

THE HANDLING OF IMMUNOREACTIVE INSULIN BY THE MYOCARDIUM

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The role of insulin in vivo in myocardial metabolism requires clarification. A particular problem here is how the myocardium handles the insulin presented to it in coronary artery blood. For this reason insulin has been examined in arterial and coronary sinus blood. Significant arterio-venous differences in insulin immunoreactivity have been detected across the coronary circulation. In man, at high arterial insulin levels, whether endogenous (during a simulated fed state) or exogenous (during insulin infusion), insulin is taken up by the heart. At low levels, insulin is released from the heart. The difference in immunoreactivity between arterial and coronary sinus blood cannot be accounted for by plasma water shifts as judged from ^{125}I -albumin radioactivities in these samples. Parallelism of radioimmuno-assay curves for arterial and coronary sinus plasma insulin in dilution suggests that insulin is unchanged during uptake and release. In dogs, the studies have been extended to examine the effect of "preloading" the myocardium with insulin on subsequent insulin release. So far it has not been possible to show that myocardial handling of insulin is a determinant of myocardial carbohydrate metabolism.

Abstracts

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