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Abstract

The Effect of Pomegranate Extract on Survival and Peritoneal Bacterial Load in Cecal Ligation and Perforation Model of Sepsis Rats

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Abstract:
Sepsis is one of the major causes of death in intensive care units. Oxidative stress and hyper-inflammation has been shown to be major cause of mortality and morbidity in septic cases. Pomegranate is a fruit which is considered for its antioxidant and anti-inflammatory properties. The aim of this study was to evaluate the effect of POMx, a standard pomegranate extract, on mortality and peritoneal bacterial load in cecal ligation and perforation (CLP) model of sepsis in rats. Male wistar rats were divided into four groups: sham; CLP; prevention [consumed POMx (250mg of polyphenols/kg/day) for 4 weeks and subjected to CLP]; treatment [subjected to CLP and then received a single drink of POMx (250mg of polyphenols/kg)]. Sepsis was induced by CLP surgery. Ten day survival rate of all groups (subdivided into with and without antibiotics subgroups) were recorded. Peritoneal bacterial load of animal were also assessed.Data were analysed using log-rank and Kruskal-Wallis tests. There were no significant differences in survival rates of CLP, prevention and treatment groups, in subgroups without antibiotics. However, in subgroups with antibiotics, the prevention group had significantly lower survival rate than sham group ($p<0.05$). Conversely, the bacterial load of prevention and treatment group were significantly higher than sham group ($p<0.01$).In conclusion our study demonstrated that pomegranate extract could increase mortality rate via increasing peritoneal cavity bacterial load, in CLP model of sepsis. More studies to assess mechanisms of this effect are warranted.

Biography:

Shahryar Eghtesadi received Bachelor degree in Nutrition Science and Food Chemistry 1975, from Shahid Beheshti University of Medical Sciences, Tehran; MSPH degree in Nutrition, 1977, from Tehran University of Medical Sciences, Tehran and PhD from University of California at Davis(UCD), USA, in Nutrition (1985). He served as Visiting Scientist in USDA Human Nutrition Research Center on Aging (HNRCA), at Tufts University ,Boston, USA (1994-1995); Full professor of Tabriz, Iran and Tehran Universities of Medical Sciences and currently serves as Professor of Azad University, Science & Research Branch . He was the chairs of Departments of Nutrition and

Biochemistry, Biochemistry & Clinical Nutrition, Public Health Nutrition and Nutrition in aforementioned Universities. Also Served as Associate Dean and Dean of School of Public Health & Nutrition and School of Public Health of Tabriz and Iran Universities of Medical Sciences respectively.He was selected as distinguished professor and Scientist in preceding universities. For long and extended period of time, experienced teaching various courses in nutrition in undergraduate, graduate and postgraduate and international Bureau programs and directed many projects and dissertations of MS and PhD programs and Published numerous peer reviewed articles in journals and also edited several books and finally served as Principal Investigator of World Bank Project for Capacity Building in Nutrition in Iran.

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