**INHIBITION OF LEPTIN RECEPTOR ABOLISHES INTRALIPID-INDUCED CARDIOPROTECTION AGAINST ISCHEMIA- REPERFUSION INJURY**

**N. Motayagheni**, S. Phan, C. Eshraghi, M. Eghbali

UCLA, CA, USA

*Objectives*: We have already shown that Intralipid protects the heart. Here, we examined whether cardioprotective effect of Intralipid (ILP) against I/R injury is mediated, at least in part, through leptin receptor.

*Methods*: Male mice, 2-3 months old were used .Mice were anesthetized after heparinization. The heart was removed immediately and perfused with Krebs–Henseleit at 37°C for 20 min through arota in Langendorff. The heart was then subjected to 20 minutes of global normothermic ischemia followed by 40 min reperfusion with Kreb Buffer.A catheter was directly inserted into the left ventricle (LV) to measure cardiac function .At the end of the experiments, the hearts were cut into four transverse slices and the infarct size was measured using triphenyltetrazolium chloride (TTC) staining.

*Results:* Adding ILP during reperfusion significantly improved cardiac function at the end of 40 min reperfusion in control group. In the presence of leptin receptor antagonist, ILP failed to protect the heart as the heart had no detectable activity at the end of 40 min reperfusion. The maximum rate of LV pressure rise (dP/dtmax) was also significantly lower in ILP+leptin receptor antagonist group (90±32 mmHg/s), compared to ILP group (2703±145 mmHg/s) or even control group (448±224 mmHg/s, p<0.01 vs. ILP and control). Consistent with much lower functional recovery in ILP-leptin receptor antagonist group, the infarct size was also significantly larger in ILP+leptin receptor antagonist group compared to ILP group.

Conclusions: Our data demonstrates for the first time that leptin receptor is involved in cardioprotection offered by ILP against I/R injury, as ILP fails to protect the heart in the presence of leptin receptor antagonist. Summary: Inhibition of leptin receptor abolishes ILP-induced cardioprotection against I/R injury.