



Controlled clinical study of Chitrakadi Gutika in the Management of Medoroga

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Abstract

Sthaulya (obesity) has become so common in the World's population that it is beginning to replace undernutrition and infectious diseases as the most significant contributor to ill health. It exacerbates a large number of health-related problems, both independently and in association with other diseases. The main objective of study to evaluate effect of *Chitrakadi Gutika* with in the patients of *Sthaulya*. For this purpose 40 patients of *Sthaulya* were selected. Among these, 40 patients of *Sthaulya* were treated with *Chitrakadi Gutika* compound administered orally in the dose of 250 mg once a day with *Tambul Lavang* before meal at morning. The duration of the treatment was 3 month with follow-up for 15 days. Analysis of overall effects of showed that *Chitrakadi gutika* compound provided markedly better reduction in weight, BMI and other signs and symptoms in the patients of obesity.

Keywords: Obesity, *Sthaulya*, Meda, Non – communicable disease, Over nourishment, *Apatarpan* (reducing therapy).

Introduction-

It is universally accepted fact that good health plays an important role in the human development. According to concept of Ayurveda good health is based on equilibrium of *dosha*, *Agni Dhatu*, *Mala*. Further more in Ayurveda there is a clear cut emphasis on maintaining physical, mental, spiritual well being as apart of good health. (1) Ayurveda is being increasingly accepted by world for its relevance and adaptability to modern times. An important concept of Ayurveda is each individual is genetically different. This offers him a totally specific constitution. (2)

In modern era with continuous changing lifestyle and involvement, man has become the victim of many diseases caused by unwholesome dietary habits and deranged lifestyle. Medoroga is one between these major diseases. In ayurvedic researches of later age identified the risk associated with Obesity and used the term Medoroga to explain disorders appearing *Daurbalya*, *Sarvkriya Asamartha*, *Alpaprana*, *Atinidra*, *Kshudha Atiyoga*, and *Pipasa Atiyoga*. (3)

Acharya Charaka has clearly defined the *Medoroga* in *Ashtaninditiya Adhyaaya*. He has narrated that a person is called obese who has increased fat and muscles and has pedunculus buttocks, abdomen and breast and suffer from deficient metabolism and energy. *Acharya Charaka* further explains that continuous intake of *Guru Aahaar* and *Madhur rasa* aggravates *kapha dosha* and *meda dhatu* due to similar properties *meda* obstructs the *strotas*. Because of this obstruction *Vata* moving in *koshtha* becomes hyperactive and stimulates *Agni*. This *Agni* digests food rapidly and vitiated *Vata* absorb it rapidly so person requires frequent and heavy food resulting in *Medoroga*. (4)

Due to vitiation of *Meda dhatu*. The term *Medoroga* first used by *Acharya Madhav*. Various clinical features described as *Medoroga* such as *kshudhrashwas*, Changing food habits, sedentary work, Stressful environment etc., are the rewards of economic growth. One side of life is happy with decreased physical activity and fats wealthy tasty food but other side showing chronic Lifestyle disorders like Diabetes Mellitus, Hypertension, Cancer, and Ischemic Heart Disease. Obesity is to be a major risk factor for these disease. (5) In Maharashtra prevalence rate of Obesity is 18.8% in women vs 18.7% in men, approximately it is 18%. (6)

Obesity is often expressed in terms of body mass index but pathophysiologically may be considered to be present when sufficient body fat to be accumulated to adversely affect health. increased consumption of energy dense food, less regular eating patterns, shorter meals and increased snacking may also contribute in Obesity. (7) Ayurveda emphasizes that the successful treatment of any disease is not only relies upon the proper remedy but proper diet and proper way of life is similarly important. by following *Ahara Vihara* as described in Ayurveda it is easy to stop himself from weight difficulties and reduces its dangers of various complications. (8) In Ayurveda there are many drugs which are used in the management of *Medoroga*, for *Medoroga Shodhana* and *Shamana* treatment is given. *Chitrakadi Gutika* is a *Shamana* treatment in *Medoroga* and also it is cost effective and ingredients are easily available. Hence the present study is intended to evaluate the efficacy of *Chitrakadi Gutika* in *Medoroga*.

MATERIAL AND METHODS:

Material: Table no 1 represents the contents *Chitrakadi Gutika*. The latin name of drugs, the parts used and the *Rasa*, *Virya* and *Vipaka* of the drugs are mentioned in the table. The reference of *Chitrakadi Gutika* is *Abhinav chintamani Medorognirupano Adhaya* 39, shloka no. 28-32

Table No. 1. Contents of Chitrakadi Gutika-

S. N.	Drug Name	Latin Name	Family	Guna	PartsUsed	Karma	Ratio
1	Chitraka	Plumbagozeylanica	Plumbaginaceae	Ruksha,Tikshna,Ushna	Mulatwak	Lekhana Deepana Pachanaa	50gm
2	Pippali	Piper longum	Piperaceae	Laghu, snigdha,	Phala	Deepana	50gm
3	Pippalimula	Piper longum	Piperaceae	Laghu Ruksha	Mula	Bhedana Deepana, Pachanaa	50gm
4	Shunti	Zingiber officinalis	Zinziberaceae	Laghu Snigdha	Kanda	DeepanaRochan	50gm
5	Marich	Piper nigrum	Piperaceae	Laghu Tikshna	Phala	Deepana	50gm
6	Saindhav	Rock salt	Lavanvarg	Guru, SnigdhaTikshna	Saindhav	DeepanaPachana Rochan	50gm
7	Saurvarchal	Black Salt	Lavanvarg	Laghu Vishda Sukshma Snigdha	Saurvarchal	DeepanaPachana Rochan	50gm
8	Sambhar	Lake Salt	Lavanvarg	Laghu sukshma,Abhishy andi	Sambhar	Bhedniya	50gm
9	Samudara	Sodiamuras	Lavanvarg	Guru	Samudara	Deepana,Bhedan	50gm
10	Sauchar	Ammoniu mchlor ide	Lavanvarg	Laghu Ushna Tikshna	Samudara	DeepanaPachana Rochan	50gm
11	Jatiphal	Myristica fragrans	Myristicaceae	laghu Tikshna	Phala	DeepanaRochana	50gm
12	Chavya	Piper retrofractrum	Piperaceae	laghu Ruksha	Mula	DeepanaPachana	50gm
13	Lavang	Syzygiumaromaticum	Myrtaceae	Laghu Snigdha	Pushpa kalika	Ruhcya Deepana Pachanaa	50gm
14	Hingu	Ferula narthrex	Umbelliferae	laghu SnighdhaTikshna	Niryas	Bhedniya,Balya	50gm
15	Jirak	Cuminumcyminum	MyristicaceaeE	Laghu Ruksha	Beeja	Deepana Pachanaa	50gm
16	Sarjikshar	impure carbonateof soda	Ksharvarga	laghu,Tikshna	Kshara	Deepana ,Pachanaa	50gm
17	Jatipatrak	Myristicafragrans	Myristicaceae	laghu Tikshna	Patra	DeepanaRochana	50 gm
18	Twaka	Cinnamomum zeylanicu m	Lauraceae	Katu Tikta Madhura	Twaka	Balya	50gm
19	Ela	Elettaria cardamom um	Scitaminae	Laghu Ruksha	Beeja	Deepana,Rochana	50 gm
20	Gajapippali	Piper chaba hunter	Piperaceae	Laghu, snigdhaTikshna	Phala	Deepana	50gm
21	Ajmoda	Carum roxburghi anum	Umbelliferae	Laghu Ruksh Tikshna	Beeja	Deepana	50gm
22	Kushta	Saussurealappa	Asteraceae	Laghu Ruksha	Mula	Lekhaniy	50gm
24	Matulungaarasa	Citrus medica	Rutaceae	laghu snighdha	Swarasa	Deepana Anulomana	As per Need
25	Adraka swarasa	Zinziber officinalis	Scitaminae	Guru, RukshaTikshna	Swarasa	DeepanaBhedana	As per Need
26	Dadimbswarasa	Punica granatum	Punicaceae	Laghu Snigdha	Swarasa	Tridosaha ,Hrudya	As per Need

CRITERIA FOR SELECTION OF STUDY SUBJECTS**Inclusion Criteria:**

1. Patient of age group 21-60 irrespective of their gender.

2. .Patients of Medoroga as per signs and symptoms mention in ayurvedicSamhita.
3. .BMI more than 25 kg/m² and less than 40 kg/m²

Exclusion Criteria:

1. .Pregnant womens or lactating mothers.
2. Acute life threatening conditions like cancer and post MI
3. Obesity due to other conditions like Endocrinal Diseases
4. .Patient's diagnosed with Diabetes Mellitus type 2, Immunological Diseases and Hypertension.

Withdrawal Criteria:

1. Patient not willing to continue treatment
2. Patient failed to report for the follow-up or irregularmedications.

CRITERIA FOR ASSESSMENT:**Subjective Criteria –**

The details of the score adopted for the main signs and symptoms in present study were as follows:

- 1)Kshudrashwas
- 2)Nidradhikya
- 3)Trishnadhikya
- 4)Daurbalya
- 5)Kshudhadhikya

Table No 2 Kshudraswas:

1	Dyspnoea absent.	0
2	Dyspnea after heavy works but relived soon & up to tolerance.	1
3	Dyspnoea after little work but relived soon & up to tolerance.	2
4	Dyspnoea in resting condition.	3

Table No 3 Nidhradhikya

1	6 to 8 hours/day	0
2	Sleep up to 8 hrs/ day with Anga Gaurav.	1
3	Sleep up to 8 hrs/ with Anga Gaurav & Jrimbha.	2
4	Sleep up to 8 hrs/ with Anga Gaurav & Jrimbha.	3

Table No 4 Trishnadhikya

1	Normal Thirst.	0
2	Up to 1 lit excess intake of water.	1
3	1-2 lit excess intake of water.	2
4	2-3 lit excess intake of water.	3

Table No 5 Daurbalya

1	Can Do Routine Exercise	0
2	Can do moderate exercise without difficulty	1
3	Can do only mild exercise.	2
4	Can do only mild exercise with very difficulty.	3

Table No 6 Kshudhadhikya

1	Samyak Kshudha	0
2	Patient feels hunger after 6 hours in meals and taking some refreshment it is relived.	1
3	Patient feels hunger after 4 hours in meals and taking some refreshment it is relived.	2
4	After every two and half hours patient feel hunger.	3

The assessment was done before starting the treatment and after 90 days of treatment i.e. at the completion of the treatment and the improvement was assessed on the basis of percentage relief and statistical evaluations.

Objective Criteria:

It was assessed on the basis of Body wt. BMI and other body parameters before starting the treatment and after completion of treatment in terms of percentage relief and statistical evaluations. For the present study the girth measurements of certain regions using measuring tape before and after the treatment was also carried out. The girth measurement of following areas where generally the adiposity is found more, was taken:

1. Body mass index
2. Body Weight
3. Waist to hip ratio.
4. Abdominal girth

Table No 7 Objective Criteria:

Parameters	0	1	2	3
BMI	>25	25-30	30-35	35-40
W/H Ratio	>1.0	1.0	1.0-1.5	1.6-2.0
Abdominal Girth	25-35 inch	36-40 inch	41-45 inch	46-50 inch

In case of all circumference measurements, the mean values were taken before and after treatment. The body wt. was also taken before and after treatment.

Lab Parameters:

1. Serum Cholesterol
2. Serum Triglyceride
3. HDL
4. LDL
5. CBC

Table No 8 Lab Parameters

Lab. Parameters	0	1	2	3
Sr. Cholesterol	200-230	231-270	271-300	301-350
Sr. Triglyceride	150-199	200-240	241-280	281-320
HDL	>60	51-60	41-50	35-40
LDL	130-150	151-170	171-190	191-210

OBSERVATIONS, RESULT AND STATISTICS-**Wilcoxon Signed Rank Test for Chitrakadi Gutika subjective Criteria**

Table No: 9 Wilcoxon Signed Rank Test within the Chitrakadi Gutika for Kshudrashwas:

Kshudrashwas		Mean	Median	SD	SE	WilcoxonW	P-Value	% Effect	Result
Chitrakadi Gutika	BT	2.48	2.00	0.51	0.08	-5.292	0.0000001	37.78	Sig
	AT	1.54	2.00	0.42	0.07				

From above table, we can observe that, P-Value for chitrakadi Gutika is less than 0.05. Hence, we can conclude that, effect observed Chitrakadi Gutika is significant.

Table No: 10 Wilcoxon Signed Rank Test of Chitrakadi Gutika for Nidradhikya:

Nidra		Mean	Median	SD	SE	WilcoxonW	P-Value	% Effect	Result
Chitrakadi Gutika	BT	2.25	2.00	0.67	0.11	-4.564	0.0000050	28.89	Sig
	AT	1.60	2.00	0.50	0.08				

Since observations are on ordinal scale (gradations), we have used Wilcoxon Signed Rank Test to test efficacy in Chitrakadi Gutika. From above table, we can observe that, P-Value for Chitrakadi Gutika less than 0.05. Hence, we can conclude that, effect observed in chitrakadi Gutika significant.

Table No: 11. Wilcoxon Signed Rank Test in Chitrakadi Gutika for Trishnadhikya:

Trishna		Mean	Median	SD	SE	WilcoxonW	P-Value	% Effect	Result
Chitrakadi Gutika	BT	2.15	2.00	0.74	0.12	-4.181	0.0000290	29.07	Sig
	AT	1.53	2.00	0.51	0.08				

Since observations are on ordinal scale (gradations), we have used Wilcoxon Signed Rank Test to test efficacy in Chitrakadi Gutika. From above table, we can observe that, P-Value for Chitrakadi Gutika is less than 0.05. Hence, we can conclude that, effect observed Chitrakadi Gutika is significant.

Table No: 12 Wilcoxon Signed Rank Test in Chitrakadi Gutika for Daurbalya-

Daurbalya		Mean	Median	SD	SE	WilcoxonW	P-Value	% Effect	Result
Chitrakadi Gutika	BT	2.20	2.00	0.69	0.11	-3.631	0.0002822	28.41	Sig
	AT	1.58	2.00	0.50	0.08				

Since observations are on ordinal scale (gradations), we have used Wilcoxon Signed Rank Test to test efficacy in Chitrakadi Gutika. From above table, we can observe that, P-Value for Chitrakadi Gutika is less than 0.05. Hence, we can conclude that, effect observed in Chitrakadi Gutika is significant.

Table No: 13 Wilcoxon Signed Rank Test Chitrakadi Gutika for Kshudadhikya:

Kshudha		Mean	Median	SD	SE	WilcoxonW	P-Value	% Effect	Result
Chitrakadi Gutika	BT	2.23	2.00	0.66	0.10	-4.099	0.0000415	40.13	Sig
	AT	1.33	2.00	0.50	0.08				

Since observations are on ordinal scale (gradations), we have used Wilcoxon Signed Rank Test to test efficacy in Chitrakadi Gutika. From above table, we can observe that, P-Value for Chitrakadi Gutika less than 0.05. Hence, we can conclude that, effect observed in Chitrakadi Gutika is significant.

Wilcoxon Signed Rank Test in Chitrakadi Gutika for labParameters**Table No 14 Wilcoxon Signed Rank Test in Chitrakadi Gutika for Serum cholesterol:**

Serum cholesterol		Mean	Median	SD	SE	WilcoxonW	P-Value	%Effect	Result
Chitrakadi Gutika	BT	1.75	2.00	0.67	0.11	-4.066	0.0000478	31.43	Sig
	AT	1.20	1.00	0.44	0.07				

Since observations are on ordinal scale (gradations), we have used Wilcoxon Signed Rank Test to test efficacy in chitrakadi Gutika . From above table, we can observe that, P-Value for chitrakadi Gutika is less than 0.05. Hence, we can conclude that, effect observed in chitrakadi Gutika is significant.

Table No 15: Wilcoxon Signed Rank Test in Chitrakadi Gutika for Serum Triglyceride:

Serum Triglycerides		Mean	Median	SD	SE	WilcoxonW	P-Value	%Effect	Result
Chitrakadi gutika	BT	1.65	2.00	0.62	0.10	-3.755	0.0001736	38.18	Sig
	AT	1.02	1.00	0.38	0.06				

Since observations are on ordinal scale (gradations), we have used Wilcoxon Signed Rank Test to test efficacy in Chitrakadi Gutika. From above table, we can observe that, P-Value for Chitrakadi Gutika is less than 0.05. Hence, we can conclude that, effect observed in Chitrakadi Gutika is significant.

Table No 16: Wilcoxon Signed Rank Test Chitrakadi gutika for Serum HDL

HDL		Mean	Median	SD	SE	WilcoxonW	P-Value	% Effect	Result
Chitrakadi Gutika	BT	1.68	2.00	0.62	0.10	-1.146	0.338	7.46	NS
	AT	1.55	2.00	0.55	0.09				

Since observations are on ordinal scale (gradations), we have used Wilcoxon Signed Rank Test to test efficacy in Chitrakadi Gutika .From above table, we can observe that, P-Value for chitrakadi Gutika is greater than 0.05. Hence, we can conclude that, effect observed is not significant.

Table No 17: Wilcoxon Signed Rank Test Chitrakadi Gutika for Serum LDL

LDL		Mean	Median	SD	SE	WilcoxonW	P-Value	% Effect	Result
Chitrakadi gutika	BT	1.80	2.00	0.72	0.11	-1.185	0.286	5.56	NS
	AT	1.70	2.00	0.72	0.11				

Since observations are on ordinal scale (gradations), we have used Wilcoxon Signed Rank Test to test efficacy in Chitrakadi gutika .From above table, we can observe that, P-Value for Chitrakadi Gutika is greater than 0.05. Hence, we can conclude that, effect observed in Chitrakadi gutika is not significant.

Paired t Test Chitrakadi Gutika for Objective Criteria:**Table No 18: Paired t Test Chitrakadi Gutika in for Body weight:**

Body weight		Mean	N	SD	SE	t- Value	P-Value	% Effect	Result
Chitrakadi gutika	BT	77.65	40	6.92	1.09	20.644	0.000	6.58	Sig
	AT	72.54	40	6.85	1.08				

Since observations are quantitative, we have used Paired t- Test to test efficacy in chitrakadi gutika .From above table, we can observe that, P-Value for chitrakadi gutika is less than 0.05. Hence, we can conclude that, and effect observed in chitrakadi gutika is significant.

Table No 19: Paired t Test in Chitrakadi Gutika for BMI

BMI		Mean	N	SD	SE	t- Value	P-Value	% Effect	Result
Chitrakadi Gutika	BT	31.45	40	2.42	0.38	17.305	0.000	6.69	Sig
	AT	29.35	40	2.34	0.37				

Since observations are quantitative, we have used Paired t- Test to test efficacy in chitrakadi gutika. From above table, we can observe that, P-Value for chitrakadi gutika is less than 0.05. Hence, we can conclude that, effect observed in chitrakadi gutika is significant.

Table No 20: Paired t Test for Chitrakadi Gutika for Waist to Hip ratio-

Waist to hip ratio		Mean	N	SD	SE	t- Value	P- Value	% Effect	Result
Chitrakadi Gutika	BT	1.14	40	0.14	0.02	8.088	0.000	5.47	Sig
	AT	1.08	40	0.14	0.02				

Since observations are quantitative, we have used Paired t- Test to test efficacy in chitrakadi Gutika . From above table, we can observe that, P-Value for chitrakadi gutika is less than 0.05. Hence, we can conclude that, effect observed in chitrakadi gutika is significant.

Table No 21: Paired t Test Chitrakadi Gutika for Abdominal girth

Abdominal girth		Mean	N	SD	SE	t- Value	P-Value	%Effect	Result
Chitrakadi gutika	BT	111.89	40	8.22	1.30	20.472	0.000	5.80	Sig
	AT	105.40	40	8.25	1.31				

Since observations are quantitative, we have used Paired t- Test to test efficacy in chitrakadi gutika. From above table, we can observe that, P-Value for chitrakadi gutika is less than 0.05. Hence, we can conclude that, effect observed in chitrakadi gutika is significant.

Table No 22: Effect of Subjective Parameter in Chitrakadi Gutika %

Parameter	Chitrakadi gutika
Kshudrashwas	37.78
Nidra	28.89
Trishna	29.07
Daurbalya	28.41
Kshudha	40.13
Average % Effect	32.86

Table No 20: Effect of Objective Parameter in Chitrakadi Gutika in %

Parameter	Chitrakadi gutika
Serum cholesterol	31.43
Serum triglycerides	38.18
HDL	7.46
LDL	5.56
Body weight	6.58
BMI	6.69
Waist to hip ratio	5.47
Abdominal girth	5.80
Average % Effect	9.86

Table No 21: Overall Effect of Therapy

Overall Effect	Chitrakadi gutika	
	N	%
Marked Improvement	0	0.00%

Moderate Improvement	2	5.00%
Mild Improvement	24	60.00%
No Change	14	35.00%
TOTAL	40	100.00%

In this study “Chitrakadi Gutika is more effective in the management of Medoroga” was postulated when statistically analysed.

DISCUSSION-

The signs seen in Obesity like fat deposition at lower limbs, upper limbs, Gluteal region, Abdominal and Breast region resembles to meda depositionat Sphika, Udara, Sthana Pradesh in Medoroga so it can be concluded thatMedoroga can be correlate with Obesity.

The present study entitled a study “controlled clinical study of the effect of Chitrakadi Gutika in the management of Medoroga”Was done on 40 patient.

1. BODY WEIGHT:

Chitrakadi Gutika 6.58 % be considered as more efficacious in reducing Body Weight

2. BMI:

Chitrakadi Gutika 6.69% be considered as more efficacious in reducing BMI

3. WAIST HIP RATIO:

Chitrakadi Gutika 5.47 % be considered as more efficacious in reducing Waist Hip Ratio

4. ABDOMINAL GIRTH:

Chitrakadi Gutika 5.80 % be considered as more efficacious in reducing Abdominal Girth

LAB PARAMETERS:

1. SERUM CHOLESTEROL:

Chitrakadi Gutika 31.43 % be considered as more efficacious in reducing Serum Cholesterol

2. SERUM TRIGYCERIDES:

Chitrakadi Gutika 38.18% be considered as more efficacious in reducing Serum Triglyceridel .

3. HDL:

Chitrakadi Gutika7.46 %

4. LDL:

Chitrakadi Gutika 5.56 %

5. CBC:

Statistically there is no difference between before and after observation of CBC.

Chitrakadi Gutika is more effective in the management of Medoroga” was postulated when statistically analysed.

MODE OF ACTION OF CHITRAKADI GUTIKA:

- The total effect of Chitrakadi Gutika is Vatakaphaghna Most of the drugs of Chitrakadi Gutika has properties of Deepana, Pachanaa.It is Tikt, Katu in Rasa, Laghu, Ruksha in Guna, and Katu in Vipaka, Ushna veerya thus pacifies the vitiated Kapha dosha which is dominant in the pathogenesis of Medoroga.It also diminishes the excessively produced Sama Rasa because Chitrakadi Vati is having property of Rasagata Amapachana due to its Tikt Rasa.Jeerak, Jatiphal, Jatipatrak, Twak has the properties Of Vatanuloman due to its Ushna Veerya. Hence obstruction of the passage by Meda is removed, the movement of Vata Dosha becomes normal.

- All the Lavan has property of Deepana, Pachana, which helps to increase JatharAgni .And reduces the Strotorodha. Samudra and Sambhar lavan has bhedniya property.Yavakshara act as a medohara due to its Laghu, Ruksha, Tikshna guna, and Ushna virya and katu vipaka.Sunthi and marich has strotoShodhana property due to its Ushna virya and katu vipaka.
- Ela, Matulunga swarasa has Madhur rasa, sheeta virya and Madhura vipaka which helps for Trishnanigrahan.Pippali and Chitrak acts as rasayana when taken in low dose.Teekshna guna of Chitraka increases MedodhatvAgni thus leads to Pachana of excess Medodhatu.
- This churna bring about augmentation of the digestive fire, leading to proper formation of Rasadi dhatu.The overall effect of Chitrakadi Gutika is VataKaphanashaka, Vatanuloman, Deepanaiya, Pachanaiya which helps in Aama Pachanaa and and dhatwagni sandhukshna. Bhediya property which removes Strotoavrodha.

CONCLUSION-

The present clinical study has been undertaken to Controlled Clinical Study of the Chitrakadi Gutika in the management of Medoroga.

Conclusion of this study is as follows:

- 1)Chitrakadi Gutika more effective in reducing symptoms Kshudrashwas and Kshudadhikya
- 2)Chitrakadi Gutika more effective in reducing objective parameters.
- 3)Chitrakadi Gutika effective in Medoroga.
- 4) The drug are safe as there were no side effect observed during treatment.
- 5) In this study, Chitrkadi Gutika is more effective .Because, we found Chitrakadi Gutika was more significant result in reducing the symptoms of Medoroga ..

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