

New insight in ezetimibe /garlic combination in hypercholesterolemic mice

E. Abbasi Oshaghi¹, A. Mohammadi², N. Zynolebadi³, M. Nabi Moradi¹, H. Ghasemi^{1,*}, A. Totonchi¹, M. Goodarzi¹

¹Department of Biochemistry, Hamedan University of Medical Sciences, Hamedan, Iran

²Department of Biochemistry, Afzalipour School of Medicine, Kerman University of Medical Sciences, Kerman, Iran

³Department of laboratory science, Islamic Azad University, Borujerd Branch, Borujerd, Iran

Background and Aims: Using herbs for lowering blood glucose and lipids to normal levels is clinically important. In this respect, garlic is one of the medicinal plants, which has shown hypocholesterolemic effects. Ezetimibe is also a novel and effective lipid lowering medicine that is well tolerated by the patients and has a safety profile similar to that of placebo. This study was aimed to evaluate the combination effect of aquatic extract of garlic and ezetimibe on lipid profile and glucose in hypercholesterolemic mice.

Methods: A total of forty N-mary male mice were randomly divided into five groups. Group 1 received: chow+2% cholesterol+0.5% cholic acid, group 2: chow+4% garlic extract+2% cholesterol+0.5% cholic acid, group 3: chow+0.005% Ezetimibe+2% cholesterol+0.5% cholic acid, group 4: chow + 4% garlic+0.005% Ezetimibe+2% cholesterol+0.5% cholic acid, and group 5: chow only. After four weeks mice were sacrificed, blood was collected, liver weight was measured and lipid profile and glucose levels were determined enzymatically.

Results: Compared with hypercholesterolemic mice, ezetimibe plus garlic significantly decreased cholesterol level ($P<0.000$), low-density lipoprotein cholesterol levels ($P<0.000$), liver weight ($P<0.001$), %liver/body weight ($P<0.02$) and atherogenic index ($P<0.005$).

Conclusions: The findings showed that the combination of garlic and ezetimibe was more effective than garlic and ezetimibe alone in improving the lipid profile.

Keywords: Garlic; Ezetimibe; Hypercholesterolemic mice