Abstract: *P476*

**Intraventricular measurement of electrophysiological parameters in pre- or post-conditioned myocardial infarction**

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**Topic(s):**
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**Background:** Short episodes of ischemia prior to (=Preconditioning, IPC) or following (=Postconditioning, PostC) acute myocardial infarction (AMI) have been shown to mitigate damage to the myocardium, especially relating to ischemia-reperfusion injury. The effect of such ischemic conditioning on ECG parameters is poorly understood. We have used an intraventricular catheter to record the electrophysiological effects of IPC + AMI and AMI with/without PostC in real-time.

**Methods:** Domestic pigs were split into 3 groups: IPC-AMI (n=6), AMI-PostC (n=4) and AMI-control (n=5). IPC was accomplished by 3 cycles of 5 min ischemia/reperfusion (I/R) prior to infarction. Myocardial infarction was induced via percutaneous inflation of a balloon in the mid LAD for 90 minutes. PostC was done by inflating and deflating the balloon for 6x30 second cycles of I/R immediately after infarction. A NOGA endocardial mapping catheter was positioned in the left ventricle to measure a single point of myocardium for the entire procedure. Intraventricular R-Amplitude, ST-Elevation, QRS width and QT time were measured in every minute. The corrected QT time (QTc) was calculated according to the Framingham heart study adjusted QT time method. Infarct size and LV function were assessed with cardiac MRI + late enhancement at 1-month follow-up.

**Results:** Both IPC and PostC led to higher R-Amplitudes after reperfusion (IPC 1.05 (0.53-1.71) vs. PostC 1.07 (0.83-1.41) vs. AMI 0.57 (0.37-0.84), Median(IQR), mV, p=<0.001) (Fig. 1). Interestingly, PostC led to significantly lower maximum ST-Elevation after reperfusion than IPC or AMI (PostC 1.10 (0.30-1.40) vs. IPC 1.94 (1.33-2.30) vs. AMI 1.60 (1.30-2.20), Median(IQR), mV, p=0.001). The QRS width did not change in the 3 groups, indicating no intracardiac conduction abnormality. MRI+LE resulted in significantly better LV ejection fraction and smaller infarct size in group IPC-AMI compared to AMI-control and AMI-PostC groups.

**Conclusion** Compared to the PostC group, IPC led to decreased myocardial damage and better LV function after infarction. Both IPC and PostC led to higher R-Amplitudes after reperfusion, possibly indicating preserved electrophysiological function of myocardial cells. PostC led to significantly lower maximum ST-Elevation after reperfusion.
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