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The beneficial effects of antioxidants administration on some menopausal changes in oophorectomised rats

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As oxidative stress is proposed to be responsible for many of the menopause associated disorders, antioxidants may play an important role in this situation. In this study, forty albino female rats were divided into 4 groups: Normal control group, oophorectomised group, oophorectomised group treated with 17-β estradiol and oophorectomised group treated with antioxidants (vitamin C and low dose vitamin A). The following were measured: Total antioxidant (TAO) and malondialdehyde (MDA), lipid profile, serum insulin, glucose and homeostasis model assessment-insulin resistance (HOMA-IR), bone specific alkaline phosphatase (BALP), urinary hydroxyproline, weight gain and visceral fat. A positive correlation was found between MDA and low density lipoprotein-cholesterol (LDL), HOMA-IR and BALP and urinary hydroxylproline level. Those results denoted that oxidative stress might be a cause of dyslipidemia, insulin resistance and osteoporosis associated with menopause. Both E2 and vitamins in oophorectomised rats led to a significant decrease in MDA, weight gain, visceral fat, cholesterol, LDL cholesterol and significant increase in HDL and TAO levels compared to oophorectomised rats. Also, both treatments led to a significant decrease of HOMA-IR, BALP and urinary hydroxylproline. An interesting finding was detected where oophorectomised rats showed a decrease in triglyceride level which was significantly increased by E2 administration whereas antioxidant administration produced no change. Our results denote the beneficial effects of antioxidant administration in surgically induced menopause in rats regarding oxidative stress, weight gain, atherogenic lipid profile, insulin sensitivity and bone turnover similar to that of E2.

Biography

Nihal El Habachi is a Professor in the Department of Physiology and the Academic Director of the Alexandria Clinical Research Centre in the Faculty of Medicine, Alexandria University, Egypt. She is a multilingual Professor with a track record of establishing multinational partnerships and teaches in both English and French. She has been pivotal in establishing the University Clinical Research Centre. Part of her Pre-Doctoral training was conducted in the Heart Science Centre, Imperial College, UK. In May 2006, she has studied Clinical Research and GCP at University of Maryland, USA. She has a broad research experience in national and international projects.

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