Lifestyle and biomarkers related to body mass index in healthy postmenopausal women in west Algeria.

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Introduction

Metabolic syndrome was highly prevalent among postmenopausal women in west Algeria. Hypertension, abdominal obesity, hyperglycemia and low HDL-C increased the Metabolic syndrome risk and were correlated with unhealthy diet (Dworatzek *et al.*, 2017; Khalfa *et al.*, 2017;).

Aim of the study

To evaluate food consumption, energy expenditure and their relationship with inflammatory markers and oxidative status according to body mass index (BMI) among healthy postmenopausal women of west Algeria.

Subjects & Methods

127 Healthy Women
On menopause since 9.31±6.45years

GI (n = 34)
BMI =22±1.6
Age =61±7 years

GII (n = 45)
BMI = 28± 1.20
Age=56±6 years

GIII (n = 44)
BMI = 34.08±2.55
Age=57±6 years

- Dietary survey : 24h Recall and record repeated during 3 days.
- Daily energy expenditure (DEE) :Black *et al.*, (1990).
- In serum:*
 - Lipid profile (colorimetric methods: Spinreact kit, Spain),
 - CRP :Cayman Chemical's human EIA kit
 - Fibrinogen (Von Clauss method, Analyzer automate ACL ELITE).
 - Thiobarbituric acid reactive substances (TBARS) (Quantanilha *et al.*, 1982)
 - Carbonyls(Levine *et al.*, 1990)
 - Superoxide dismutase (SOD) (Marklund S, Marklund G, 1974)
 - Catalase (CAT) (Aeib, 1974)

Statistical analysis

Statistical analysis was performed using SPSS 20.0. Data expressed as the means±SD. Comparison between groups was performed using ANOVA and Student "t" test *P < 0,05 , ** P < 0,01; ***P < 0,001

Results

Energy intake

TEI & DEE (Kcal/d)

Food groups (g/d)	GI	GII	GIII
Meat,poultry,fish& eggs	99,66+59,48	98,12+57,29	194,96+86,39***
Milk & dairy products	247,99+148,81	187,79+168,33	190,95+178,68
Fruits&vegetables	356,33+196,91	266,71+152,6*	265,54+179,82*
Cereals &starchy foods	295,43+183,98	281,92+208,51	217,13+110,84*
Fat	6,22+3,53	14,06+9,78***	7,85+3,45*
Sugar &sugar products	204,06+117,67	175,87+78,48	381,29+248,41***

Lipid peroxidation

Carbonyls (nmol/mg prot)

Lipids

Proteins

Antioxidant Defense

Inflammation

- High energy intake
- High intake of simples carbohydrates

- Significant increase in CRP in GII&GIII vs GI
- Low SOD activity in GII and GIII

Carbohydrates

Conclusion

Unhealthy lifestyle in postmenopausal women, inflammation and oxidative stress exposed women to metabolic diseases. Nutritional education and regular physical activity were essential for the prevention of cardiovascular diseases in women.

References

Dworatzek E, Mahmoodzadeh S. Pharmacol Res. 2017; 119:27-35.
Khalfa khalfa et al., Int J Gynecol Obstet Aug;138 (2):201-206. (2017)