

## **Oral administration of a nutraceutical combination improves endothelial dysfunction in ovariectomized diabetic rats.**

### **ABSTRACT**

Sixty albino female rats were divided into 6 groups, 10 rats in each group, and were classified as follows: group I (sham group), group II (sham received myrtus and omega-3), group III (ovariectomized group), group IV (ovariectomized group treated with myrtus and omega-3), group V (ovariectomized diabetic group) and group VI (ovariectomized diabetic group treated with myrtus and omega-3). Plasma 15-lipoxygenase (15-LOX), 5-lipoxygenase (5-LOX), lipoxin-A4 (LXA4), von Willebrand factor (vWF), glucose, insulin and lipid profile were estimated. Superoxide dismutase (SOD), malondialdehyde (MDA) and catalase activity (CAT) enzymes were measured in pancreatic tissues. Also histopathology for pancreatic tissue was done. Using a combination of *Myrtus communis* extract and omega-3 induced significant decrease in the plasma level of 15-LOX, 5-LOX, vWF, MDA, CAT, glucose, LDL, triglyceride and cholesterol in all treated groups, whereas induced significant increase in lipoxin-A4, SOD and HDL.

We concluded that diabetes induced metabolic disturbances could get worse after ovariectomy due to oxidative stress and inflammatory condition. Whereas a combination of *Myrtus communis* serving as antioxidant agent due its highly content from flavonoids and phenolics compounds and omega-3 has potential effects in reducing endothelial dysfunction furthermore oxidative stress and inflammation associated with diabetes mellitus.