

GW23-e0430

LUTEOLIN LIMITS INFARCT SIZE AND IMPROVES CARDIAC FUNCTION AFTER MYOCARDIUM ISCHAEMIA/

doi:10.1136/heartjnl-2012-302920a.104

Dongdong Sun, Feng Cao, Haichang Wang. *Department of Cardiology, Xijing Hospital, Fourth Military Medical University*

Objectives The present study was to investigate the effects and mechanism of Luteolin on myocardial infarct size, cardiac function and cardiomyocyte apoptosis in diabetic rats with myocardial ischaemia/reperfusion (I/R) injury.

Methods Diabetic rats underwent 30 min of ischaemia followed by 3 h of reperfusion. Animals were pretreated with or without Luteolin before coronary artery ligation. The severity of myocardial I/R induced LDH release, arrhythmia, infarct size, cardiac function impairment, cardiomyocyte apoptosis were compared. Western blot analysis was performed to elucidate the target proteins of Luteolin. The inflammatory cytokine production were also examined in ischaemic myocardium underwent I/R injury.

Results Our results revealed that Luteolin administration significantly reduced LDH release, decreased the incidence of arrhythmia, attenuated myocardial infarct size, enhanced left ventricular ejection fraction and decreased myocardial apoptotic death compared with I/R group. Western blot analysis showed that Luteolin treatment up-regulated anti-apoptotic proteins FGFR2 and LIF expression, increased BAD phosphorylation while decreased the ratio of Bax to Bcl-2. Luteolin treatment also inhibited MPO expression and inflammatory cytokine production including IL-6, IL-1 α and TNF- α . Moreover, co-administration of Wortmannin and Luteolin abolished the beneficial effects of Luteolin.

Conclusions This study indicates that Luteolin preserves cardiac function, reduces infarct size and cardiomyocyte apoptotic rate after I/R injury in diabetic rats. Luteolin exerts its action by up-regulating of anti-apoptotic proteins FGFR2 and LIF expression, activating PI3K/Akt pathway while increasing BAD phosphorylation and decreasing ratio of Bax to Bcl-2.