

ABSTRACT

Introduction : Persistent hyperglycemia in the diabetes melitus may lead to several complications including diabetic cardiomyopathy. This complication is characterized with ultrastructural changes and cardiac dysfunction. Endoplasmic reticulum (ER) stress also plays important role in the pathogenesis diabetic cardiomyopathy. We investigate the role of free radical scavenger in the pathogenesis of diabetic cardiomyopathy

Method :Diabetic cardiomyopathy were asessed by echocardiographic record, TUNEL and Azan Mallory analysis. Further confirmation of ER stress markers were analyzed by western blot.

Result : Cardiac function, myocardial fibrosis and apoptotic cell were significantly observed in the diabetic mice on the 56 days after STZ injection. Edaravone 3 or 10 mg/kg BW administered for 28 days significantly improved cardiac function, myocardial fibrosis and apoptosis. Furthermore, GRP78 and TRAF2 were significantly upregulated along with the CHOP and caspase-12 in the diabetic mice and edaravone significantly prevent the mice from the ER stress

Conclusion : In conclusion, ER stress was activated in the diabetic cardiomyopathy and targeting ER stress becomes novel strategy in the diabetic cardiomyopathy treatment. Edaravone gives beneficial role in the diabetic cardiomyopathy, at least in part, through the inhibition of ER stress.

Keywords: free radical scavenger, diabetes mellitus, cardiomyopathy, endoplasmic reticulum stress, GRP 78