

# Cardioprotective effect of aqueous extract of *Chichorium intybus* on ischemia-reperfusion injury in isolated rat heart.

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## Abstract

### OBJECTIVE:

Several studies have shown that *Chichorium intybus* (*C. intybus*) which possesses flavonoid compounds has an effective role in treatment of cardiovascular diseases. Contractile dysfunction mostly occurs after acute myocardial infarction, cardiac bypass surgery, heart transplantation and coronary angioplasty. The aim of the present study was to investigate the effect of aqueous extract of *C. intybus* on ischemia- reperfusion injury in isolated rat heart.

### MATERIALS AND METHODS:

The animals were divided into four groups (Sham, Control, 1 mg/ml and 3 mg/ml of extract) of 8 rats. The aorta was cannulated, and then the heart was mounted on a Langendorff apparatus. Next, a balloon was inserted into the left ventricle (LV) and peak positive value of time derivate of LV pressure (+dp/dt), coronary flow (CF), and left ventricular systolic pressure (LVSP) in pre-ischemia and reperfusion period were calculated by a Power Lab system. All groups underwent a 30-minute global ischemia followed by a 60-minute reperfusion.

### RESULTS:

The results showed that heart rate (HR), coronary flow, and left ventricular developed pressure (LVDP) and rate of pressure product (RPP) significantly decreased in the control group during reperfusion, while these values in the groups receiving the extract (3mg/ml) improved significantly during reperfusion ( $p < 0.001$ ).

### CONCLUSION:

It seems that flavonoid compounds of aqueous extract of *C. intybus* reduce ischemia - reperfusion injuries, suggesting its protective effect on heart function after ischemia.

### KEYWORDS:

*Chichorium intybus* L.; Heart Contractility; Ischemia-Reperfusion; Rat