Research Article

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EFFECT OF ROOKSHANA PURVAKA VAMANA KARMA IN THE MANAGEMENT OF STHULA MADHUMEHA WITH SPECIAL REFERENCE TO TYPE 2 DIABETES MELLITUS

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ABSTRACT

Background: Sthula Madhumeha is a disease caused mainly due to apathya ahara sevana involves the santarpanottha pathology. In modern parlance, it is identified with Type 2 Diabetes mellitus. Though oral hypoglycemic agents relieve hyperglycemia temporarily, there is a need for better management of this condition. As sthula madhumeha involves abishyanna, mahadosha and marmasthana in its manifestation, rookshana was employed before posting to shodhana karma. Objectives: To evaluate the therapeutic efficacy of rookshana purvaka vamana karma in sthula madhumeha with special reference to Type 2 Diabetes mellitus. Methods: It is a prospective clinical study where a minimum of 20 patients of either gender diagnosed as sthula madhumeha with special reference to Type 2 Diabetes mellitus were selected. Results: The overall results in the study revealed statistically highly significant results after udvartana and after vamana karma in all the subjective and objective parameters. Interpretation and Conclusion: The disease is santarpanottha, so rookshana purvaka vamana karma has been adopted here. The overall results in the study revealed statistically highly significant results after udvartana and after vamana karma.

Keywords: Sthula Madhumeha, Diabetes Mellitus, Rookshana Karma, Vamana Karma

INTRODUCTION

Diabetes is one of the most significant global health emergencies of the 21st century. In 2019 an estimated 463 million people constituting 8.8% of the world's adult population, had Diabetes mellitus, where 90% of the cases had Type 2 Diabetes mellitus[1]; India is deemed as the world's capital of Diabetes, the prevalence of which was 31.7 million in the year 2000 and is close to hitting the alarming mark of 69.9 million by 2025 and 80 million by 2030[2]. Diabetes mellitus is a group of common metabolic disorders that share the phenotype of hyperglycemia[3]. Drug intolerance, insulin resistance and the danger of acute and chronic complications made us to search for a safe and effective treatment which broke the pathological process of Diabetes mellitus and prevented its complications.

In Ayurveda, Prameha is classified into sthula and krisha[4]. Sthula madhumeha is manifested mainly due to the apathyanimitthaja[5]. In avaranajanya madhumeha, vriddhi (increase) of Kapha, Pitta, Mamsa or Medas occurs and obstructs the path of Vata by doing avarana (obstruction), thereby dragging the Ojus towards basti (bladder)[6]. Hence in sthula madhumeha patients who are balavan (strong) and presenting with bahu dosha lakshanas (excessively vitiated dosha), shodhana (purification) is the main line of treatment explained in classics for which vamana karma (emesis therapy) and virechana karma (purgation therapy) can be adopted[7]. Acharya Charaka has been advised to perform rookshana karma (emaciating therapy) in the diseases which involve abishyanna mahadosha (excessive vitiation) and marmastha vyadhis (vital organs). Sthula madhumeha is one such disease which involves abishyanna, mahadosha and marma in its manifestation[8] and in other terms sthula madhumehi is also mamsala, medhura and bhuri sleshma[9]. Hence the present study was undertaken to evaluate the efficacy of rookshana purvaka vamana karma in the subjects of sthula madhumeha with special reference to Type 2 Diabetes mellitus.

Objectives of the study: To evaluate the therapeutic efficacy of rookshana purvaka vamana karma in sthula madhumeha with special reference to Type 2 Diabetes mellitus.

MATERIALS AND METHODS

Source of data: 20 subjects of sthula madhumeha with special reference to Type 2 Diabetes mellitus were selected from the OPD and IPD sections of SKAMCH & RC, Bangalore, India. Ethical clearance was obtained from the Institutional ethical committee SKAMCH & RC meeting on 17 March 2016.

Sample size: 20

Study Design: Single arm, open labelled interventional prospective clinical trial.

Diagnostic criteria: Subjects presenting with the lakshanas of sthula madhumeha, subjects presenting with the signs and symptoms of Type 2 Diabetes mellitus, FBS (Fasting blood

sugar)>126 mg/dl, PPBS (Postprandial blood sugar)>200 mg/dl [3].

Inclusion Criteria: Subjects of either gender between the age group of 30-60 years. Subjects presenting with symptoms of sthula madhumeha and Type 2 Diabetes Mellitus, subjects fit for rookshana karma and vamana karma.

Exclusion criteria: Subjects with juvenile Diabetes mellitus, gestational Diabetes mellitus, Type 1 Diabetes mellitus and any other systemic illness which interfere with the treatment.

Investigation: Fasting blood sugar (FBS), Postprandial blood sugar (PPBS), Fasting urine sugar (FUS), and Postprandial urine sugar (PPUS).

Intervention

Table 1: Plan of Intervention

	N =20
Rookshana (7 days)	Udvartana with Aragwadadi gana choorna for 35 minutes, followed by bashpa sweda till the appearance of samyak swinna lakshanas.
Shodhana	**Arohana Krama Snehapana** with Moorchita tila taila till the appearance of samyak snigdha lakshanas. **One day vishrama kala** - Sarvanga abhyanga with Moorchita tila taila for 35 minutes followed by bashpa sweda with ushna jala till the appearance of samyak swinna lakshanas. Along with this, kapha utkleshakara ahara, like dadhi, vada and sweets were given. **On the day of Vamana** - Sarvanga abhyanga with Moorchita tila taila for 35 minutes, followed by bashpa sweda with ushna jala till the appearance of samyak swinna lakshanas. Vamana karma with Madanaphala pippali yoga. **Samsarjana krama** – Based on the shuddhi.

Table 2: Grading of Assessment criteria

Bahu Aashi (Excessive consumption of food)	Normal appetite, 1-2 meals/day	0
	Slightly increased, 3-4 meals/day	1
	Moderately increased, 5-6 meals/day	2
	Markedly increased, >7meals/day	3
Shayyasanasheelata (Indulging in excessive sitting and lying down)	No laziness, doing work satisfactorily with proper vigour, in time.	0
	Doing satisfactorily late likes to stand than to walk.	1
	Doing work unsatisfactorily under a lot of mental pressure, late initiation, likes to sit more than to stand.	2
	Doing work very slowly, likes to lie down than sit	3
Swapnasheelata (Excessive indulgence in sleep)	Doesn't sleep during the day; able to get up early in the morning; sleeps at night for 6-8 hours	0
	Able to avoid day nap easily, but will be a bit drowsy; sleeps at night for 6-8 hours or more	1
	Not able to avoid day nap and sleeps at least for half an hour; sleeps at night for 6-8 hours or more	2
	Constantly drowsy, sleepy; sleeps at day for 1-2 hours; sleep at night for 6-8 hours or more	3
Prabhootamootrata (Polyurea)	3-4 times/day and one time or occasionally at night	0
	5-6 times/day and two times at night	1
	7-10 times/day and 3-4 times at night	2
	11-12 times/day and 5 times at night	3
Ati Trishna (Polydipsia)	Normal, 1.5-2litres	0
	Increased thirst, drinks 2-2.5 litres, drinking water frequently, volume of drinking water can be controlled	1
	Increased thirst, drinks 2-3 litres, drinking water very frequently (approx. once in 2 hours)	2
	The amount and frequency of water intake is very high (more than 3 litres)	3
KarapadaDaha (Burning sensation of foot and hands)	No daha	0
	Karapada daha occasionally	1
	Moderate karapada daha and routine activities are not hampered	2
	Continuous karapada daha, severe and unbearable	3

Assessment Criteria

The following subjective and objective parameters were assessed using different grading methods- before, during, and after treatment.

The assessment was on the 0^{th} day, the 7^{th} day (after bahya rookshana), and after vamana karma.

Statistical methods: The data of 20 subjects who have completed the entire treatment course were analysed. Data was collected using specially designed case proforma. The collected data are tabulated and analysed through paired 't-tests.

OBSERVATIONS AND RESULTS

In the present study, a total of 20 subjects who had completed the whole course of treatment were taken for evaluation. Out of 20 subject's maximum number (12) of individuals belonged to 51-60 years. Fourteen subjects were male, and 6 subjects were female. Fourteen subjects had mixed diets and 6 were vegetarian. 13 had the habit of tea/coffee, 5 subjects were alcoholic and 2 were smokers. Eight subjects presented with a positive family history of Type 2 Diabetes mellitus. Sixteen subjects had a history of diva swapna. A maximum number (12 subjects) had Type 2 Diabetes mellitus for 1-5 years. During rookshana average number of days for the appearance of samyak rookshana lakshanas was 5.25. During the procedure of vamana karma average time taken for the onset of the first vega was 22.3 minutes, the average time gap between the first and last vega was 53 minutes, the average dose of vamaka dravya was 10 g, the average vaigiki shuddhi was 6.

Bahu aashi, shayyasana sheelata, swapna sheelata, prabhootha mutrata, ati trishna, karapada daha, before treatment (BT) and after udvartana (at1), before treatment (bt) and after vamana karma (at2) revealed statistically highly significant result with p-value <0.001.

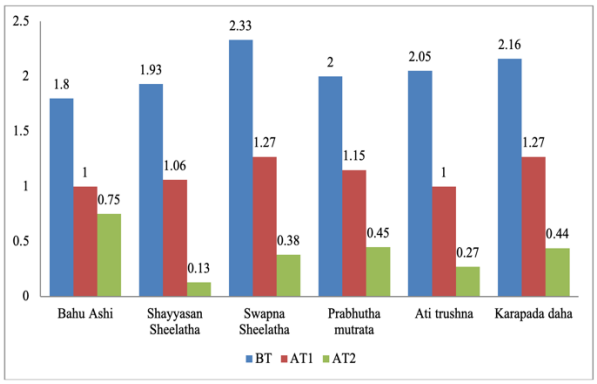
FBS, PPBS, FUS and PPUS: Before treatment (BT) and after vamana karma (AT2), the p-value <0.01 revealed statistically highly significant results on FBS and FUS, p-value <0.001 revealed statistically highly significant results on PPBS and PPUS.

BMI (Body Mass Index): Before treatment (BT) and after vamana karma (AT2), the p-value <0.001 revealed statistically highly significant results on BMI.

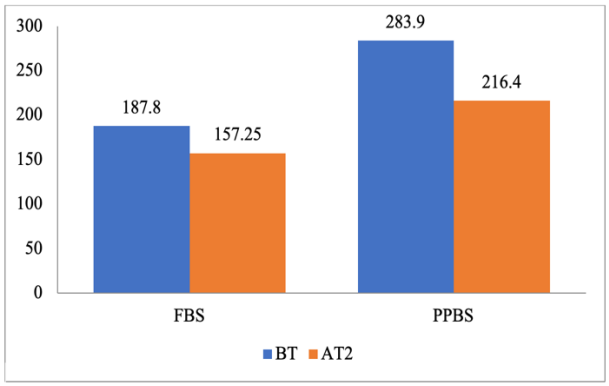
Table 3: Results of Paired 't-test on Subjective and Objective Parameters

Parameter	Group	Mean		Mean Diff.	Paired 't-test				
		Before	After		S.D.	S.E.	t-value	p-value	Remark
Bahu Ashi	BT-AT1	1.8	1	0.8	0.41	0.09	8.71	<0.001	HS*
	BT-AT2	1.8	0.75	1.05	0.39	0.08	11.91	<0.001	HS*
Shayyasana Sheelatha	BT-AT1	1.93	1.06	0.87	0.51	0.13	6.49	<0.001	HS*
	BT-AT2	1.93	0.13	1.8	0.41	0.16	11.30	<0.001	HS*
Swapna sheelatha	BT-AT1	2.33	1.27	1.05	0.41	0.09	10.75	<0.001	HS*
	BT-AT2	2.33	0.38	1.95	0.53	0.12	15.29	<0.001	HS*
Prabhootha mutrata	BT-AT1	2	1.15	0.85	0.36	0.08	10.37	<0.001	HS*
	BT-AT2	2	0.45	1.55	0.51	0.11	13.58	<0.001	HS*
Ati trushna	BT-AT1	2.05	1	1.05	0.41	0.09	10.79	<0.001	HS*
	BT-AT2	2.05	0.27	1.78	0.42	0.10	17.63	<0.001	HS*
Karapada daha	BT-AT1	2.16	1.27	0.88	0.58	0.13	6.46	<0.001	HS*
	BT-AT2	2.16	0.44	1.72	0.57	0.13	12.71	<0.001	HS*
FBS (Fasting Blood Sugar)	BT-AT2	187.8	157.25	30.55	46.42	10.38	2.94	<0.01	HS*
PPBS (Post Prandial Blood sugar)	BT-AT2	283.9	216.4	67.5	67.75	15.14	4.45	<0.001	HS*
FUS (Fasting Urine Sugar)	BT-AT2	0.75	0.25	0.5	0.82	0.18	2.70	<0.01	S**
PPUS (Post Prandial Urine Sugar)	BT-AT2	1.55	0.7	0.85	0.81	0.18	4.67	<0.001	HS*
BMI (Body Mass Index)	BT-AT2	30.77	29.08	1.69	0.78	0.17	9.61	<0.001	HS*

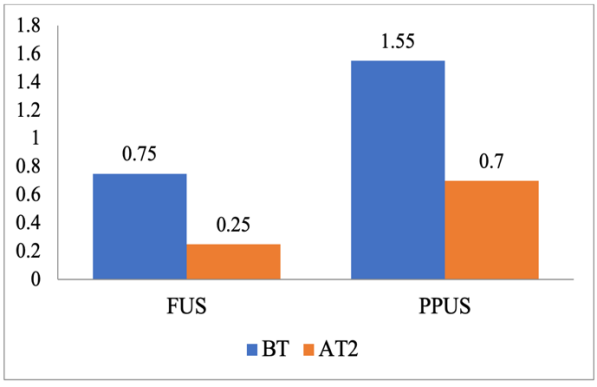
BT: Before Treatment, AT: After Treatment, * Highly significant, ** Significant



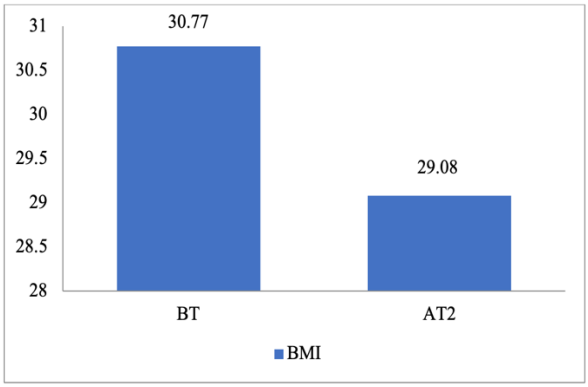
Graph 1: The mean of subjective parameters before treatment, after treatment and at follow up



Graph 2: The mean of FBS and PPBS before treatment and at follow up



Graph 3: The mean of FUS and PPUS before treatment and at follow up



Graph 4: The mean of BMI before treatment and at follow up

DISCUSSION

Diabetes mellitus and its secondary pathophysiological metabolic changes may affect the multi-organ system and are identified as the leading cause of ESRD (End stage renal disease) and cardiovascular complications[3]. Metabolic syndrome is a cluster of biochemical and physiological abnormalities associated with the development of cardiovascular disease and Type 2 Diabetes mellitus, out of which 80% are attributed to coronary artery disease due to atherogenic changes promoted by high levels of insulin resistance and atherogenic pathology. Due to this involvement of atherogenic pathology, shodhana (purification),

which is routinely administered with pachana, deepana, snehana and swedana, cannot be implemented in a santarpanottha disease like sthula madhumeha with special reference to Type 2 Diabetes mellitus. So, if it is implemented in a generalised manner, it may lead to sneha vyapath (complications of excess oleation) and other complications. As per Charaka Samhita langhanabruhmaniyam adhyaya, in conditions of abhishyanna, mahadosha (excessive dosha vitiation), marmastha vyadhi (diseases pertaining to vital organs) like Prameha, there is a requirement of rooksha purva snehana followed by shodhana[8]. Prameha chikitsa gives more importance to gaadha udvarthana (powder massage) as a bahirparimarjana (external) modality, followed by shodhana[10]. So, in the present study, subjects of sthula madhumeha were given with rookshana before the shodhana and the udvartana (Aragwadadi gana choorna) as a modality of rookshana. It exerts the effect of Kaphahara, Medo pravilayana (liquefaction of Meda dhatu), siramukha viviktata (opening of body channels) and twakascha agneyascha tejanam effect. It alleviates the Kapha and does the shoshana (reduces) of Meda.

Further continuing with snehapana (Moorchita tila taila pana), mainly indicated in vridha sleshma, vridha meda and chala sthula-gala udara subjects, without further increasing the Kapha dosha it brings the effect of dosha uttkleshana[11], which is the prime requisite before vamana karma. vamana karma by its pardhanyena dosha nirharana (expulsion) effect, kevalam vaikarika Kapha apakarshayathi effect[12] expels the vitiated Kapha dosha and exerts the kleda samshamana[13]. All these treatment modalities might reduce hyperglycaemia and alleviate insulin resistance. In peyadi samsarjana krama, brown rice has explicitly been administered in the form of peya, vilepi, odana (gruel and rice preparations) is known to have metadichol (a nano emulsion of long-chain alcohols found in many foods) as a component which is also having the effect of reducing the insulin resistance[14]. Thus, the overall impact of rookshana purvaka vamana karma on sthula madhumeha, with special reference to Type 2 Diabetes mellitus, exerted highly significant on bahu aashi, shayyasana sheelata, swapna sheelata, prabhootha mutrata, ati trishna and karapada daha. FBS, PPBS, FUS, and PPUS can be considered under the increased status of kleda, Kapha and excess madhuribhava of Rasa dathu. To combat this, udvartana, a modality of rookshana with the kleda shoshana effect, was adopted and has shown significant results. The same effect was continued by adopting vamana karma which also does kleda samshodana by expelling the morbid doshas in large quantities out of the body and may also reduce the resistance to the action of insulin, thereby it showed a highly significant effect on FBS, PPBS, FUS and PPUS.

BMI: Reduction in body weight is reflected through a change in BMI. The present study showed highly significant results due to the apatarpana effect exerted by udvartana. The same effect was continued by adopting the vamana karma due to its large quantum dosha nirharana effect, thereby exercising the apatarpana effect, which reduces the BMI.

CONCLUSION

Sthula madhumeha caused due to apathya ahara sevana involves the santarpanottha pathology pertaining to Kapha-Medo avarana, bahudoshavastha and kledapradhanyata. rookshana karma is adopted before snehapana as a purvakarma of shodhana in patients who are mamsala, medura and bhurisleshmala, which can be best achieved through udvartana using Aragwadadi gana churna. Murchita taila can be utilised for snehapana as indicated in pravridda sleshma and medaska conditions. Shodhana employing vamana karma plays a pivotal role in managing sthula madhumeha to correct the status of vata by relieving the Kapha-Medo avarana under its bahudosha nirharana, sroto shuddhi and kledaprashamana effect. The overall results in the study revealed statistically highly significant results after udvartana and after vamana karma.

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