 ± 0.01	0.87 ± 0.01	0.86 ± 0.00**	0.84 ± 0.00*
	2	0.91 ± 0.01	0.91 ± 0.01	0.90 ± 0.01	0.89 ± 0.01
	3	0.92 ± 0.01	0.92 ± 0.01	0.92 ± 0.01	0.91 ± 0.01
Midtriceps skin fold thickness	1	3.49±0.08	3.37 ± 0.08	3.26 ± 0.08	3.09 ± 0.09**
	2	3.48±0.13	3.41 ± 0.13	3.36 ± 0.14	3.32 ± 0.14
	3	3.48±0.10	3.41 ± 0.09	3.41 ± 0.10	3.38 ± 0.10
Triglyceride	1	161.12 ± 3.79	151.54 ± 3.33	141.00 ± 2.77	130.92 ± 2.51**
	2	147.33 ± 4.96	145.25 ± 4.86	143.75 ± 4.85	142.58 ± 4.84
	3	159.75 ± 6.28	158.17 ± 6.34	157.92 ± 6.28	156.58 ± 6.33
LDL-HDL Ratio	1	2.15 ± 0.14	1.85 ± 0.11	1.62 ± 0.10**	1.45 ± 0.08**
	2	2.24 ± 0.16	2.13 ± 0.16	1.99 ± 0.15	1.89 ± 0.15
	3	2.12 ± 0.21	2.06 ± 0.21	2.00 ± 0.21	1.95 ± 0.20
Cholesterol HDL Ratio	1	3.93 ± 0.16	3.50 ± 0.11	3.18 ± 0.11**	2.94 ± 0.09*
	2	3.91 ± 0.20	3.77 ± 0.19	3.60 ± 0.18	3.49 ± 0.18
	3	3.86 ± 0.27	3.78 ± 0.26	3.71 ± 0.25	3.63 ± 0.24
Uric Acid	1	6.43 ± 0.16	6.13 ± 0.16	5.91 ± 0.17	5.61 ± 0.15**
	2	5.85 ± 0.33	5.69 ± 0.34	5.49 ± 0.34	5.38 ± 0.32
	3	6.52 ± 0.14	6.44 ± 0.14	6.38 ± 0.14	6.27 ± 0.15

**indicates $p < 0.05$ * indicates $p < 0.001$

consisted of total 50 patients for clinical study was randomly categorised into 3 groups. All the patients continued their treatment with the trial drugs for 9 months and the patients were assessed in follow up period of 3 months (Table 1).

Results

Agnimantha (*Premna obtusifolia* R.Br.) showed significant therapeutic value in the treatment of obesity (Fig. 1). It gave encouraging result, when administered with scheduled diet and exercise (Table 2). In respect to BMI the drug, *Agnimantha* was significant after treatment of 6 months and also after treatment of 9 months. In waist hip circumference ratio the drug *Agnimantha* was effective after treatment of 6 months and also after treatment of 9 months. In mid triceps skin fold thickness the drug was effective after treatment of 9 months only. In respect to triglyceride the drug was effective after treatment of 9 months. It is necessary to mention here that the drug is effective on LDL HDL ratio, which is known as atherogenic index. In respect to LDL HDL ratio, the drug was significant after treatment of 6 and 9 months. This



Fig. 1—*Agnimantha* (*Premna obtusifolia*)

drug was effective on cholesterol HDL ratio after treatment of 6 and 9 months. It was also effective in case of uric acid after treatment of 9 months. Hence, the drug is effective for the treatment of obesity.

Discussion

The drug *Agnimantha* is having *Katu*, *tikta rasa*, *ruksha guna*, *ushna virya* and *Katu Vipak*. On the basis of the quality of the drug, the pharmacodynamic action is considered. The drug is consisting of *Katu*

and *Tikta rasa*, which consisted of *Vayu & Agni*, and *Vayu & Akash Mahabhuta*, respectively. Due to the predominance of *Akash*, *Vayu* and *Agni*, the *kapha* gets subsided. Subsequently, the *ruksha guna* counteract *kapha*. *Katu rasa* directly combat *sthaulya* and *tikta rasa* acts on *meda*, therefore, both the *rasas* (*tikta & katu*) are responsible to encounter *sthaulya* directly. On the basis of its action *ushna virya* also encounter *meda* and subsequently reduce *sthaulya* by initiating the *agni* for its proper action. Hence, *rasa*, *guna*, *virya*, *vipak* of the said drug is responsible to combat *sthaulya*. Taste of the drug → increases *vayu* → flatulence → distension of abdomen. It is known that distension of abdomen reduces obesity via hypothalamus. *Virya* (potency) is most powerful in the pharmacodynamic action of a drug. The drug being *ushna virya* decreases obesity directly. It also decreases obesity (adiposity) probably by suppression of neuropeptide synthesis through leptin. The drug *Agnimantha* has been used from remote antiquity for the ailing and afflicts. No clinically adverse effects in the patients were observed.

Conclusion

Over the last four decades, there has been a dramatic change in environment, behaviour, life style, life expectancy and dietary habits. These changes have resulted in escalating obesity rates. The pathological condition is a major global problem, deteriorating the quality of life and making shorter life expectancy. The study reveals that *Agnimantha* is

a potent drug for the management of obesity. No adverse effects of the drug have been recorded. The drug is cheap and easily available. Hence, it will pave the path for better treatment of patients suffering from obesity.

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