

Oral opium reduced lipid profiles with change in expression of liver x receptor alpha (LXR)

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Background and Aims: Many people believe that opium has beneficial effects on lipid profile which results in reduced atherosclerosis. Opium contains several alkaloids and biological active components, which some of them are used for atherosclerosis treatment. The liver x receptor (LXR) is an important regulator of cholesterol and glucose homeostasis that belongs to the nuclear receptor superfamily. This study aimed to investigate the effects of opium on glucose, lipid profile and LXR expression. Sixteen N-mary mice randomly were divided into two groups (control and addict), and were studied for one month. Serum lipid profile, Fasting blood sugar (FBS), Aspartate aminotransferase (AST) and Alanine aminotransferase (ALT) were determined. Also LXR mRNA and protein levels were determined by Reverse Transcription PCR and western blotting. This study showed that opium significantly reduced total cholesterol ($P<0.05$), While the difference in blood glucose, triglyceride (TG), High-density lipoprotein cholesterol (HDL-c), Low-density lipoprotein cholesterol(LDL-c) and Very low-density lipoprotein cholesterol(VLDL-c), as well as AST and ALT between addict and control groups were not significant. More importantly, LXR protein and mRNA levels significantly increased ($P<0.05$) in intestine of addict group in comparison with control, while the change in LXR protein and mRNA in the liver were not significant compared with control. The results of this study showed that opium addiction reduced total cholesterol and increased LXR expression in intestine. Further researches need to determine effective components.

Keywords: Opium; Cholesterol; Atherosclerosis; LXR