

## **Lipids, lipoprotein distribution and nutritional parameters over the ramadan period in hemodialysis patients**

### **ABSTRACT**

The period of Ramadan (R) is associated with dramatic changes in eating habits involving extended periods of fasting on a daily basis. The current study assessed whether lipids and lipoproteins were impacted during R in chronic hemodialysis (HD) patients. Forty-five subjects in an outpatient dialysis clinic in Saudi Arabia were evaluated for anthropometric and lipid changes on a monthly basis before, during as well as one and two months after R. In addition to routine biochemical measures, anthropometric assessments including hand-grip strength (HGS), mid-arm muscle circumference (MAMC), plasma lipids and lipoproteins were evaluated. Dietary assessment was carried out using 24 h recalls. Over the course of the study, changes in renal-related parameters (creatinine, albumin, Kt/V) were minor, as were changes in plasma lipids. Large high-density lipoproteins (HDLs) and low-density lipoproteins (LDLs) accounted for the majority of their respective lipoproteins and their proportions did not change over the study period. Mean LDL particle diameters were higher during the R period, but the changes over the study period were small. Calorie intake during R ( $2139 \pm 709$  kcal/d) was significantly higher than the value noted two month post-R ( $1755 \pm 424$  kcal/d) and this was associated with significant increases in protein ( $69 \pm 24$  vs.  $60 \pm 24$  g/d) and fat ( $97 \pm 38$ , vs.  $73 \pm 35$  g/d), respectively. No changes were noted with respect to HGS and MAMC. These data show that for HD patients, the period of R results in temporal or non-significant effects on plasma lipids, despite changes in nutrient intake.

**Keyword:** Ramadan; Anthropometrics; Hemodialysis; Lipoprotein particles; Nutrition; Plasma lipids