Methods

Pigs were anesthetized and cardiogenic shock was induced by inflation of a PCI-balloon in the proximal LAD for 40 minutes followed by reperfusion. Pigs were randomized to hypothermia (33°C, n=6) or normothermia (38°C, n=6). microRNAs were measured with quantitative real-time PCR.

Results

miR-122 was found to be highly liver specific whereas miR-208b was expressed exclusively in the heart. In the control group ischemic cardiogenic shock induced a 460.000-fold and a 63.000-fold increase in plasma levels of miR-122 (p<0.05) and miR-208b (p<0.05), respectively.

However, alanine transaminase (ALT) increased less than 3-fold (p<0.0001) indicating minor tissue necrosis.

Peak Ct-values of miR-122 correlated significantly to mean arterial pressure (p=0.04, r=0.59) and stroke volume (p=0.02, r=0.67) at 150 minutes, respectively. The peak Ct-value of miR-122 correlated also to the peak level of pH (p=0.02, r=0.66)

Therapeutic hypothermia significantly diminished the increase of miR-122 compared to the normothermic group (p<0.005).

Conclusions

Our results indicate that liver-specific miR-122 is released into the circulation in the setting of cardiogenic shock. Therapeutic hypothermia significantly reduces the levels of miR-122. Therapeutic hypothermia might be liver protective during cardiogenic shock but this needs further evaluation.


Disclosures: Nothing to declare