Letter to the Editor

Fasting during Ramadan and obesity

Madam, Fasting during the month of Ramadan is obligatory for all healthy adult Muslims in Islam that entails avoiding food and fluid intake from dawn to sunset. This letter explores the studies done to observe the effect of this model of fasting on lipid and metabolic indicators, especially in obese people and to see if there is any beneficial effect of this pattern of fasting, especially on prevention of obesity. Obesity is a leading preventable cause of death worldwide, with increasing prevalence in adults and children, even now in developing countries. It has emerged as one of the most serious public health problems of this century. A literature search was done using the following search strategy: fasting AND (obesity or obese) AND (Ramadan OR Ramazan) and a total of seven studies were found. One of these was before-after study[1] on 103 obese individuals in Egypt that showed that at the end of Ramadan fasting, there was a significant improvement in total cholesterol (TC), total triglycerides (TG), high density lipoproteins (HDL), low density lipoproteins (LDL), TC/HDL ratio, LDL/HDL ratio, lipoprotein a, apolipoprotein (APA), apolipoprotein B (APB) levels and other coagulation parameters like clotting time, prothrombin time and activated partial thromboplastin time that persisted for four weeks after fasting. Similarly, in another study[2] on 60 obese women with type 2 diabetes in Algeria, fasting resulted in significant improvement in glucose homeostasis, although the TC, TG and LDL levels also increased significantly. Another recent before-after study by the same authors on 276 diabetic obese women reported significant weight loss, a decrease in meal frequency, and in energy intake but an increase in dietary fat and cholesterol consumption.[3] A fourth study[4] on 24 healthy female volunteers in Bahrain found increase in levels of serum leptin during fasting period in lean and obese individuals. Leptin is a protein hormone that acts on hypothalamus of brain and inhibits appetite. The absence of leptin receptor has been shown to lead to uncontrolled food intake and obesity. The effect of fasting on leptin resistance in obese people has not been studied. Overall, these studies show that behaviour modification during fasting of Ramadan may help reduce the complications of obesity by controlling or preventing atherogenicity because of its positive impact on lipid and coagulation profile. Since fasting during Ramadan is a religious obligation, there can be no randomized controlled trials done to ascertain its benefits, and data available in literature relies on before-after studies. No large-scale studies have yet been done comparing rates of obesity and its complications in populations/individuals that fast every year regularly compared to those who do not fast. Therefore, there is very scarce data on the effects (both short- and long-term) of regular fasting during Ramadan on either prevention of obesity or prevention of its complications. It is hypothesized that discipline in food intake, maintained during the whole month may be beneficial in terms of obesity control and prevention, and this should be studied given that nutritional transition occurring in developing countries means that we shall now see a rise in obesity prevalence in these countries, that includes Pakistan.

Mohammad Yawar Yakoob

Doctoral Student, Department of Nutrition,
Harvard School of Public Health, Boston, USA.

References

1. Saleh SA, El-Kemery TA, Farrag KA, Badawy MR, Sarkis NN, Soliman FS, et al. Ramadan fasting: relation to atherogenic risk among obese Muslims. J Egypt Public Health Assoc 2004; 79: 461-83.
2. Khaled BM, Bendahmane M, Belbraouet S. Ramadan fasting induces modifications of certain serum components in obese women with type 2 diabetes. Saudi Med J 2006; 27: 23-6.
3. Khaled BM, Belbraouet S. Effect of Ramadan fasting on anthropometric parameters and food consumption in 276 type 2 diabetic obese women. Int J Diabetes Dev Ctries 2009; 29: 62-8.
4. Kassab SE, Abdul-Ghaffar T, Nagalla DS, Sachdeva U, Nayar U. Serum leptin and insulin levels during chronic diurnal fasting. Asia Pac J Clin Nutr 2003; 12: 483-7.