www.ijacare.in ISSN: 2457-0443

INTERNATIONAL JOURNAL OF AYUSH CASE REPORTS (IJA-CARE)

Effect of Mind-Body medicine intervention and intermittent fasting on morbid obesity with dyslipidemia: A Case Report

Selvameenakshi T [1], Venkatesan C[2], K. Maheshkumar [3]

[1] Assistant Professor, Department of Obstetrics and Gynaecology,
[2] Professor, Department of Anatomy and Acupuncture,
JSS Institute of Naturopathy and Yogic Sciences, Navakkarai, Coimbatore, Tamil Nadu India.
[3]Assistant Medical Officer/Lecturer Grade II, Department of Physiology, Govt. Yoga and Naturopathy Medical College and Hospital, Chennai, Tamil Nadu India

ABSTRACT:

With a rapid increase in morbid obesity, obesity has become a major global health concern with an increased risk of cardiovascular disease and an earlier onset of cardiovascular morbidity. Intermittent fasting (IF) and mind-body interventions are rapidly gaining popularity among the general public and individuals with cardio-metabolic diseases like obesity, diabetes, and hypertension. In this case report, we have assessed the impact of mind-body medicine and intermittent fasting on body weight and dyslipidemia in a morbidly obese patient. A 37-year-old male with morbid obesity (weight: 183 kg) presented with dyslipidemia, breathing difficulty, and sleep disturbance. He underwent mind-body intervention along with intermittent fasting for 20 days. Measurements were taken that included weight, lipid profile, quality of life, Pittsburgh sleep quality index (PSQI), and perceived stress scale (PSS). The patient lost 17 kg of body weight, and his BMI was reduced from 59.1 kg/m2 to 53.7 kg/m2 after 20 days of mind-body medicine intervention with intermittent fasting. Improvement was also observed in the lipid profile, quality of life, sleep quality, and stress level. This case demonstrates that mind-body medicine intervention with intermittent fasting can induce weight loss in a patient with morbid obesity. These findings suggest the potential benefit of integrating mind-body interventions with intermittent fasting regimens to reduce the risk of cardiovascular disease in this population.

KEYWORDS: Cardiovascular Disease, Intermittent Fasting, Mind Body Intervention, Obesity.

Received: 20.10.2022 Revised: 03.11.2022 Accepted: 10.06.2022 Published: 20.12.2022

Quick Response code

***Corresponding Author:**
Dr. K. Maheshkumar
Assistant Medical Officer/Lecturer Grade II,
Department of Physiology
Govt. Yoga and Naturopathy Medical College and Hospital, Chennai, Tamilnadu India
E-mail doctor.mahesh1985@gmail.com

INTRODUCTION:

Obesity is a multifactorial disease characterized by an abnormal or excessive accumulation of fat in the body and the prevalence of obesity in India is estimated at around 40.3% [1]. Obesity is associated with several non-communicable diseases such as type II diabetes, cardiovascular disease, and metabolic syndrome [2]. Although there has been a considerable advance in the development of

new medical treatments for obesity, there has recently been a rise in interest in modifying dietary habits through different nutritional regimens. Intermittent fasting is one such method that has been repeatedly recommended by medical experts as having benefits for oxidative stress, cardiovascular health, and weight management [3,4]. Non-pharmacological lifestyle interventions like mind-body medicine are recommended for management of various metabolic disorders like obesity. We report a successful case of morbid obesity with short-term weight reduction after 20 days of mind-body intervention along with intermittent fasting.

CASE DETAILS:

A 37-year-old male patient with a 17-year history of obesity presented with complaints of dyslipidemia, difficulty breathing, disturbed sleep, and hampered day-to-day life activities. His weight was 183 kg at the time of admission, and his BMI was 59.1 kg/m2, indicating morbid obesity. The patient was treated holistically throughout the inpatient stay. He had no history of metabolic disease (such as diabetes, hypertension, or thyroid dysfunction). Following a detailed case history, initial counseling, and obtaining signed informed consent, the mind-body intervention with fasting therapy was planned by an expert yoga and naturopathic physician for weight reduction. A three-dimensional approach was given to the patient through yoga, diet, and naturopathic treatments.

INTERVENTION DETAILS:

The intervention lasted for 20 days. After admission, the patient received an individual session on a healthy diet consisting of a rich variety of green leafy vegetables and fruits for weight management from a qualified yoga and naturopathic physician. This session covered major domains, including health, the benefits of fasting, and mind-body interventions. We instructed the patient to consume 600 kcal on a fasting day with boiled vegetables and fruits and consume a normal diet on other days throughout the intervention period. Fasting days alternated with eating days throughout the intervention period. The daily calorie requirement was determined by the yoga and naturopathy consultant based on the level of physical activity and gender. Furthermore, the participant was asked to record and report any adverse effects experienced during the study period. In addition, a separate session on mind-body intervention was scheduled for the patients twice a day under the supervision of a qualified yoga doctor. The details of the interventions are presented in Table 1.

Outcome measurement

Primary outcome:

The primary outcome of this study was the change in body weight. Using the calibrated scale, body weight was measured with light clothing and without shoes.

Secondary outcome:

Secondary outcomes included BMI, lipid profile, and the quality of life using the quality of life scale (brief questionnaire), the quality of sleep using the Pittsburgh sleep quality index, and stress level as measured by the perceived stress scale.

Table: 1 Mind body medicine intervention details :

Asana	Rounds	Duration in minute
Starting prayer		01
Loosening asana		
Neck exercise	5	10
Shoulder, elbow and wrist joint exercise	5	
Hip flexion, extension, lateral bending, twisting and rotation	5	
Kew joint exercise	5	
Relaxation		2
Suryanamaskar	3	10
Relaxation		5
Standing asanas		
Ardhakatichakrasana	5	3
Ardha Chakrasana	5	3
Sitting asanas		
Vakrasana	5	3
Shalabasana	5	3
Supine asana		
Sethubandasana	5	3
Prone asanas		
Bhujangasana	5	3
Salabhasana	5	3
Relaxation		3
Pranayama		
Nadishuddhi pranayama	5	3
Bhramari pranayama	5	3
Ending prayer		1

Table 2: Changes in the measured variables after intervention

Parameters	Before (26.7.2021)	After (15.8.2021)	Change %
Anthropometric measurements			
Weight (kg)	183.0	166.30	9.13
BMI (kg/m^2)	59.1	53.7	9.13
Mid arm circumference (cm)	51	48	5.88
Lipid Profile			
Serum total cholesterol (mg/dl)	235	185	21.28

Serum HDL– cholesterol (mg/dl)	38	38	0.00
Serum triglyceride (mg/dl)	212	178	16.04
Serum LDL cholesterol (mg/dl)	154	111	27.92
WHO Quality of life Scale – Brief			
Physical health (Domain 1)	69	81	-17.39
Psychological (Domain 2)	56	69	-23.21
Social relationships (Domain 3)	56	56	0.00
Environment (Domain 4)	63	75	-19.05
Pittsburgh Sleep Quality Index (PSQI)			
Global PSQI:	10	5	50.00
Perceived stress scale	14	13	7.14

RESULT AND DISCUSSION:

After 20 days of intervention with mind-body medicine and intermittent fasting, the patient's weight was reduced by 9.13%. An immediate drop in weight was noted on three consecutive days of fasting, with ranges of 180.2 kg to 175.0 kg and a mean of 178.6 kg. Table 2 shows that patients' BMI and mid-arm circumference both decreased. Further, the patient had a 21% total cholesterol, 16% triglyceride, and 17% LDL reduction. Patients subjectively reported improved quality of life in the physical, psychological, and environmental domains (WHO Quality of Life Scale—Brief). Further, he reported a 50% improvement in sleep quality and a 7% reduction in stress levels, as reported in Table 2.

We found that a mind-body medicine intervention involving intermittent fasting helped patients with morbid obesity lose weight. Previous studies on intermittent fasting have had durations of 3 months or more. They reported a significant mean loss of 2.5 % of initial body weight among 16 non-obese participants after 21 days of alternate day fasting. Such findings are consistent with our observations in this case with the loss of approximately 9 % of initial body weight. In our case, the percentage of weight loss was higher, which may have been a result of the morbidly obese patient's characteristics. Intermittent fasting has an effective role in weight loss through regulating leptin and adiponectin levels [6]. Previously clinical trials also mentioned that intermittent fasting stimulates the breakdown of triglycerides into fatty acids and glycerol and the conversion of fatty acids to ketone bodies in the liver [6]. During fasting, fatty acids and ketone bodies provide energy to cells and tissues. This metabolic switch might be the reason for the reduction in the lipid profile after intermittent fasting in obese patient.

Yoga is a mind-body intervention, has impacts on physical and psychological well-being, and is an effective treatment for various health conditions [9]. Mind-body medicine practice helps to increase mindfulness, and distress tolerance. Increased mindfulness reduces non-homeostatic eating by increasing awareness of hunger signals or creating a pause between having a thought and acting on that thought (consuming the food) [10]. Similarly, increased distress tolerance aids in coping with uncomfortable thoughts or feelings that may arise from intense cravings or urges to eat among the individuals [11]. Findings from this single-subject research design can be a useful tool in practice-based primary care research. However, the effects wane with time; more randomized controlled studies with an active control arm are needed to validate the effects of mind-body medicine with intermittent fasting in these populations.

CONCLUSION:

This case report demonstrates that 20 days of mind-body intervention with intermittent fasting can induce short-term weight reduction

and an improvement in the lipid profile for a patient with morbid obesity. This single case report finding suggests that intermittent fasting combined with mind-body medicine intervention could be a promising approach for weight loss in obese patients.

REFERENCES:

1. Berghöfer A, Pischon T, Reinhold T, Apovian CM, Sharma AM, Willich SN. Obesity prevalence from a European perspective: a systematic review. BMC Public Health 2008; 8(1): 1-10.
2. Golden SH, Robinson KA, Saldanha I, Anton B, Ladenson PW. Prevalence and incidence of endocrine and metabolic disorders in the United States: a comprehensive review. The Journal of Clinical Endocrinology & Metabolism 2009; 94(6): 1853-78.
3. Maheshkumar K, Venugopal V, Poonguzhali S, Mangaiarkarasi N, Venkateswaran ST, Manavalan N. Trends in the use of Yoga and Naturopathy based lifestyle clinics for the management of Non-communicable diseases (NCDs) in Tamilnadu, South India. Clinical Epidemiology and Global Health. 2020 Jun 1;8(2):647-51.
4. Patikorn C, Roubal K, Veettil SK, et al. Intermittent fasting and obesity-related health outcomes: an umbrella review of meta-analyses of randomized clinical trials. JAMA network open 2021; 4(12): e2139558-e.
5. Heilbronn LK, Smith SR, Martin CK, Anton SD, Ravussin E. Alternate-day fasting in nonobese subjects: effects on body weight, body composition, and energy metabolism. The American Journal of Clinical Nutrition 2005; 81(1): 69-73.
6. Al-Rawi N, Madkour M, Jahrami H, et al. Effect of diurnal intermittent fasting during Ramadan on ghrelin, leptin, melatonin, and cortisol levels among overweight and obese subjects: A prospective observational study. PLoS One 2020; 15(8): e0237922.
7. Gaeini Z, Mirmiran P, Bahadoran Z. Effects of Ramadan intermittent fasting on leptin and adiponectin: A systematic review and meta-analysis. Hormones 2021; 20(2): 237-46.
8. Abdullah K, Al-Habori M, Al-Eryani E. Ramadan intermittent fasting affects adipokines and leptin/adiponectin ratio in type 2 diabetes mellitus and their first-degree relatives. BioMed Research International 2020; 2020.
9. Vanitha A, Pandiaraja M, Maheshkumar K, Venkateswaran ST. Effect of yoga nidra on resting cardiovascular parameters in polycystic ovarian syndrome women. National Journal of Physiology, Pharmacy and Pharmacology 2018; 8(11): 1505-8.
10. Sekar L, Niva WJ, Maheshkumar K, et al. Effect of Mahamantra Chanting on Autonomic and Cognitive Functions-An Interventional Study. Journal of Clinical & Diagnostic Research 2019; 13(5).
11. Vallis M. Quality of life and psychological well-being in obesity management: improving the odds of success by managing distress. Int J Clin Pract 2016; 70(3): 196-205.

CONFLICT OF INTEREST: Author declares that there is no conflict of interest.

GUARANTOR*:* Corresponding author is guarantor of this article and its contents.

SOURCE OF SUPPORT: None

HOW TO CITE THIS ARTICLE:

Selvameenakshi T, Venkatesan C, Maheshkumar K. Effect of Mind-Body medicine intervention and intermittent fasting on morbid obesity with dyslipidemia: A case report. Int. J. AYUSH CaRe. 2022; 6(4):410-414.