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IKS REDUCES VENTRICULAR ARRHYTHMIA DURING CARDIAC ISCHEMIA AND REPERFUSION IN RABBITS BY ENHANCING THE REPOLARISATION RESERVE

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Objectives To understand the function of the repolarisation reserve provided by slowly activated delayed rectifier potassium current (I_{Ks}) in the prevention of ventricular arrhythmias during cardiac ischemia/reperfusion.

Methods The responses of monophasic action potential duration (MAPD) prolongation and triangulation were investigated following an L-768, 673-induced blockade of I_{Ks} (L-768, 673 or vehicle) with or without ischemia/reperfusion (IR or Sham) in a rabbit model of left circumflex coronary artery occlusion/reperfusion.

Results MAPD90 and MAPD60 of Group IR+L-768,673 were significantly prolonged during reperfusion and Triangulations of Group IR+L-768, 673 were increased by 31.1%, 26.5%, 19.3% at the time point of reperfusion 45 min, 60 min and 75 min respectively, when compared with those of Group IR+vehicle. Within this period, the median number of premature ventricular beats increased by 4.6-fold in comparison with that of Group IR+vehicle ($p<0.05$) and a higher ventricular tachycardia incidence was detected in Group IR+vehicle than IR+vehicle (4/8 vs 1/8, $p>0.05$).

Conclusion Blockade of I_{Ks} caused MAP triangulation, which precipitated ventricular arrhythmias.