

[gw22-e0940]

**RESVERATROL ATTENUATES MYOCARDIAL ISCHEMIA/REPERFUSION INJURY VIA UPREGULATING ADIPONECTIN LEVEL AND MULTIMERISATION IN TYPE 2 DIABETIC MICE**

Qiang Yang, Chao Gao, Haifeng Zhang, Yi Liu, XiaoYan Lu, Shidong Feng, Jingyi Liu, Peilin Liu, Han Wang, Sun Lu, Yang Lu, Haichang Wang, Ling Tao *Department of Cardiology, Xijing Hospital, Center of Teaching Experiment, Fourth Military Medical University, Xijing, China*

10.1136/heartjnl-2011-300867.85

**Objectives** type 2 diabetes (T2DM) exacerbated myocardial ischemia/reperfusion (MI/R) injury, accompanied by significantly lower adiponectin (APN) level and diminished APN multimerisation. Resveratrol, a natural polyphenol, promotes APN up-regulation and multimerisation both in adipocytes and mice by up-regulation of DsbA-L (a recently identified protein that facilitates APN multimerisation and stability). Therefore, the present study aimed to observe whether RSV attenuates MI/R injury in T2DM, and if so, to further investigate the underlying mechanisms.

**Methods** T2DM was induced by high-fat diet (HD) feeding plus low-dose streptozotocin (STZ) injection. Mice received an HD since three weeks old for eight weeks. After three weeks of HD feeding, mice were intraperitoneally injected with 100 mg/kg STZ (Sigma). T2DM was confirmed by markedly elevated fasting-blood glucose level ( $>11.1$  mmol/l) five weeks after injection. Mice were treated with 10 mg/kg RSV daily by intragastric administration for three weeks since five weeks of HD feeding. Compound C (an AMPK inhibitor) was administrated by intraperitoneal injection with 20  $\mu$ g/g one h before MI/R. Mice were subjected to 30 min of ischemia and three h or 24 h of reperfusion.

**Results** HD feeding plus low-dose STZ injection successfully induced T2DM. Compared to normal control, diabetic mice manifested higher fasting-blood glucose level, lower glucose tolerance in OGTT examination ( $n=12$ ,  $p<0.05$ ), but there

## Abstracts

was no difference in plasma insulin levels. RSV alleviated MI/R injury in both normal and diabetic mice, as evidenced by decreased infarct size, cardiomyocytes apoptosis, caspase-3 activity, improved cardiac function (n=10, all p<0.05). Moreover, RSV treatment improved APN level, upregulated APN multimerisation both in plasma and adipose tissue, and increased DsbA-L expression in adipose tissue in diabetic mice (all p<0.01). Conversely, administration of AMPK inhibitor Compound C significantly attenuated the cardioprotective effects of RSV (all p<0.05).

**Conclusions** RSV upregulates adiponectin level and multimerisation in both plasma and adipose tissue in T2DM, and therefore attenuates MI/R injury.