

Flaxseed and endotoxic shock.

Kailash Prasad

[+ Author Information](#)

Abstract

The pathophysiology of endotoxic shock is complex. This review emphasizes the role of reactive oxygen species (ROS) in the pathophysiology of endotoxic shock and the effectiveness of flaxseed in amelioration of the deleterious effects of endotoxic shock on the cardiovascular function and health of the tissue. Endotoxic shock is associated with reduction in the cardiac function measured by cardiac index and left ventricular work index, cardiac contractility measured by dp/dt (rate of change of left ventricular pressure development), dp/dt at CPIP/PAW, where CPIP is common peak isovolumetric pressure and PAW is pulmonary arterial wedge pressure, arterial pressure, and cellular damage measured by increased plasma creatine kinase and elevated plasma lactate. It is also accompanied by increases in the generation of ROS by polymorphonuclear leukocytes, and cardiac lipid peroxidation product malondialdehyde (MDA) (cardiac MDA) and reduction in antioxidant reserve and antioxidant enzyme activity. Dimethylthiourea an antioxidant, prevented/reduced the endotoxic shock-induced changes in the cardiac function and contractility, arterial pressure, ROS generated by polymorphonuclear leucocytes; MDA, antioxidant reserve and antioxidant enzyme activity of cardiac tissue, and cellular health. Flaxseed which has antioxidant component ameliorated the endotoxic shock-induced changes in the cardiac function and contractility, arterial pressure, oxidative stress parameters and cellular health. In conclusion, the data suggest that ROS may play a role in the pathophysiology of endotoxic shock and that flaxseed, an antioxidant may have a role in the treatment of endotoxic shock.