Effects of Nipradiol (K-351) on Cardiac Function in Anesthetized Open-Chest Dogs

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ABSTRACT Effects of nipradiol (K–351) on cardiac performance and myocardial oxygen consumption were investigated in anesthetized open–chest dogs. Nipradiol 0.1 mg/kg i.v. induced falls in systolic and diastolic aortic blood pressure and left ventricular pressure, and decreases in cardiac output, coronary sinus outflow, left ventricular dP/dt and heart rate. Stroke volume was transiently increased and left ventricular stroke work index was significantly decreased, while left ventricular mechanical efficiency was not significantly changed. Myocardial oxygen consumption was significantly decreased. Total peripheral vascular resistance and coronary vascular resistance were persistently increased. Left ventricular enddiastolic pressure was not significantly changed. These results suggest that nipradiol has a possible antianginal property through a decrease in myocardial oxygen consumption due to a fall in aortic blood pressure and a decrease in heart rate.

抄録 麻酔開胸犬における心機能と心筋酸素消費に及ぼすニプラジールの効果を検討した。0.1 mg/kg i.v. のニプラジール投与で収縮期、拡張期血圧の低下、左心室圧低下、心拍出量、冠静脈洞流量、左心室 dP/dt、心拍数の減少が発生した。しかし、心収縮力は有意に変化しなかった。心筋酸素消費は減少した。末梢血管抵抗および冠動脈抵抗は増大した。左室拡張期圧は不変であった。以上の結果はニプラジールが狭心症治療等に適していることを示している。

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