

8th International Conference on

CLINICAL NUTRITION

December 08-10, 2016 Dubai, UAE

The role of palmitoylcarnitine in prostate cells: A pro-inflammatory mediator

Ala'a Al-Bakheit¹, Antonietta Melchini², Maria Traka² and Richard Mithen²¹Al-Balqa' Applied University, Jordan²Institute of Food Research, UK

Acylcarnitines are intermediate compounds in lipid metabolism that accumulate in plasma as a result of metabolic dysregulation. Dietary intake of sulforaphane, a bioactive compound delivered by broccoli consumption, is able to significantly reduce plasma levels of acylcarnitines in subjects with moderate risk of developing cardiovascular diseases. Palmitoylcarnitine (palcar), a C16:0 acylcarnitine, is an intermediate in mitochondrial fatty acid oxidation, accumulate in plasma as a result of insufficient integration of fatty acid β oxidation with TCA cycle due to high levels of oxidative stress which inhibits TCA cycle enzymes. As it has been reported that metabolism is disrupted in prostate cancer, in this study we found that palcar increased significantly in human prostate cancer tissues compared to non-cancerous tissues. We then investigated the potential biological consequences of high levels of palcar in vitro. We found that palcar (50 μ M) induces rapid Ca^{2+} influx only in the human prostate cancer PC3 cells, but not in the human prostate non-cancerous (PNT1A and BPH-1) and DU145 cells that are moderately metastatic compared to PC3 cells. Palcar effects on Ca^{2+} influx were similar to those induced by dihydrotestosterone (DHT), an androgen associated with prostate cancer progression. We also observed a significant induction of interleukin-6 cytokine in 50 μ M palcar-treated PC3 cells ($p \leq 0.05$). These data suggest that palcar could be considered a biomarker for the metabolic dysfunction associated with prostate cancer and provide evidence of palcar pro-inflammatory effect in highly metastatic prostate cancer cells which may be related to a $[Ca^{2+}]_i$ -dependent mechanism of action.

all4alaa@yahoo.com

Energy drinks: A new trend in Saudi Arabia

Amani Aliwi Alrasheedi

King Abdulaziz University, KSA

Aim: The aim of this study was to investigate how frequently male and female school and university students consumed energy drinks, their reasons for drinking them and the extent of their knowledge about the beverages.

Methods: A self-administrated questionnaire was used to collect data from 4355 students (ages 12-26 years).

Results: Nearly 60% of the students consumed at least one can of an energy drink per week and (63.3%) drank two to four cans per week. Code Red was the most popular brand consumed (52.8%). Most of students (90.9%) consumed energy drink during daytime and (68.7%) drank them because they enjoyed the flavor.

Conclusion: More than half of the participants consumed energy drinks at least once per week. Students' knowledge and practices regarding energy drinks need improvement so they will understand the drinks' contents and their impacts on health. Food labels should mention the total amount of caffeine and provide clear information to consumers about appropriate limits and the risks of excessive consumption.

aalarasheedi@kau.edu.sa