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Abstracts

**Prevalence of metabolic syndrome and associated behavioural factors in Tunisian adolescents**

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**Introduction:** Chronic diseases related to the modernisation of dietary patterns and to changing lifestyles are increasing rapidly in North Africa, in youth among others. The aim of this study is to assess the prevalence of Metabolic Syndrome (MetS) among urban adolescents and its relationship with behavioural risk factors.

**Methods:** Cross-sectional study (2009/2010) in Great Tunis (93% urban) among a random sample of 1258 adolescents 10–19y (585 boys, 673 girls). MetS defined according to IDF criteria (2007). Food intake estimated by retrospective three-day dietary intake records; physical activity measured by a validated frequency questionnaire; sedentary activities are those with metabolic cost <=1.5 MET. Adjusted (for physiologic, socio-demographic and economic factors) associations of MetS and its components with energy intake and sedentary behaviour were assessed using logistic regression models.

**Results:** prevalence of MetS was low (1.6% [0.9–2.8]), but higher among girls (2.4% [1.3–4.7]) vs. boys (0.6% [0.3–1.6]). Contrarily to the other MetS components for which no difference was found, abdominal obesity was more frequent among girls (22.5% [18.3–27.3]) vs. boys (6.0% [4.0–9.0]). After adjustment on gender, age, puberty, education, economic level, size of household and profession of household head, MetS and its most important component were associated with daily energy intake: MetS: 3rd tertile vs. 1st OR = 5.7 [1.3–24.4]; abdominal obesity: 2nd tertile vs. 1st: OR = 2.5 [1.2–5.0]; 3rd tertile vs. 1st: OR = 9.3 [4.7–18.3].

**Conclusion:** There was a high prevalence of obesity in patients with macrosomia and a significant weight reduction after treatment with bromocriptin. Despite the main mechanisms remain undetermined, patients that achieved normal prolactin levels were more likely to lost weight. These findings reinforced the metabolic importance of an appropriate treatment of patients with macrosomia, particularly the obese one.

**Influence of S-adenosylmethionine in fructose-induced hepatic injuries**

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**Introduction:** Fructose is an important risk factor in the development of fatty liver. This is related to the de novo hepatic lipogenesis, excess production of free radicals and changes in redox balance. It is known that the overcombing of antioxidant protection in the cells leads to a change in the redox enzyme activity, mitochondrial dysfunction and cell death by apoptosis. The aim of this study was to investigate the influence of S-adenosylmethionine (SAM-e) administration in fructose-induced hepatic injuries.

**Methods:** The study was performed on male Wistar rats divided into 3 groups (n = 7): control, fructose fed (35%,16 weeks), fructose fed and treated with SAM-e (20 mg/kg b.w.,16 weeks). Liver injury was assessed biochemically and histologically together with hepatic Bcl-2 family proteins expression.

**Results:** The results showed microvesicular steatosis, increase liver MDA levels (p < 0.05), significantly elevated ratio Bax/BCL-2 by 92% (p < 0.01), reduced total thiol levels (p < 0.05) in the fructose-fed rats compared to the control group. In the group treated with SAM-e steatosis, MDA levels (p < 0.001) the ratio Bax/BCL-2 were significantly reduced.

No significant association was found between sedentary behaviour and MetS or its components.

**Conclusion:** These findings justify the necessity of promoting healthy diet behaviour among youth in order to prevent abdominal obesity and related diseases.