Myrtus communis extract attenuates atherosclerosis in streptozotocin-induced diabetic rats.

ABSTRACT

Atherosclerosis is the most common complication of diabetes, hyperglycemia induced alteration in the lipoxygenase pathway that involved in arachidonic acid (AA) metabolism which is associated with increased oxidative stress and inflammatory mediators that implicated in pathogenesis of atherosclerosis. *Myrtus communis* (Myrtle) leaves were used as anti-hyperglycaemic and anti-inflammatory agent as well as it suppresses the formation of reactive oxygen species. Aim of the work: This study aimed to evaluate the potential effect of *Myrtus communis* extract on the risk of atherosclerosis in experimental diabetes. Forty female rats were used in this study and divided into four groups: group I (control group), group II (Myrtle group), group III (diabetic group) and group IV (treated group). In this study, administration of streptozotocin (STZ) significantly increased fasting blood sugar accompanied by a significant decrease in fasting serum insulin, in addition to a significant increase in serum lipoxygenases (LOX) 5-LOX, 15-LOX and Lipoxin A4 compared to the control group. Also, STZ administration significantly decreased aortic tissue antioxidant parameters such as superoxide dismutase (SOD) and catalase (CAT) and significantly increased malondialdehyde (MDA) compared to the control group. Our data revealed that oral administration of *Myrtus communis* significantly decreased fasting blood sugar level, increased fasting insulin level, decreased 5-LOX, 15-LOX and Lipoxin A4 significantly decreased tumor necrosis factor alpha (TNF-α) in treated group compared to the diabetic group. In conclusion, *Myrtus communis* extract is a promising agent that helps in protecting against atherosclerosis in diabetes mellitus due to its anti-hyperglycemic, anti-oxidant and anti-inflammatory properties.