



ROLE OF DIET, YOGA AND LIFESTYLE ALONG WITH KARMA BASTI IN OBESITY- A CASE STUDY

Chaitali N. Turkane¹, Sumeeta S. Jain²

¹MD Scholar, ²Professor and HOD, Dept. of Swasthavritta and Yoga, Government Ayurveda College and Hospital, Nagpur, Maharashtra,

Corresponding Author: chaitaliturkane32@gmail.com

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ABSTRACT

Obesity is regarded as a pandemic, with potentially disastrous consequences for human health.^[1] Overweight and Obesity are defined as abnormal or excessive fat accumulation that presents a risk to health. A body mass index (BMI) over 25 is considered overweight, and over 30 is obese.^[2] Obesity can be correlated to *Medovah Srotas Dushti* manifesting symptoms like *Atisthoulya* and *Prameh Purvroop* due to similarity in signs and symptoms.^[3]

Aims and Objectives: This study aimed to study the efficacy of *Ayurvediac* Management including *Shodhan*, *Shaman Chikitsa*, diet, *yoga* and lifestyle modification. **Materials and Methods:** A case of Obesity was treated with *Shodhan* followed by *Shaman chikitsa*. For *Shodhan Jaladhauti*, *Sarvang Snehana*, *Swedan*, *Karma Basti*, *Udwartan* along with Diet, *Yoga* and Lifestyle is advised. **Results:** Patient was observed for Symptomatic improvements based on the Assessment done by the BMI and Waist Circumference Before and After treatment. The therapy provided marked relief in pain with remarkable decrease in weight. **Conclusion:** *Ayurvedic* management provides significant relief and improves the quality of life.

Keywords: Obesity, Diet, *Yoga*, *Karma Basti*, lifestyle, *Ayurveda*

INTRODUCTION

In 2022, 1 in 8 people in the world were living with obesity. Worldwide adult obesity has more than doubled since 1990, and adolescent obesity has quadrupled. Obesity is a chronic complex disease defined by excessive fat deposits that can impair health. Obesity can lead to increased risk of type 2 diabetes and heart disease, it can affect bone health and reproduction, it increases the risk of certain cancers. Obesity influences the quality of airline policy, such as sleeping or moving. The diagnosis of obesity is made by measuring people's weight and height and by calculating the BMI marker of fatness and additional of measurements, such as the waist circumference, can help to diagnose obesity.[4] Overweight and Obesity results from an imbalance of energy intake (diet) and expenditure (physical activity-Lifestyle including some Yoga postures.) In most cases Obesity is multifactorial diseases due to Obesogenic environment, psychosocial factors and genetic variants. Some complication related to Obesity are Psychological (eating disorder, Poor self-esteem, body image disorder, social isolation stigmatisation, depression), Endocrine (insulin resistance, type 2 diabetes, menstrual irregularities, PCOS, Cardiovascular (HTN, dyslipidemia..), Neurological (IIIH), Pulmonary (obstructive sleep apnoea, asthma), Renal (glomerulosclerosis, renal cancer), Musculoskeletal (ankle sprains, flat feet, tibia vera, osteoarthritis, back pain), Gastro intestinal (gall stones, gastro -oesophageal reflux, non-alcoholic fatty liver disease, colon cancer).[5]

In *Ayurveda*, Obesity has been described as *Sthoulya* or *Medoroga* as described in *Santarpanokta Vyadhi* [6] caused by some *Aharaj hetu* (*Ati Sigdha Annapana*, *Guru*, *Madhur*, *Pichhil*, *Navin Dhanya*, *Anup Mamsa sevan*) and *Viharaj hetu* (*Diwasap*, lack of physical exercise like *Asanas* and *Pranayama*) same like of *Prameh hetu*,^[7] Stress factor is one of the

cause of obesity. In the case of an obese person, *Medovah Srotas* is affected, and the site of metabolic disturbance is *Medo Dhatu*. The health risks associated with obesity are largely reversible if identified and treated early. Effective management includes lifestyle modifications to reduce body weight, supervised low-calorie diets, specific *yoga* practices, and, in some cases, bariatric surgery, which is the most effective long-term treatment.^[8] It's important to recognize that obesity is not a standalone disease but is often accompanied by risk factors such as smoking, excessive alcohol consumption, diabetes mellitus, hyperlipidaemia, hypertension, obstructive sleep apnea, and stress. Considering the overall condition, the treatment should focus on holistic well-being, encompassing physical, emotional, and spiritual health, which is effectively addressed by *Ayurveda*. This includes *Shodhana* (detoxification), *Shamana Chikitsa* (palliative therapy), *Karma Basti* (medicated enema), *Udvardana* (*Ayurvedic* powder massage), along with a *Pathyakar* diet, *yoga*, and lifestyle modifications.

CASE REPORT

A 40-year-old female patient presented to the *Swasthavritta and Yoga* OPD with complaints of increased body weight over the past 4 years, accompanied by fatigue, bilateral lower joint pain, difficulty in sitting and standing (*Asane Uthapan Kashtata*), and excessive sweating (*Atiswed Pravrutti*) for the past year. The patient had no known history of diabetes mellitus (DM), hypertension (HTN), thyroid, asthma, or PCOS. *Ashtavidha Pariksha*, *Dashavidha Pariksha*, and a general physical examination including anthropometry were conducted. Her hematological reports showed altered values, and her BMI was calculated to be 35.47 kg/m², classifying her as Class 2 Obesity.

Table 1: the international classification of adult underweight, normal, overweight and obesity according to BMI^[9]

Nutritional status	BMI
Underweight	<18.5
Normal Weight	18.5-24.9
Pre- obesity	25-29.9

Obesity class 1	30-34.9
Obesity class 2	35-39.9
Obesity class 3	>40

Table 2: Personal history, Anthropometry and *Ashtvidha parikshan* before starting treatment.

B.P.	130/80 mm hg
Pulse (<i>Nadi</i>)	82/m (<i>vat-pitta</i>)
Height	5'2" (1.575m)
Weight	88kg
BMI	35.47 Kg/m ²
W.C.	112cm
H.C.	122cm
<i>Ahara</i>	<i>Madhur, Snigdha anna sevana</i>
<i>Vihar</i>	Gruhini, <i>Avyayam</i> , <i>Diwaswap</i> , sedentary lifestyle
<i>Kshudha</i>	<i>Kshudha mandya</i>
<i>Mala</i>	<i>Asamandharak</i>
<i>Mutra</i>	<i>Prakruta</i>
<i>Jivha</i>	<i>Saam</i>
<i>Shabda</i>	<i>Spashta</i>
<i>Sparsha</i>	<i>Samshitoshma</i>
<i>Druka</i>	<i>Prakruta</i>
<i>Akruti</i>	<i>Sthool</i> (Bulky)
<i>Nidra</i>	<i>Samyaka</i>
<i>Vyasana</i> (Habit)	Fond of fermented food, packed foods and sweets.

Table 3: General Physical examination

Gait	Normal
Nourishment	Well Nourish
Pallor	Absent
Icterus	Absent
Cynosis	Absent
Edema	Absent
Lymphadenopathy	Absent

Table 4: Systematic Examination

RS	AE=BE
CVS	S1 S2 Normal
P/A	SOFT, NT
CNS	Well oriented, Conscious

INVESTIGATION

Table 5: Laboratory investigation 28/6/2024

HB	12.6
TLC	5400
DLCP	57%
L	35%

E+M	8%
ESR	53mm/hr
Platelet	4.22lacs/cu mm
SGOT	20U/L
SGPT	24.7U/L
Bilirubin (total)	0.49mg/dl
Bilirubin(direct)	0.34mg/dl
Blood urea	15.9mg/dl
Creatinine	0.70mg/dl
Uric acid	6.4mg/dl
F.B.S.	98mg/dl
P.P.	119mg/dl

Table 6: Lipid Profile

Cholesterol	173mg/dl
Triglyceride	153mg/dl
HDL	37mg/dl

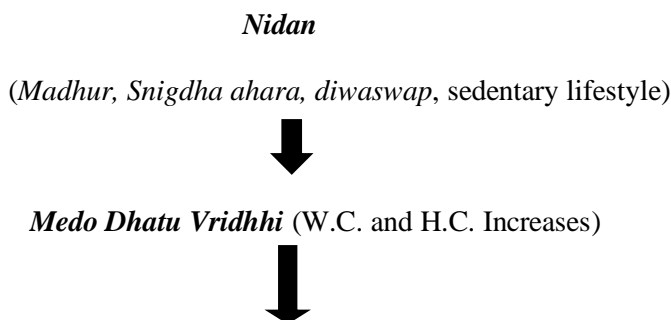
Table 7: Dashvidha Rogi Parikshana

1. Prakriti	Vata-Kaphaj	6. Aahar Shakti	Pravar (abhyavahara, Jaran-shakti)
2. Vikrita Dosha Dushya	Kaph Rasa, Mamsa, Meda	7. Vyayama Shakti	Avar
3. Sara	Madhyam	8. Satmya	Madhyam
4. Samhanana	Madhyam	9. Vaya	Madhyam
5. Satva	Madhyam	10. Pramana	Pravar

Table 8: Nidan Panchak

Nidan	Ahara - Madhur, Snigdha, Abhishyandi Ahara (fermented foods, sweet foods) Vihara - Avyayam, Diwaswap, sedentary lifestyle
Poorvaroop	Daurbalya
Roopa	Udar, Spik Lambanam, Swedadhikya, Asanae Uthapan-Kashata BMI = 35.47 Kg/m ² W.C. = 112cm H.C. = 122cm
Upashaya	After treatment
Anupshaya	Santarpan Janya Vyadhi

Flow Chart 1: Samprapti of Sthoulya



Sroto Avarodha By Meda (BMI Increases)



Vata Specially Confined to Koshta and Causes Jathrangi Vriddhi

(Daurbalya, Swedadhikya, Asane Uthapan Kashyata)

Table 9: Samprapthi Ghataka

Udbhava sthana	Amashaya
Vyakta Sthana	Sarva Shareera
Adhistana	Meda Dhatu
Roga Marga	Bahya
Agni	Teekshna
Dhatwangi	Mandhya
Dosha	Kapha Vata
Dushya	Rasa, Mamsa, Meda
Srotas	Rasavaha, Medovaha
Sroto Dushti	Sanga
Sadhya Asadhyata	Krichra Sadhya

Table 10: Treatment Schedule Adapted From 29-05-2024 to 8-07-2024.

Days	Treatment	Observation
Day 1-5	<ol style="list-style-type: none"> 1. Dhauti karma done on next day after admission with proper Pachhat Karma 2. Udawartan with Triphala and Yaw churna 1/day 3. Triphala, Guduchi, Nagarmotha each 10gm -3gm BD Before meal 4. Arogyavardhini 1tab BD before meal 5. Diet, Yoga, Pranayama, lifestyle advised. 	<ul style="list-style-type: none"> • Appetite- Good • Jivha- Niram • Bowel- Passed • Micturation- Passed • Sleep- Sound
Day 6-36	<ol style="list-style-type: none"> 1. Sarvang Snehana Swedan 2. Start Erandmuladi basti –18 Anuwasana 60ml, 12 Erandmuladi Niruh 560ml. 3. Udawartan with Triphala and Yaw Churna 1/ day 4. Kaishour Gugula 2tab BD after meal 5. Diet, Yoga, Pranayama, Lifestyle 	<ul style="list-style-type: none"> • Appetite- Better • Jivha- Niram • Bowel- Passed • Micturation- Passed • Sleep- Sound • Pain- Decrease
Day 37- 38	<ol style="list-style-type: none"> 1. Udawartan with Triphala Churna and Yaw Churna 1/day 2. Diet, Yoga, Pranayama, lifestyle advised. 	<ul style="list-style-type: none"> • Appetite- Better • Jivha- Niram • Bowel- Passed • Micturation- Passed • Sleep- Sound • Pain- Decrease • Weight- Reduced
Day 39	<ol style="list-style-type: none"> 1. Rasayana Churna 5gm with 1tsp of Grita and half tsp of 	<ul style="list-style-type: none"> • Appetite- Better

Discharge day	<p><i>Makshik</i></p> <ol style="list-style-type: none"> 2. <i>Asthiposhak Vati</i> 1OD after meal 3. <i>Medopachak Vati</i> 10ml BD after meal 4. Diet, Yoga, Pranayama, lifestyle advised. 	<ul style="list-style-type: none"> • <i>Jivha- Niram</i> • Bowel- Passed • Micturation- Passed • Sleep- Sound • Pain- Decrease • Weight- Reduced
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- Some Karma like *Nabhipuran (Grita)*, *Padabhyang (Tila tail)*, *Nasya (Grita)* are also advised, which has good effect on patient for *Mala Pravrutti* and quality of sleep also improved.
- Follow-up after 15 days.

Table No 11:

Preparation of Erand-Muladi Basti.480 ml

<i>Makshika</i>	20 gm
<i>Lavana</i>	5 gm
<i>Sneha</i>	120 ml
Content of <i>Kalka</i>	
Content Of <i>Kwatha</i>	<ul style="list-style-type: none"> • <i>Erandmul</i> (3 part), <i>Laghu-Panchamula</i>, <i>Rasana</i>, <i>Ashwaghandha</i>, <i>Atibala</i>, <i>Guduchi</i>, <i>Punarnava</i>, <i>Aargvadh</i>, <i>Devdaru</i> (1 part), <i>Madanphal beej</i> 2gm each time. • Take 500 ml of water add 50 gm of bharad churna soaked for night, make 250ml by boiling
<i>Aawap Drvya</i>	<i>Gomutra arka</i> - 30ml with 30 ml of water

Table 11:

Scheduled Diet During and After Treatment.

Day 1-5	<ul style="list-style-type: none"> • The Day before <i>Dhauti Karma (D2)</i> before 7.30pm- Dahi (half vati), bhat (1vati) • After <i>Dhauti</i>-Morning- Only <i>Koshna Jal</i> is advised to drink, Lahya. Evening- <i>Mudga Khichari</i> with <i>Grita</i>. • 6.30am- <i>Yaw-amlakyadi churna</i> 5gm with <i>koshna jal</i> • 8.30am- <i>Mudga usala</i> 1vati, 250ml <i>Trakra Jeerakyukta</i> • 1pm- 1Bhakari, 1vati varan, 1vati bhaji (Phulkobi, Dodake, Padwala, Chakwat, Karale, Vangi) with 2tsp <i>Grita</i>. • 5.30pm- Papaya, Dadim, Phutane, <i>Lahya</i> • 8pm- 1Bhakari, 1vati bhaji (Phulkobho, <i>Mudga</i> varan, karale) with 2tsp <i>Grita</i> • <i>Koshna Jal</i> sevan.
Day 6-36	<ul style="list-style-type: none"> • 6.30am- <i>Yaw-amlakyadi churna</i> 5gm with <i>koshna jal</i> • 8.30am- <i>Mudga usala</i> 1vati, 250ml <i>Trakra Jeerakyukta</i> • 1pm- 1Bhakari, 1vati varan, 1vati bhaji (Phulkobi, Dodake, Padwala, Chakwat, Karale, Vangi) with 2tsp <i>Grita</i>. • 5.30pm- Papaya, Dadim, Phutane, <i>Lahya</i> • 8pm- 1Bhakari, 1vati bhaji (Phulkobho, <i>Mudga</i> varan, karale) with 2tsp <i>Grita</i>. • <i>Koshna Jal</i> sevan.
Day 37- 38	<ul style="list-style-type: none"> • Normal Diet
Day 39	<ul style="list-style-type: none"> • Normal Diet
Discharge day	

- Foods to be avoided- Fermented, Spicy, stale foods, Fried food, Junk food, Packed foods, Foods made from plain flour, sweet foods, shali should be avoided in more quantity.

Table 12:

Asanas, Pranayama, Shatkriya Advised. (Holding of Asanas for at list 15 sec)

Standing Asanas	1. Sukshama-Sandhisanchalana
	2. Suryamskar (starting from 5-21)
	3. Tirryaktadasana
	4. Trikonasana
	5. Padahastasana
Sitting Asanas	1. Suksha-Sandhisanchalana
	2. Chakkiasana
	3. Sthitta Konasana
	4. Paschimottanasana
Supine Asanas	1. Ardhalasana
	2. Dwicakriasana (Cycling)
	3. Markatasana
	4. Halasana
Prone Asanas	1. Bhujangasana
	2. Shalabhasana
	3. Dhanurasana
Pranayama	1. Anulom-Vilom
	2. Suryabhedan
	3. Bhasrika
	4. Bhramari
	5. Ujjayi
Shuddhikria (Shatkarma)	1. Dhauti
	2. Kapalbhati

Table 13:

Lifestyle (Dincharya) Advised.

Purva Dincharya	Corrected Dincharya
• Prat-utthan- 8.30 am	6.30 am
• Shauchvidhi- As earlier 3-4/week	Regular due to proper diet, yoga, lifestyle and the medicine.
• Dantdhavan-8.45 am	7 am
• Yoga-No	45 min Yoga with 10min Pranayama/Regularly
• Chaha, Nashta- 2-3 times, Idali, Upama, Dosa, Po-ha.	Shifted to eating soaked 10-15 Mudvika (black raisins)
• Prat-Bhojan- 1.30 pm, 4-5chapati, 1vati varan, 1vati bhaji, 2vati bhat.	Nashta shifted to 10am Prat bhojan. Bhat should be strictly avoided with 4 Chapati 1 vati bhaji, 250 ml of takra, 2tsp of ghrta, salad
• Evening Snacks-1cup tea with bread/2-3 biscuit, chips	Papaya, Dadim, Rajgeera laddu, Shengdana gud ladu, jwari papad.
• Ratra Bhojan- 9.30pm, 2-3vati bhat 1vati bhaji	1 jwari+nachani bhakari, 1vati bhaji, 2tsp ghrta.
• Nidra-12.30am Diwaswap-1.30 hour	10pm. Strictly avoid
• Jalsevan/day- 4L Bhojan kal jalasevna- 2 Glass. Bhojanottara- 1 Glass	3L Half Glass
• Mams-sevana – 2 /week	1/week

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Table 14:

Assessment of Anthropometry changes before and after treatment.

Observation	Before Treatment	After Treatment
Weight	88 Kg	74 Kg
BMI	35.47 Kg/m ²	29.83 Kg/m ²
W.C.	112 cm	106 cm
H.C.	122 cm	115 cm
W/H	0.918	0.913

RESULT

On the day of admission, dated 29-05-2024, the patient's weight was 88 kg. By 08-07-2024, the weight had reduced to 74 kg. The results indicated a significant weight reduction of 14 kg in just over one month, highlighting the effectiveness of the treatment plan.

DISCUSSION

According to *Ayurveda* the patient was diagnosed as a case of *Sthoulya*, predominately *Kapha*, *Vat Vikruta Doshas* and *Rasa, Mansa, Meda* as *Vikrita Dushyas*. Patient adopted Sedentary Lifestyle, lack of exercise and daily sleep with excess intake of *Madhur, Snigdha Ahara* and improper dietary practices. Clinically patient presented with signs and symptoms such as increased body weight, fatigue, bilateral lower joints pain, inability to sit down and to stand, *Atiswed Pravrutti*. Considering *Sthoulya* to be the *Santarpana Janya Vyadhi*,^[6] the line of treatment mainly includes *Deepan, Pachan, Karma basti* along with Diet, Yoga and the some *Dincharya* regimens (Lifestyle correction). First *Triphala, Guduchi, Nagarmotha*^[10] (each 15gm) 3gm BD for 7 days before meal was given. The *Awala* in *Triphala* has a *Kledaghna* property, due to its *Ruksha* and *Kashay Guna* it also absorb the *Kleda*^[11], *Bibhitaki* due to its *Bhedan Guna* it acts on the *Meda Dhatu*, as *Tridosahar*^[12] *Haritaki* balances the all three *Doshas*^[13], as a whole *Triphala churna* shows its efficacy and safety for hyperlipidemia, hyperglycemia, and obesity with no serious side effects.^[14] *Guduchi* and *Nagarmotha* being *tikta*, it digests the *Dhatugat Aam* and increases the *Dhatvagani*.^[15] *Arogyavardhini* 1tab BD before meal with hot water, the contet like *Loha Bhasma, Tamra Bhasma, Shilajit, Gugula, Kutaki* having the *Bhedan* property which acts on the *Meda Dhatu*.

Arogyavardhini alone with with significant diet, yoga and lifestyle medication statistically decreases the waist circumference.^[16] *Kaishaur gugula* itself acts on *Rakta* and the *Meda Dhatu, Jaukut* available in the *Kaishaur Gulula* have a drastic effect on Fat Metabolism, the *Trikutu churna* have a *Sushma Srotogamitva* by this it opens the channels by which the further medicine is transported to the target cell and the particular action is seen, the *guggul* present in it has a hypolipidemic activity.^[17] The *Sarvang Snehan* with *Til tail* and the *Swedan* with *Dashmool bharad* also removes the toxins from the body and make body lighter and makes more suitable for the *Basti Karma*.^[18] The *Karma Basti* which is for 30 days^[19], 18 *Anuwasana Basti* with *Dhanwantar tail* of 60 ml and 12 *Erandmuladi Niruh Basti* of 560ml. *Dhanwantar tail* specifically formulated to balance *vata kapha dosha*, making it invaluable for musculoskeletal disorders and neurological conditions.^[20] *Erandmuladi Niruh Basti* acts on *Jangha, Basti, Uru, Pada, Triksandhi, Prushta* by decreasing the pain and *Aavrana* of *kapha* and the *vata*.^[21] The most remarkable effect of this *Basti* which is seen in this patient is *Lekhan karma* along with it increases the Digestive fire, and the *Upkram* like *Udawrtan*^[22] with *Triphala* and *Yaw Churna* once a day enhances the Hepatic circulation which releases the enzymes which induces the Lipolysis by this, it helps to overcome the cholesterol level. The diet for *Atistaulya* is just same as *Premeh* patient use of *Puran Dhanya, Yaw, Yaw-sattu, Tikta Rasat-*

mak Shak, Mudg, Jangal Mansa. Atasi and Sarshap tail are particularly advised. Takrasevan, Makshik Jalsevan, Sunth, Yawkshar sevan, Awala Churna sevan, Kulith has significant role in *Staulya*.^[23]^[24] The Proper Yoga Schedule advised for the Pateint is by doing only *Suksha-Sandhisanchalan* with 5 *Suryanamskar* for 5 days to increases the motality of the body by step wise wise including the *Asanas* like *Shalabhasana, Dhanurasana, Bhujangasana, Ushtrasana, Chakrasana, Pachhimotanasana*^[25], *Halasana*^[26] which has significant role to lower down the overall body fat and tone the body. *Shudhikrya* like *Jal-Dhauti*^[27] has significant role to lower the weight if done properly, *Kapalhati*^[28] with 100 stroke per day significantly reduces the abdominal fat. *Pranayama* like *Sury-Bhedan* balances the right nadi (*Pingala*) which is responsible for the fire in the body, *Bhramari* balances the hormonal imbalance and the *Bhramari* aligns the mind with body. *Ujjayi* has a *Kaphadoshhar* property which destroy the *samprati* in obesity if done on regular basis.^[29] The lifestyle according to the *Ayurveda* is include particularly in the *Swasthavritta* i.e the regimens according to the *Dincharya* (*Diwaswap* should be strictly avoided, *Ahar kala*) and *Ratricharya* (Proper sleep time) Poor sleep effects the circadian rhythm, this behaviour results in poor metabolic health by increasing the caloric intake due to sleep deprivation.^[30] *Shaman Chikitsa* was described for next month after discharge from the IPD *Astiposhak Vati* 1OD after meal, *Medopachak Kawath* 10ml BD after meal, with *rasayana churna* 5gm with 1 tsp *Ghrut* and half tsp *Makshik Rasayane*, with proper Diet, Yoga and Lifestyle. During Follow up patient after 15 days shown the remarkable effect was seen by keeping the weight same i.e 74 kg which was same at the time of discharge ,while some mild pain was observed in right knee joint which only feels after excessive work.

CONCLUSION

A treatment plan that involved Deepan Pachan (digestive and metabolic enhancers), *Sarvanga Snehana* (full-body oleation), *Swedana* (therapeutic sweating),

Karma Basti (medicated enema), *Udvardhana* (Ayurvedic powder massage), and *Shaman Chikitsa* (palliative therapy), along with a proper diet, yoga, and lifestyle modifications, led to a significant weight reduction from 88 kg to 74 kg within one month. This comprehensive approach demonstrated remarkable effectiveness in managing *Sthoulya* (obesity) by addressing both physical and metabolic aspects.

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