ISSN: 2322 - 0902 (P)
ISSN: 2322 - 0910 (O)

International Journal of Ayurveda and Pharma Research

Research Article

CLINICAL EVALUATION OF EFFICACY OF *NAVAKA GUGGULU* AND *TRIPHALA KWATHA* IN THE MANAGEMENT OF *MEDOROGA* WITH SPECIAL REFERENCE TO OBESITY

Udai Raj Saroj[1], Ratna Paraste [2], Binod Kumar Singh[3]*

[1]Associate Professor, *[3]Ph.D Scholar, P.G. Department of Kayachikitsa, NIA, Jaipur India.

[2]Ayurvedic Medical Officer, Govt. Ayurvedic Dispensary, Khader, Vidisha, Madhya Pradesh

ABSTRACT

Overweight and obesity are major risk factors for a number of chronic diseases, including diabetes, cardiovascular diseases and hypertension. Once considered a problem only in high income countries, overweight and obesity are now dramatically on the rise in low and middle-income countries, particularly in urban settings. A person with a BMI of 30 or more is generally considered obese. A person with a BMI equal to or more than 25 is considered overweight. *Medodhatuvridhi* causes *Snigdhata* of *Shareera*, *Udara-parshvavridhi, Kasa, Shwasa, Hikka* and *Daurgandhya* of *Shareera*. The *Medovaha Srotas moola* means the organs closely related to the functions of *Medodhatu* or the important sites related to beginning or ending of the channels of *Medodhatu*. The Acharya (*Charaka, Sushruta* and *Vagbhata*) considered *Vrikka* as *Moola* of *Medovaha Srotas* and also considered *Vapavahana*, *Kati* and *Mamsa* as second *Moola* respectively. The present study was conducted on 30 clinically diagnosed patients of '*Medoroga*' (Obesity). The patients of '*Medoroga*' (Obesity) were randomly divided into three groups of 10 patients in each. In Group A, 10 patients were treated with '*Navakaguggulu'* 2 tab (each tab. of 500mg) three times a day with lukewarm water for 30 days. In Group B, 10 patients were treated with '*Triphala Kwatha'* 50ml two times a day (morning and evening) for 30 days and in Group C, 10 patients were treated with '*Navakaguggulu'* 2 tab (each tab. of 500 mg) three times a day with lukewarm water and '*Triphala Kwatha*' 50ml two times a day (morning and evening) for 30 days. After completion of trial, Group C has shown the best result followed by Group A and B while in lab parameters Group A has shown highly significant result only in Triglyceride level. Similarly Group Cprovided better results in majority of the parameters.

KEYWORDS: Obesity, *Medoroga, Navakaguggulu, Triphala Kwatha.*

INTRODUCTION

Medoroga is a condition in which there is excessive accumulation of *Meda Dhatu* in the body. Acharya Charaka has described it in the context of *Sthaulya* and has included *Atisthoola Purusha* in *Ashtanindita Purush*[1]. Overweight and obesity are major risk factors for a number of chronic diseases, including diabetes, cardiovascular diseases and hypertension. The prevalence of obesity has nearly tripled during the past 40 years worldwide[2]. An additional 39% of adults worldwide are overweight (BMI, 25 to 29). Once considered a problem only in high income countries, overweight and obesity are now dramatically on the rise in low and middle-income countries, particularly in urban settings. According to the W.H.O., overweight and obesity are the fifth leading risk for global deaths[3]. Overweight and obesity are linked to more deaths worldwide than underweight. Globally there are more people who are obese than underweight and this occurs in every region except parts of sub-Saharan Africa and Asia. Obesity has taken place of an epidemic, still majority of people are not aware of the factors that welcomes this problem and the results that are obtained after one gets into this problem.

Aims and Objectives of Study

- Clinical evaluation of the efficacy of *'Navakaguggulu'* in the management of *'Medoroga'* (Obesity).
- Clinical evaluation of theefficacy of *'Triphala Kwatha'* in the management of *'Medoroga'* (Obesity).
- To evaluate the combined efficacy of *'Navakaguggulu'* and *'Triphala kwatha'* in the management of *'Medoroga'* (Obesity).

Ethical clearance: This study was approved by Institutional Ethical Committee (IEC) of National Institute of Ayurveda, Jaipur vide letter No.IEC

/ACA/2017/21; dated 26.04.2017, before starting the clinical trial on patients of *Medoroga.*

Registration: This study was registered in Clinical Trial Registry of India (CTRI www.ctri.nic.in) with reference No– REF/2018/09/021609

MATERIAL AND METHODS

Selection of Case: The study was conducted on 30 clinically diagnosed patients of '*Medoroga*' (Obesity) selected from Arogyashala OPD & IPD of Department of Kayachikitsa, National Institute of Ayurveda, Jaipur (Rajasthan) and SSB Hospital, Jaipur.

Inclusion Criteria

- Patient willing to signature the consent form for the clinical trial.
- The patients between the age group of 20 to 60 years of age, irrespective of sex and socio-economic status.
- Patient having sign and symptoms of '*Medoroga*' (Obesity).
- Patient with BMI 30 or more.

Exclusion Criteria

- Patient not willing to signature the consent form for the clinical trial.
- Patients with complicated and chronic disorder like Nephrotic syndrome, Hypothyroidism, Jaundice, Hepatitis, chronic infections and other serious diseases.
- Patient having BMI below 30 and above 40.
- Patient having obesity due to secondary reason such as drug induced or hormonal imbalance.
- Pregnant women and lactating mothers.

Criteria for Withdrawal

- During the course of trial if any serious condition or any serious adverse effects occur which require urgent treatment.
- Patients himself / herself want to withdraw from the clinical trial.

Study Design: It was a single centre, Open label, Randomized, interventional, clinical trial.

Administration of Drug: Clinically diagnosed and registered patients of '*Medoroga*' (Obesity) were randomly divided into three groups. Each group had 10 patients.

Group A: 10 patients were treated with '*Navaka Guggulu*' 2 tab (each tab of 500 mg) three times a day with lukewarm water for 30 days.

Group B: 10 patients were treated with '*Triphala Kwatha*' 50ml two times a day (morning and evening) for 30 days.

Group C: 10 patients were treated with '*Navaka Guggulu*' 2 tab (each tab. of 500 mg) three times a day with lukewarm water and '*Triphala Kwatha*' 50ml two times a day (morning and evening) for 30 days.

Preparation of Drugs

Table 1: Contents of the '*Navaka Guggulu*[4]

S. No.	Drugs	Latin Name	Parts Used	Quantity
1.	*Shunthi*	*Zingiber officinale*	Rhizome	1 Part
2.	*Maricha*	*Piper nigrum*	Fruit	1 Part
3.	*Pippali*	*Piper longum*	Fruit	1 Part
4.	*Chitraka*	*Plumbago zeylanica*	Root	1 Part
5.	*Musta*	*Cyperus rotundus*	Rhizome	1 Part
6.	*Haritaki*	*Terminalia chebula*	Fruit	1 Part
7.	*Bibhitaka*	*Terminalia bellirica*	Fruit	1 Part
8.	*Amalaki*	*Emblica officinalis*	Fruit	1 Part
9.	*Vidanga*	*Embelia ribes*	Fruit	1 Part
10.	*Shuddha Guggulu*	*Commiphora wightii*	Resin	9Part

Table 2: Contents of *Triphala Kwatha*[5,6] *(Kwatha Dravya – Yavakut)*

S.N.	Drugs	Latin Name	Parts Used	Quantity
1.	*Haritaki*	*Terminalia chebula*	*Phala*	1 Part
2.	*Bibhitaka*	*Terminalia bellirica*	*Phala*	1 Part
3.	*Amalaki*	*Emblica officinalis*	*Phala*	1 Part

Both of these drugs were prepared in GMP certified NIA *Rasayanshala* (Pharmacy)

Method of Preparation of Trial Drugs

***Navaka Guggulu*:** After *Shodhana, Sodhit guggulu* was heated till it became thick liquid and was added with powder of above mentioned nine medicines which were taken in equal amount. Then it was mixed properly and was put out from flame and was stroked properly in *Kharala* or *Kalwa yantra* and the process was continued for few hours. Then 500mg *Vati* or tablets were made and were kept in air tight containers.

***Triphala Kwatha*:** 12gm of *Triphalayavakuta churna* was kept in a vessel with 200ml of water. Then it was boiled on slow flame *(Mandaagnipaka)* without covering the mouth of vessel and was reduced till quantity became 1/4 part i.e., 50ml. It was filtered with clean cotton cloth and filtered liquid was collected as *Triphala kwatha.*

Dose

Navaka Guggulu 2 tab (each tab of 500mg) with lukewarm water, three times a day for 30 days.

Triphala Kwatha 50ml (prepared by 12gm of *Kwatha Dravya*) two times a day (morning and evening) for 30 days.

Duration of Clinical Trial and Follow up Study

Duration of trial - 30 days.

Patients were followed up after 10days, after 20 days and after 30days.

Criteria for Assessment

During and after the trial patient were assessed on the following parameters

Subjective Parameters

All the registered patients of clinical trial were looked for any changes in their growing feeling of wellbeing or any improvement in the following sign and symptoms of *Medoroga*[7] (Obesity) after the course of therapy.

For subjective parameters following sign and symptoms were assessed:

1. *Atikshudha* (Excessive hunger)
2. *Atipipasa* (Excessive thirst)
3. *Utsaha Hani* (Lack of enthusiasm)
4. *Daurgandhya* (Unpleasant body odour)
5. *Swedadhikya* (Excessive sweating)
6. *Daurbalya* (Weakness)
7. *Gaurava* (Heaviness of body)
8. *Kricchravyavayata* (Difficulty in sexual intercourse)
9. *Alasya* (Lethargy)
10. *Atinidra* (Excessive sleep)
11. *UdarVriddhi* (Bulging of abdomen)
12. *Sphiksthulata (*Excessive fat accumulation in hip region)
13. *Kshudraswasa* (Dyspnoea on exertion)
14. *Ashaktahsarvakarmasu* (Inability to work)

Objective Parameters

1. BMI (According to WHO classification) [8]
2. Body weight
3. Waist circumference[9]
4. Waist-Hip ratio[10]
5. Waist and Height ratio[11]

Laboratory investigations

1. Complete blood count
2. Erythrocyte sedimentation Rate.
3. Fasting blood sugar/ Random blood sugar
4. Lipid profile
5. RFT (Serumcreatinine and blood urea)
6. LFT (SGOT, SGPT and Sr. Bilirubin)
7. Thyroid Profile (TSH)

Routine Examination & Assessment

The details of history and physical examination of patient were recorded as per the proforma. Clinical assessments were done on 1st day, after 10 days, 20 days and 30 days.

Assessment of Sign and Symptoms

Assessment of sign and symptoms were done by using Symptoms Rating Scale as following:

Table 3: Symptoms Rating Scale

Sr. No.	Severity	Grading
1.	Absent	0
2.	Mild	1
3.	Moderate	2
4.	Severe	3
5.	Very severe	4

RESULTS

All the results were calculated by using Software InStat GraphPad 3. For Nonparametric Data Wilcoxon matched-pairs signed ranks test is used while for Parametric Data Paired 't' Test is used and results were calculated in each group. For calculating the inter group comparison, one way ANOVA Test and Unpaired 't' test were used for non-parametric and parametric data respectively.

The results were considered as bellow.

Insignificant/ Non significant: $P > 0.05$

Significant: $P < 0.05$

Highly significant: $P < 0.01$, $P < 0.001$, $P < 0.0001$

Table 4: Effect of Therapy in Subjective Parameters (Wilcoxon matched paired signed ranks test)

Sr.No.	Symptoms	Group	Mean		Mean Diff.	% Relief	S.D.	S.E.	P Value	S
			B.T.	A.T.						
1	*Atikshudha*	A	1.300	0.300	1.00	76.92	0.8165	0.2582	0.0078	HS
		B	1.000	0.500	0.500	50	0.5272	0.1667	0.0313	S
		C	1.200	0.500	0.700	58.33	0.4830	0.1528	0.0078	HS
2	*Atipipasa*	A	1.300	0.500	0.800	61.53	0.7888	0.2494	0.0126	S
		B	0.600	0.200	0.400	66.66	0.5164	0.1633	0.0625	NS
		C	0.900	0.400	0.500	55.55	0.5270	0.1667	0.0313	S
3	*Utsahahani*	A	1.000	0.600	0.400	40	0.5164	0.1633	0.0625	NS
		B	0.600	0.400	0.200	33.33	0.4216	0.1333	0.2500	NS
		C	0.700	0.200	0.500	71.42	0.5270	0.1667	0.0313	S
4	*Dourgandhya*	A	0.800	0.500	0.300	37.5	0.4830	0.1528	0.1250	NS
		B	0.400	0.100	0.300	75	0.4830	0.1528	0.1250	NS
		C	0.700	0.200	0.500	71.42	0.5270	0.1667	0.0313	S
5	*Gaurav*	A	1.100	0.300	0.800	72.72	0.9189	0.2906	0.0313	S
		B	1.200	0.500	0.700	58.33	0.6749	0.2134	0.0156	S
		C	1.300	0.600	0.700	53.84	0.4830	0.1528	0.0078	HS
6	*Swedadhikya*	A	0.800	0.500	0.300	37.5	0.4830	0.1528	0.1250	NS
		B	0.700	0.300	0.400	57.14	0.5164	0.1633	0.0625	NS
		C	1.000	0.400	0.600	60	0.6992	0.2211	0.0313	S
7	*Daurbalya*	A	0.400	0.100	0.300	75	0.4838	0.1528	0.1250	NS
		B	0.500	0.100	0.400	80	0.5164	0.1633	0.1250	NS
		C	0.900	0.100	0.800	88.88	0.6325	0.200	0.0078	HS
8	*Alasya*	A	1.000	0.300	0.700	70	0.8233	0.2603	0.0313	S
		B	0.700	0.500	0.200	28.57	0.4216	0.1333	0.250	NS
		C	0.900	0.100	0.800	88,88	0.6325	0.200	0.0078	HS
9	*Atinidra*	A	0.700	0.200	0.500	71.42	0.5270	0.1667	0.0313	S
		B	0.800	0.300	0.500	62.5	0.5270	0.1667	0.0313	S
		C	1.100	0.200	0.900	81.81	0.5676	0.1795	0.0039	HS
10	*Udaravriddhi*	A	2.100	1.300	0.800	38.09	0.4216	0.1333	0.0039	HS
		B	2.200	1.200	1.000	45.45	0.4714	0.1491	0.0020	HS
		C	2.100	1.000	1.100	52.38	0.3162	0.1000	0.0010	HS
11	*Sphiksthulata*	A	2.200	1.400	0.800	36.36	0.4216	0.1333	0.0039	HS
		B	2.200	1.200	1.000	45.45	0.4714	0.1491	0.0020	HS
		C	2.000	1.200	0.800	40	0.4216	0.1333	0.0039	HS
12	*Kshudrashwasa*	A	1,200	0.500	0.700	58.33	0.8233	0.2603	0.0313	S
		B	1.100	0.400	0.700	63.63	0.4830	0.1528	0.0078	HS
		C	1.100	0.600	0.500	45.45	0.5270	0.1667	0.0313	S
13	*Ashaktahsarvakarmasu*	A	0.700	0.200	0.500	71.42	0.5270	0.1667	0.0313	S
		B	0.500	0.200	0.300	60	0.4830	0.1528	0.1250	NS
		C	0.600	0.400	0.200	33.33	0.4216	0.1333	0.2500	NS
14	*Kricchavyavayata*	A	0.300	0.200	0.100	33.33	0.3162	0.100	0.500	NS
		B	0.200	0.100	0.100	50	0.3162	0.1000	0.50	NS
		C	0.200	0.100	0.100	50	0.3162	0.100	.50	NS

(HS-Highlysignificant, S:significant, NS: Non-significant)

Table 5: Intergroup Comparison of Group A, Group B & Group C for Subjective Parameters: (K.W. Test)

Sr.No.	Symptoms	K.W.Statistic	P.Value	Significance
1	*Atikshudha*	2.488	0.2882	NS
2	*Atipipasa*	1.563	0.4577	NS
3	*Utsahahani*	*1.943*	0.3786	NS
4	*Dourgandhya*	*0.362,*	2.030	NS
5	*Gaurav*	*0.1933*	0.9079	NS
6	*Swedadhikya*	*1.058*	0.5813	NS
7	*Daurbalya*	*0.9999*	0.000	NS
8	*Alasya*	*4.803*	0.906	NS
9	*Atinidra*	*4.110*	0.1281	NS
10	*Udara vriddhi*	*4.581*	0.1012	NS
11	*Sphiksthulta*	*0.000*	0.9999	NS
12	*Kshudrashwasa*	*1.515*	0.4689	NS
13	*Ashaktahsarvakarmasu*	*0.9206*	0.6311	NS
14	*Kricchavyavayata*	*6032.*	0.490	NS

Table 6: Effect of Therapy in Anthropometric Parameters

Variable	Group	Mean		Mean Diff.	% Relief	S.D.	S.E.	P Value	T	Significance
		B.T.	A.T.							
Weight	A	83.900	82.340	1.560	1.859	0.5016	0.1586	<0.0001	9.836	HS
	B	81.500	79.210	2.290	2.809	0.4999	0.1581	0.0001	14.486	HS
	C	90.100	86.860	3.240	3.596	1.167	0.3691	0.0001	8.777	HS
BMI	A	34.002	33.372	0.6300	1.852	0.1925	0.06086	<0.0001	10.351	HS
	B	33.200	32.254	0.9460	2.849	0.2451	0.07752	0.0001	12.203	HS
	C	35.335	34.185	1.150	3.254	0.2427	0.07674	0.0001	14.986	HS
WC	A	99.000	98.111	1.556	1.571	0.5270	0.1757	0.0001	8.854	HS
	B	102.30	100.50	1.800	1.759	0.6325	0.2000	0.0001	9.000	HS
	C	109.30	107.00	2.300	2.104	1.418	0.4485	0.0033	5.129	HS
WHR	A	0.8940	0.8880	0.00600	0.671	0.00516	0.00163	0.0026	3.674	HS
	B	0.948	0.420	0006000	0.32	0008433	0.00266	.0255	2.20	S
	C	0.9520	0.9490	0.00300	0.3151	0.00483	0.00152	0.0406	1.964	S
WHtR	A	0.6250	0.6160	0.00900	1.44	0.00737	0.00233	0.0019	3.857	HS
	B	0..948	0.9420	0.00600	0.632	0.00843	0.00266	0.0255	2.250	S
	C	0.6560	0.6570	0.00100	0.152	0.02885	0.009123	0.1096	0.4576	NS

BMI= Body Mass Index, WC=Waist circumference, WHR=Waist hip Ratio, WHtR=Waist height Ratio

Table 7: Showing Effect of Inter Group comparisons in Anthropometric Parameters (ANOVA test)

Variable	P-Value	Significance
BMI	<0.0001	HS
Body weight	<0.0001	HS
Waist Circumference	0.2853	NS
Waist Hip Ratio	0.5422	NS
Waist Height Ratio	0.3234	NS

Table 8: Effect of Therapy in Objective Parameters: (One way ANOVA test)

Variable	Group	Mean		Mean Difference	% Relief	S.D.	S.E.	T Value	P Value	Sig
		B.T.	A.T.							
Cholesterol	A	210.94	202.08	8.860	4,21	24.298	7.684	1.153	0.1393	NS
	B	189.08	210.15	21.070	11.143	51.254	16.208	1.300	0.1130	NS
	C	186.64	183.23	3.410	1.827	36.554	11.560	0.2950	0.3873	NS
TG	A	165.40	123.41	41.990	25.38	42.023	13.289	3.160	0.0058	HS
	B	130.02	131.11	1.090	0.838	61.104	19.323	0.05641	0.4781	NS
	C	124.39	137.86	13.470	10.828	42.426	13.416	1.004	0.1708	NS
HDL	A	47.42	51.89	4.47	9.426	8.886	2.810	1.591	0.0731	NS
	B	54.780	59.020	4.240	7.740	15.653	4.950	0.8566	0.2070	NS
	C	48.430	46.710	1.720	3.551	14.820	4.687	0.3670	0.3610	NS

Table 9: Showing Effect of Inter Group comparisons of Objective Parameters

Variable	P- value	Significance
Serum Creatinine	0.3594	NS
Cholesterol	0.0138	S
Triglycerides	0.0333	S
HDL	0.3218	NS

DISCUSSION

Medoroga is described in Ayurveda under the caption of *Santarpanottha Vikara* (disease caused by over nourishment)[12]. *Medodhatu* is the site of metabolic disturbance in an obese individual. *Meda* increases due to excessive intake of *Sneha* and *Madhurarasa*[13]. *Medoroga* results due to *Shleshmavardhaka ahara* and *Vihara*, which causes production of *Amarasa* by suppressing *Jatharagni*. It further causes *Medo-dhatvagnimandya*, resulting in production of *Amameda.* It leads to excessive increase and accumulation of *Medodhatu*. It also causes *Medovahasroto-sanga*, which causes *Margavrodha* of *vayu*. These both factors lead to clinical presentation of *Medoroga*[14]. In the *Samprapti* of *Medoroga*, *Kapha* is main *Dosha* and *Meda* is main *Dushya*, while *Agnimandya* takes place at *Medodhatvagni* level[15]. Fortunately, the drugs *Navaka Guggulu* and *Triphala kwatha* fulfilled all these requirements. They helped in *Samprapti-vighatan*a of *Medoroga* either by their *Rasa, Guna, Virya, Vipaka* or *Karma* by acting at different levels i.e., *Dosha, Dushya, Agni* or *Srotas* and pacify the symptoms of *Medoroga*.

The mode of action of *Navaka Guggulu* on *Medoroga* can be explainedas follows.

On *Dosha*: *Navaka Guggulu* encounters *Vata* and *Kapha Dosha* by virtue of its *Katu-Rasa* dominance and *Ushna-Virya*. *Vatahara* action is also achieved by *Snigdha* property.

***On Dushya*:** *Meda* and *Kleda* are the chief culprits in *Medoroga. Katu-Rasa* performs *Medo-Kleda upshoshana* action. *Sthairya Guna* of *Madhura Rasa* combats *Sharira Shaithilya*. *Ushna-Virya* also helps in *Kleda* and *Meda Vilayana* action.

On *Agni & Ama*: *Katu-Rasa, Ushna-Virya* encounters *Dhatwagnimandya* and potentiates the weakened *Dhatwagni* and help in *Amapachana* thereby alleviates *Aparipakwa* and *Ama dhatu*.

On *Srotas:* Due to *Katu-Rasa*, all the involved channels are dilated i.e. "*Srotansi Vivrunoti*" action. *Katu-Rasa* and *Ushna-Virya* check over *Medovaha* and *Mamsavaha Srotodushti*. In nut cell in *Navaka Guggulu,* maximum ingredients have *Katu Rasa, Laghu, Ruksha* and *Ushna Virya*, *Katu Vipaka*, *Vata-Kaphashamaka, Karshana, Lekhaniya, Medorogahara, Amapachana, Dhatushoshana* properties, which normalize the state of *Agni*. Thus, regulated *Jatharagni*, checked the excessive growth and accumulation of *Medodhatu* and thereby causing *Lakshana Upshamana* of disease *Medoroga*. This might be due to the *Agnimahabhuta Pradhana (Su.Su.15/16*) and *Ushna, Virya, Dipana, Pachana* effects of *Navaka Guggulu* as claimed by our classics. *Charaka Samhita* also described long-term of the treatment for the disease of *Jirna* and *Atisthulata*.

Probable mode of action of *Triphala Kwatha*

Triphala has *Katu and Tikta rasa pradhana* so it is *Dipana, Pachana, Tridoshashamana* as well *as Lekhana* by virtue*.* It has mild purgative action which causes *Vata anulomana*, therefore, it is one of the best natural colon cleansers that play key role in *Vata pradhana samprapti vighatana* in *Kostha*. It stimulates *Jatharagni* and regulates the metabolism in our body by *Ama pachana*, that encourage the digestive system to work efficiently so that the fat taken in food can be consumed in proper manner and no unnecessary storage of fat can take place in the body. *Triphala* acts as *Rasayana* also, which leads to formation of optimal *Dhatu* and protects the body from injury due to vitiated *Dosha* that improves blood circulation, and increases immunity. Thus the drug appeared successful in breaking the *Dosha-Dushyasam murchana*. A previous study has shown that *Triphala* contain Gallic acid, which is a widely occurring phenolic compound of plant origin. Gallic acid is selected as a bioactive marker due to its easy availability, common presence in these fruits and as anti-obesity property. Gallic acid is found maximum in *Amalaki* (*Emblica officinalis*)[16].

In the present study all the groups were found to be providing relief in majority of subjective parameters. The data and statistical analysis has shown that both of the drugs are potent in controlling the major sign and symptoms of *Medoroga* and also lowering the level of body mass index (BMI), waist hip ratio (WHR) and lipid profile. Group C treated with *Navaka Guggulu* and *Triphala kwatha* has produced best result in subjective parameters, than Group A and Group B treated with either *Navaka Guggulu* or *Triphala Kwatha* respectively. Although on inter group comparison there was no significant difference in response between the groups. In all Anthropometric parameters, Group A has shown best result followed by Group B and Group C while in lab parameters Group A has shown highly significant result in only Triglyceride level. Overall, Group C

provided better results in majority of the parameters as the vitiated *Dosha* got eliminated thereby absorbed drug performed their action of *Samprapti Vighatana* at cellular level.

CONCLUSION

It can be concluded that *Navaka Guggulu* and *Triphala Kwatha* both are effective, safe and economical alternative for the management of *Medoroga.* Compendium of the clinical contrive is that *Navaka Guggulu* and *Triphala Kwatha* might have additive effect and can be used in combination or separately as a safe and effective 'Therapeutic Agents' in the management of *Medoroga.*

REFERENCES

1. Gaur B.L, Translator, Charaka Samhita of Agnivesa, Sutra Sthana, Ashtaninditiya Adhyaya, 21/3, First Ed. 2011, New Delhi: Rashtriya Ayurveda Vidyapeeth; p. 625.
2. Obesity and overweight fact sheet. Geneva: World Health Organization, 2016 (http://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight. opens in new tab)
3. World health Report '2002' Reducing Risk, Promoting health life avlable from bttps: www.who.int>whr 2002 cover illustration by Laura de Santis Design by marilyn Layout by WHO Graphics printed in france 2002/1466-serday 7000.
4. Yoga Ratnakara, with Vidyotini Hindi Commentary by Vaidya Shri Lakshmipati Shastri Ayurvedacharya, Edited by Bhishagratna Shri Brahmashankara Shastri, Published by Chaukhambha Publications, Varanasi, Year of reprint 2008
5. Gaur B.L, Translator, Charaka Samhita of Agnivesa, Sutra Sthana, Ashtaninditiya Adhyaya, 21/22, First Ed. 2011, New Delhi: Rashtriya Ayurveda Vidyapeeth; p. 633.
6. Sharangadhara. Vidyasager P. *Sharangadhara Samhita* with Dipika commentary of Adhamalla and Gudharthadipika commentary of Kashiramvaidya. Krishnadas Academy, Varanasi (India): 2000.
7. Madhavakar, Madhava Nidana, revised by Vijayarakshita and Kanthadatta 'Madhukosha' commentary and Vidyotini Hindi commentary by Ayuredacharya Shri Sudarshana Shashtri, Edited by Ayuredacharya Shri Yadunandana Upadhyaya, Published by Chaukhambha Publications, New Delhi, Edition 32, Year of reprint 2002.
8. BMI classification WHO, Retrieved 15 Feb 2014
9. Grundy SM, Cleeman JI, Saniels SR, et al. Diagnosis and Management of Metabolic Syndrome; An American Heart Association/National Heart, Lung and Blood Institute Scientific statement, Circulation, 2005, 112:2735-2752:
10. http:/whqlibdoc.who.int/publications/2011/9789241501491_eng.pdf.
11. Waist-Height Ratio Better than BMI for Gauging mortality, 18 June 2013, Retrieved 7 April 2016.
12. Gaur B.L, Translator, Charaka Samhita of Agnivesa, Sutra Sthana, Santarpaniya Adhyaya, 23/6, First Ed. 2011, New Delhi: Rashtriya Ayurveda Vidyapeeth; p. 662.
13. Shukla VD, Tripathi RD, editors. Charaka samhita of Agnivesh, elaborated by Charaka and Drudhabala with Vaidyamanorama Hindi Commentary, Reprint Delhi, Chaukhanba Sanskrit Pratisthan, 2000. p.430.
14. Madhva Nidana, Vidyotini Commentary by Sudarshan Shastri, Reprint edition 2010, Varanasi: Chaukhambha Prakashan, Part- II, Chapter- 34, Versus- 2. p. 35.
15. Sharma AK, Kayachikitsa, Vol-III. Varansi: Chaukhamba Publishers; 2010. p.170.
16. www.triphalapowdrebenefits.com/triphala-churna/cited on 13/05/2015

Cite this article as:
Udai Raj Saroj, Ratna Paraste, Binod Kumar Singh. Clinical Evaluation of Efficacy of Navaka Guggulu and Triphala Kwatha in the Management of Medoroga with special reference to Obesity. International Journal of Ayurveda and Pharma Research. 2020;8(6):59-65.

Source of support: Nil, Conflict of interest: None Declared

***Address for correspondence**
Dr. Binod Kumar Singh
Ph.D. Scholar,
PG Dept. of Kayachikitsa
National Institute of Ayurveda, Jorawar Singh Gate, Amer Road, Jaipur,
Contact No. +918448207879
Email: drbinodbaghel@yahoo.com

Disclaimer: IJAPR is solely owned by Mahadev Publications - dedicated to publish quality research, while every effort has been taken to verify the accuracy of the content published in our Journal. IJAPR cannot accept any responsibility or liability for the articles content which are published. The views expressed in articles by our contributing authors are not necessarily those of IJAPR editor or editorial board members.