

The effects of Ramadan fasting length on biochemical and anthropometric parameters in healthy subjects

Sir,

Throughout the world, Muslims fast from dawn until sunset every day in the month of Ramadan; they refrain from drinking and eating during this time.^[1] As of yet, there has been little agreement on the effect of the Ramadan fasting on the cardiometabolic and adiposity factors. Recently in a systematic review, Mazidi *et al.* pointed out that based on different geographical regions, Ramadan fasting has various impacts on cardiometabolic risk factors and anthropometric parameters. The authors stated that this observation was due to the different durations between dawn and sunset in different countries and seasons, and consequently dissimilar fasting length.^[2] Nutritional habits including the time of eating sahur meal during Ramadan play an important role in the length of fasting. Therefore, this study was designed for the first time to evaluate the effects of different fasting lengths on cardiometabolic and adiposity factors in healthy subjects.

Sixty healthy male subjects (aged 30-58 years) were divided into two groups of an equal number

Group A: Individuals who intended to fast regularly with sahur meal and

Group B: Individuals who wanted to fast without sahur meal).

Experiments were performed at three different times — a week before Ramadan (T1), the last week of Ramadan (T2), and 30 days after Ramadan (T3). The study was conducted on employees of the administrative section of the Central Post Office during July/August 2014 in Shiraz, Fars Province, Iran. Patients were asked to be free of all medications for at least 1 month prior to starting the study. Each subject gave informed written consent to participate in the study, which was approved by the Mashhad University of Medical Sciences Ethics Committee (No: 921479).

Based on the time of meals, the average hours of fasting in group A was 14 h and 20 ± 10 min and in group B was 19 h and 15 ± 20 min. Weight and body mass index (BMI) decreased significantly between T1 and

T2 ($P < 0.05$ and $P < 0.05$, respectively) in group A. In group B, there was a significant increase in weight, BMI, and fat mass between T1 and T3 (all $P < 0.05$). Similar results were reported in some studies.^[3,4] Between macronutrients, only fat intake increased significantly in group A ($P < 0.05$), which is in agreement with some studies.^[4,5] None of the biochemical and antioxidant parameters changed significantly except triglyceride and alanine transaminase (ALT). The triglyceride level was reduced in groups A and B between T1 and T2 ($P < 0.05$ and $P < 0.05$, respectively). However, only the subjects of group B had a significant increase in total cholesterol (TG) level after Ramadan ($P < 0.05$). Other investigations have revealed no change, a decrease, or an increase of TG level during fasting.^[6] A significant increase in ALT level during Ramadan was seen only in group B ($P < 0.05$). We found a significant increase in high-density lipoprotein (HDL) levels in both groups during Ramadan ($P < 0.05$).

CONCLUSION

In conclusion, the beneficial effects of Ramadan fasting include improving lipid profile. In addition, the results showed that sahur meal by inhibiting a prolonged fasting length plays a significant role in preventing dyslipidemia and weight gain after Ramadan.

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Conflicts of interest

There are no conflicts of interest.

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