

'Energy-Dense, High-SFA and low-fiber' dietary pattern lowered Adiponectin but not leptin concentration of breast cancer survivors

ABSTRACT

Dietary pattern (DP) and its relationship with disease biomarkers have received recognition in nutritional epidemiology investigations. However, DP relationships with adipokines (i.e., adiponectin and leptin) among breast cancer survivors remain unclear. Therefore, we assessed relationships between DP and high-molecular weight (HMW) adiponectin and leptin concentration among breast cancer survivors. This cross-sectional study involved 128 breast cancer survivors who attended the oncology outpatient clinic at two main government hospitals in the East Coast of Peninsular Malaysia. The serum concentration of HMW adiponectin and leptin were measured using enzyme-linked immunosorbent assay (ELISA) kits. A reduced rank regression method was used to analyze DP. Relationships between DP with HMW adiponectin and leptin were examined using regression models. The findings show that with every 1-unit increase in the 'energy-dense, high-SFA, low-fiber' DP z-score, there was a reduction by 0.41 $\mu\text{g/mL}$ in HMW adiponectin which was independent of age, BMI, education level, occupation status, cancer stage, and duration since diagnosis. A similar relationship with leptin concentration was not observed. In conclusion, the 'energy-dense, high-saturated fat and low-fiber' DP, which is characterized by high intake levels of sugar-sweetened drinks and fat-based spreads but low intake of fruits and vegetables, is an unhealthy dietary pattern and unfavorable for HMW adiponectin concentration, but not for leptin. These findings could serve as a basis in developing specific preventive strategies that are tailored to the growing population of breast cancer survivors.

Keyword: HMW adiponectin; Leptin; Dietary patterns; Breast cancer survivors