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Therapeutic Effects of Chard (*Beta Vulgaris* L. Var. Cicla) Aganist Erectile Dysfunction and Cardiac Hemodynamic Changes Caused by Diabetes Mellitus in Rats

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In this study the therapoetic effects of chard (Beta vulgaris L. var. cicla) aganist erectile function and cardiovascular parameters in diabetic rats were investigated. Sprague Dawley rats were divided into sham-operated or 65 mg/kg STZ diabetic groups, in which rats recieved either per oral chard extract (2 g/kg) or s.c. insulin (6U/kg/day) starting on by the 15'th day of the diabetes for 45 days. Blood pressure and intracavernosal pressure recording and echocardiographic imaging were made to evaluate erectile and cardiovascular functions. At the end of the 8'th week, the animals were decapiated and blood and tissue (heart, aort, corpus cavenosum) samples were taken. Diabetes mellitus caused a decrease in left ventricular function but had no effect on blood pressure and intracavernosal pressure. Diabetes mellitus also decreased GSH levels, increased MDA levels in the heart, aort and corpus cavernosum tissues, indicating the presence of oxidative tissue damage in peripheral target tissues. Furthermore, elevated cGMP, NO, luminol, lucigenin levels were determined in the tissue. In addition, ADMA, NO_2-/NO_3- and LDH levels were increased in serum samples. On the other hand, 45 days-treatment with chard extract reversed all the measured parameters, ameloriated the diabetes-induced oxidative injury in the target organs and improved cardiac functions.

Key words: Diabetes mellitus, oxidative stress, chard (*Beta vulgaris* L.var. cicla), intracavernosal pressure, echocardiographi, rat