Fundamental and Clinical Studies of Myoglobin RIA Kit

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The diagnosis of acute myocardial infarction (AMI) is ordinarily based on a characteristic clinical history and typical electrocardiographic (ECG) and serum enzyme findings. However, these data are insufficient to establish the diagnosis in all patients. Substantial evidence acquired during the past few years has indicated that damage to the cardiac muscle mass might result in the release of myoglobin as well as various intracellular enzymes into the circulation. Firstly, fundimental studies of myoglobin RIA kit was done. Intraassay and interassay reproducibility was satisfactory; CV were 4.8% and 5.0%, respectively. Myoglobin was detected in 20 sera from normal adults and ranged between 31.2 and 74 ng/ml. Ievels were markedly elevated in sera from 4 patients with acute myocardial infarction when samples were obtained within 6 h after hospital admission, the mean peak concentration being 700±100 ng/ml. Thus, it was found that radioimmunoassay of serum myoglobin appears to be a useful and sensitive test for the early detection of myocardial infarction.

A CONVENIENT METHOD FOR THE EVALUATION OF LEFT VENTRICULAR FUNCTION

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A routine system was studied of obtaing the ECG gated pool images(GPI) with a multiformat imager(MF), and the left ventricular volume curve(LVVC), at high temporal resolution (10 msec), with a minicomputer system(MCS), It was desired that immediately following RI angiocardiography the system was utilized. Using a ECG R or EXTRA wave trigger device (RTD), and TC-99m albumin 10mCi, for the construction of GPI, MF was synchronized to RTD and recording serial gated images until 500k counts / 8 minutes, selected time interval per frame frome 60 to 100msec under 12 frames per a cadiac cycle. Using gated method, end-diastolic and end-systolic images were acquired with MCS in image mode as a model for selecting the left ventricular or background area. Digital data of only left ventricular region with background, R signal from RTD and 10msec signal were accumlated in MCS in list mode. Using this technique, the capacity of magnetic disk(3M Bytes) was saved and data could be processed 30.000 events per second. But the R signal had no function for resetting internal clock, and so was different from it at gated analysis. Using count rate method without the reconstruction of these images, LVVC frome ECG P wave was assessed in as little as 3 min.
In order to obtain the background activity an area of interest was selected immediately lateral to the left ventricle, but not overlapping the pulmonary artery.
Result: The abnomalities of left ventricular wall motion could be detected by GPI. The useful quantitative indicators of left ventricular movement were obtained as ejection, pre-ejection period, left ventricular ejection time, relative volume velocity curves, etc.