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Biochemical and hematological factors in obsess addicted men with focus on the triglyceride and cholesterol homeostasis in obsess addicted hamsters

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This experiment was planned to study the effect of opium on biochemical and hematological factors in human and hamsters with focus on cholesterol and triglyceride hemostasis via LXR alpha. Normal and high cholesterol diet (HCD) addicted Syrian golden hamsters were used in this study. Biochemical and hematological factors were measured after one month. The mRNA and protein levels of LXR were determined by RT-PCR and western blotting, respectively. Histological changes of liver and intestine were examined by a light microscope. For human study, biochemical and hematological parameters were determined for 500 male (250 addicts and 250 controls). GC-Mass spectrometry of opium showed presence of about 30% alkaloids (morphine 16%, thebaine 4.4%, papaverine 3.2%, and codeine 5.5%) and the rest was non-alkaloidal agents, inorganic material and 13.5% water. Opium changed some biochemical, hematological and antioxidant test in human and hamsters ($P<0.05$). The mRNA and protein levels of intestinal LXR were significantly increased in addicted animals in comparison with non-addicted ($P<0.05$). The mRNA and protein levels of liver LXR were significantly increased in HCD and HCD+ opium group ($P<0.05$). Opium consumption also, produced severe injuries in the intestine and liver of hamsters. Our findings indicated that opium reduced total cholesterol, probably via LXR expression in hamster. However, opium also increased the level of malondialdehyde, triglyceride, platelet, and reduced total antioxidant capacity and white blood cell.

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Anthropometric measures are associated with cardio-metabolic risk factors in rural, but not urban Kenyans

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This cross-sectional study aimed to investigate the association between anthropometric variables and cardio-metabolic risk factors in a population of Sub-Saharan Africa (SSA). A total of 1,405 (1,158 rural and 247 urban) Kenyans were examined. Anthropometric measurements were carried out, such as weight, body mass index, waist and hip circumference, visceral and subcutaneous adipose tissues (VAT and SAT). Visceral-to-subcutaneous fat ratio (VSR) and waist-to-hip ratio (WHR) were derived. Fasting blood glucose (FBG), serum insulin (SI) and plasma lipids were taken. A 2-h oral glucose tolerance test was performed; homeostatic model assessment of insulin resistance (HOMA -IR) was calculated and blood pressure (BP) was measured. Dietary intake, physical activity energy expenditure, cardio-respiratory fitness and socio-demographic characteristics were measured. Linear regression analyses were carried out. Urban Kenyans had significantly higher anthropometric features and presented higher cardio-metabolic risk factors. In rural Kenyans, anthropometrics were significantly correlated to all cardio-metabolic risk indicators ($p<0.05$), except plasma HDL-C level, FBG and SI in women. WHR was the best anthropometric variable to predict cardio-metabolic risk. In urban Kenyans, anthropometrics were not significantly associated with cardio-metabolic indicators except for SI and systolic BP in men. In urban women, the correlation only remained significant between WC and plasma lipids, VSR and FBG, SAT and systolic BP. Anthropometrics were significantly correlated to cardio-metabolic risk factors among rural but not urban Kenyans. Further investigations are needed in order to elucidate the role of environmental factors and urbanization when it comes to the correlation between anthropometric variables and cardio-metabolic risk factors in SSA populations.

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