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Effect of *Stachys mialhesi* de Noe on the inflammation induced by hyperhomocysteinemia in cardiovascular diseases

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Homocysteine may mediate long-term oxidative damage at the vascular interface through the generation of potent reactive oxygen intermediates. In this study, we evaluated the effect of the anti-inflammatory and antioxidant *Stachys mialhesi* extract on the inflammation induced by hyperhomocysteinemia and damages in the aorta, heart and liver of mice. Adult male *Mus musculus* mice were systematically divided into four groups of similar mean body weights and fed for 21 days with control and experimental diets. The control group (F) was fed with white bread (0.50 mg/mice), group (M) was fed with L-methionine (200 mg/kg/day), group (MP) was fed with L-methionine (200 mg/kg/day) plus *S. mialhesi* extract (50 mg/kg), and the positive control group (P) was treated with *S. mialhesi* extract (50 mg/kg/day). The experimental diets were given in white bread (0.50 mg/mice). The plasma hs-CRP concentrations were elevated significantly after the administration of methionine in high doses to mice. This was associated with the loss and degeneration of endothelium, fenestration and formation of foam cells in the media of aorta, also the alteration of the cardiac muscle and liver necrosis. This is due to the angiotoxic action of homocysteine directed to the aorta, and its toxicity on the heart and liver. These changes were not observed in mice treated with methionine plus the antioxidant and anti-inflammatory *S. mialhesi* extract. Homocysteine initiated inflammation and mediated early atherogenesis lesions through increased oxidant stress, and the treatment with *S. mialhesi* extract prevented the endothelial and heart alteration. So, combined to vitamin therapy, natural phytochemicals are sources for natural antioxidants and could be used to protect against the homocysteine mediated free oxygen radicals damages.

Biography

Sakina Zerizer has a Master's degree from University of Salford Manchester England in 1987 Department of Biochemistry, and completed PhD in 2006 from Faculty of Natural Sciences University of Frères Mentouri, Constantine, Algeria, and got Master's and PhD students at the University of Frères Mentouri Algeria. She is a teacher since 1988 until now and also is the Director of Research. She has published some papers in reputed journals in the field of pharmacy and immunology.

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