MYOCARDIAL FUNCTION AND INFARCTION FOLLOWING 15 AND 45 MINUTES OF REGIONAL ISCHEMIA IN THE RABBIT. H.N. Mayrovitz, A. Cideciyan, R.N. Sampsell, J. Moore, and E. Herscovici. Miami Heart Institute, Miami Beach, FL 33140.

In dogs, 15 min of myocardial ischemia results in stunning, whereas 90 min and beyond causes prolonged deficits and infarction. Our aim was to characterize the effect of two ischemic levels on regional function and infarct in rabbits, reported to have much less collateral flow reserve. In anesthetized, open chest rabbits a coronary artery (CA) was occluded for 15 (n=8) or 45 min (n=12) and then reperfused for 6 hours. Prior to termination, the previously occluded CA was re-octoccluded and fluorescent microspheres were injected to outline the myocardium at risk. Infarct was determined by NBT staining. Function was assessed with epicardial Doppler crystals and myocardial thickening determined on-line via microcomputer data acquisition and analysis. Results show that although the functional deficit (expressed as % of baseline) was similar for both ischemic levels (−1.2 ± 0.8 vs −1.6 ± 0.7), animals exposed to 15 min of ischemia all recovered to 100% within one hr, whereas no 45 min ischemic animal improved to more than 20%. Also, 15 min ischemia caused no hemorrhage or infarct, but animals with 45 min ischemia had both, and an infarct/risk of 47 ± 3. These results show a narrow ischemic time window whereby the rabbit may be used either as a stunning or an infarct model.

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