V. Metabolism

Effects of Propranolol and Isoproterenol on Myocardial Metabolism in Dogs

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Effects of Propranolol and Isoproterenol on glucose and palmitic acid oxidation in myocardium were studied in dogs by using glucose U-S and palmitic acid I-C.

Ten minutes after the injection of Propranolol or Isoproterenol, 100 Ci 05 glucose U-C or palmitic acid I-C was administrated intravenously. Arterial and coronary sinus blood samples were collected 3, 15, 30 and 60 minutes after the injection of C-substance and CO of blood was absorbed into β-phenecylamine in a vial by the method of Vanslyke-Neil and phenecylamine solution obtained Co was suspended in 10ml of Toluene scintillator. Radioactivity of CO was determined by using liquid scintillation counter. Measurement of coronary blood flow was performed by using Kr method. As results, cumulative % of glucose U-C converted into CO in 60 minutes was 1.0% in control and 0.8% in the case of Propranolol injection, cumulative % of palmitic acid I-C converted into CO in 60 minutes was 4.0 % in Isoproterenol injection. From these observations it seems that Propranolol degucose and fatty acid oxidation in myocardium and its diminution is large in fatty acid metabolism.

Autoradiographic Studies on Mucin Metabolism of Human Gastro-Intestinal Epithelium Using 3H-Glucose and 35SO4

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We have already reported on the mucin metabolism of human and rat stomach, studied by means of 35SO4 autoradiography. In the gastric epithelium three types of mucin, i.e. neutral, sulfated and non-sulfated acid mucin are present. To demonstrate the metabolism of all three types of mucin, we injected 3H-glucose and examined the distribution of the label comparing with the results of 35SO4 autoradiography. The double labeling method with 3H-glucose or 3H-thymidine and 35SO4 was employed in many cases. This method enabled to examine the mucin metabolism of generative cells. 3H-glucose autoradiography