

MANAGEMENT OF CO - MORBIDITIES

Weight management in Ramadan

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Abstract

Ramadan fasting is associated with significant weight loss in both men and women. Reduction in blood pressure, lipids, blood glucose, body mass index and waist and hip circumference may also occur. However, benefits accrued during this month often reverse within a few weeks of cessation of fasting, with most people returning back to their pre-Ramadan body weights and body composition. To ensure maintenance of this fasting induced weight loss, health care professionals should encourage continuation of healthy dietary habits, moderate physical activity and behaviour modification, even after conclusion of fasting. It should be realized that Ramadan is an ideal platform to target year long lifestyle modification, to ensure that whatever health care benefits have been gained during this month, are perpetuated.

Keywords: Ramadan, Fasting, Significant weight loss, Behaviour, Liraglutide.

Introduction

Fasting is an integral part of religions world over, be it the Hindu fasting during Kartik, the Ramadan Fast of Muslims or the Lent fast of Christians. All these fasts usually last for one month or more and involve various rigors including day time abstinence from meat, fluids and smoking. Among all these, Ramadan is of special interest, because of its widespread observation the world over, and its peculiar dietary stipulations, An extensive body of literature has dealt with the multitudinous medical ramifications of this fast. During this month, a majority of the 1.5 billion Muslims worldwide observe an absolute fast from dawn to dusk without intake of food or drink. This meal pattern can predispose to significant alterations in weight, and cause long term implications. This

necessitates a systematic appraisal and understanding of the various metabolic changes associated with this fast, which is best achieved by trying to acquire answers to a few relevant questions: (1) How is the Ramadan fast different from the other religious fasts? (2) What is the extent of weight loss in Ramadan? (3) Are there any other changes in body composition? (4) What is the weight loss in males versus females? (5) Is there weight regain after Ramadan? (5) How does one manage weight during and after Ramadan?

Uniqueness of Ramadan Fast

The Ramadan fast has a few unique features which may impact weight management. First, the fast does not involve disavowal of non-vegetarian or rich food. Hence, based on loco-regional and ethnic configurations, this can involve consumption of large amounts of high fat meat, sugar, milk, oil and butter. The fast is traditionally broken with dates, which have high sugar content glycaemic index, and can lead to a rapid rise in blood glucose, especially in people with poorly controlled diabetes. Secondly, the Lunar Calendar changes the dates of Ramadan every year. This influences the number of hours of fasting and impacts food consumption as well as weight gain. Third, while it is true that the frequency of meals is reduced to two, interspersed with snacks, the quantity and calorie content of each meal rises in Ramadan and this can contribute to a greater than expected calorie consumption. Fourth, Ramadan expects abstinence from fluids during the fasting hours. Therefore, the effect of fluid loss, should be factored in while discussing weight loss in Ramadan fasting.

Weight Loss In Ramadan

Reports about weight change during Ramadan are mixed. Various authors have reported weight loss,¹⁻⁸ weight gain⁹ and no change in weight.¹⁰ These differences may, in part, be due to varying ethnicities, age, gender, calorie intake, physical activity, and place of residence of the study

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participants. However, the most consistent observation has been weight loss. In a meta-analysis by Sadeghirad et al,⁵ based on 35 studies, mean reported weight loss over the one month period was 1.24 kg. Moreover, this meta-analysis showed a geographic variation, with subjects in East Asia (-1.56 kg), West Asia and Africa (-1.24) showing greater weight loss as compared to Europeans (-0.64 kg), though the weight loss was statistically significant in all ethnicities. In another study by Hajek et al,⁴ among the 202 participants, 46% of participants lost at least 1 kg, which was a significant difference. Participants who fasted consistently through the month lost significantly more weight than those who occasionally broke their fast. Salahuddin et al,¹ reported a mean weight loss of 1.4 kg, while Nourozy et al. observed an average weight loss of -2.2% in men and -1.4% in women, with the weight loss being more marked in subjects less than 35 years of age.

On the contrary, El Ati et al,¹⁰ found that both body weight and composition remained unchanged. Even though dietary carbohydrate decreased, dietary protein was increased due to greater intake of animal protein, and total energy consumption did not change. The authors hypothesized that this was possibly a consequence of reduced post-prandial thermogenesis and reduction of sympathetic activity in response to fasting. In another study by Bakhotmah et al.⁹ 59.5% reported weight gain during Ramadan, which was attributed to consumption of high calorie food and restricted physical activity. However, the latter two studies seem to be exceptions rather than the norm.

Changes in Body Composition

Some other parameters which could help clarify our knowledge about weight gain in Ramadan include, body mass index (BMI), fat percentage, lipid profile, blood pressure and anthropometric data. In the study by Nourozy et al.² Ramadan fasting led to significant reduction in BMI, waist circumference, hip circumference and fat free mass, with the most significant changes being noticed in males less than 35 years old. Reduction in fat percentage was noticed only in males. Salahuddin et al¹ demonstrated reductions in blood pressure, but not in serum cholesterol, while Kamal et al.⁸ reported reductions in systolic blood pressure, triglycerides, and low density lipoproteins (LDL) but not in total cholesterol or diastolic blood pressure. High density lipoprotein (HDL) also increased. In another study by Saedeghi et al,³ body fat as measured by skin fold thickness showed a decrease over the month of fasting. El Ati et al.⁹ studied parameters like serum cortisol, lipids, glucose and creatinine, and found no change. The only parameter which increased during Ramadan was serum uric acid. Similar data was reported

by Rohin et al.⁷ with no change in body fat percentage or neck circumference. Taking all these studies into consideration, data consistently report a reduction in BMI, and fat percentage in conjunction with weight loss.

Gender-specific Weight Loss

An important finding in some studies is gender-specific weight loss. For example, in the study by Nourozy et al.² waist and hip circumferences, and fat mass did not decrease in the women aged more than 36 years. In the study by Saedeghi et al,³ females showed quicker decrease in fat percentage during the later weeks of fasting as opposed to men. These have been explained by differences in nutrient oxidation and changes in energy expenditure during the fasting period.²

Weight Regain After Ramadan

Though most studies have reported significant weight loss during Ramadan, almost all of them reported uniform weight regain as well. In the meta-analysis by Sadeghirad et al.⁵ weight loss did not persist and weight was regained within 2 weeks after Ramadan. In the study by Hajek et al,⁴ even though there was a 0.63kg weight loss during Ramadan, by the end of 1 month after Ramadan, a net 0.1 kg weight gain compared to pre-Ramadan weight had occurred. A similar weight regain has also been reported by Saedeghi et al,³ underlining the fact that weight loss during Ramadan is transient.

Weight Management in Ramadan

Ramadan provides a good opportunity to inculcate good dietary practices among adherents of the faith. While it is true that Ramadan fasting often leads to weight loss, the weight lost is immediately regained in most cases. Hence, successful weight management requires a structured programme targeted at therapeutic lifestyle changes. Any such programme needs to be started at least 1-2 months in advance of Ramadan. People should be evaluated for presence of diabetes, cardiac diseases, hypertension and anthropometry should also be done. A structured diabetes education programme is perhaps the single most important intervention and should focus on appropriate dietary and physical activity recommendations. For example, in the study by Bakhotmah et al,⁹ dates (97.7%) were the most frequently consumed food, followed by meat soups (95.4%), pastries (82.1%) and rice (80.9%). Also, the number of meals was increased to 5 per day during Ramadan, and not all meals were cooked at home, rather, there was a lot of reliance on commercially available fat-rich foodstuffs. This is where the crux of diet management during Ramadan lies. Nutrition education should focus on reducing the number of meals, changing the dietary habits and modifying the

quality of food intake. Consumption of calorie-rich food at night to compensate for fasting should be discouraged and the Ramadan diet should not markedly differ from the diet throughout the rest of the year. Consumption of clear fluids should be encouraged throughout the night, especially in hot climates.

Physical activity is also markedly restricted during Ramadan, and this should be modified. If moderate exercise, which does not interfere with the daily schedule is suggested during Ramadan, people are more likely to adhere to it. This may be conveniently done after the evening meal or prior to the morning meal. Aerobic exercise such as walking or cycling should be preferred, and must include the physical exertion involved in the prayers, especially the Tarawih prayers. Vigorous exercise should be discouraged, especially in late afternoon, to prevent hypoglycaemia.

Most importantly, these changes should not just be restricted to Ramadan; otherwise, weight regain, as has been observed in almost all the studies, is certain. The Ramadan fasting should become a catalyst and a starting point for beneficial lifestyle changes for the rest of the year. Towards this purpose, community participation should also be sought, and religious leaders involved in such programmes.

There are no recommendations as to the use of weight loss medications during Ramadan. Weight-reducing drugs should not be initiated during Ramadan. As far as weight management in type 2 diabetes is concerned, the Treat 4 Ramadan Trial¹¹ evaluated weight loss in ninety nine adults with established diabetes and found that people in the Liraglutide group, as opposed to participants in the sulphonylurea group, reported greater weight loss, better HbA1C control, more patient satisfaction and lower episodes of self-recorded hypoglycaemia. Liraglutide can therefore be used safely

during Ramadan in people who desire weight loss along with glycaemic control.

In conclusion, health care professionals and adherents of the faith should appreciate that Ramadan is not only a period of fasting and religious exaltation, but also an underutilized opportunity to ring in holistic lifestyle and weight management changes all through the year.

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