117

DETECTION OF TRANSIENT MYOCARDIAL ISCHEMIA BY THALLIUM SCINTIGRAPHY, ECG CHANGE AND CHEST PAIN IN SINGLE VESSEL CORONARY DISEASE.

T.HONMA,M.SAITO,T.UCHIDA,T.SUMIYOSHI, K.FUKAMI,K.HAZE,K.HIRAMORI,T.UEHARA, K.HAYASHIDA,T.NISHIMURA,T.KOZUKA. NATIONAL CARDIOVASCULAR CENTER. OSAKA.

Quantitative anlysis of exercise Thallium scintigraphy(ExSG) was compared to ST change and chest pain as the diagnostic adjuncts for myocardial ischemia in 68 patients with single vessel coronary disease and no previous MI. Sensitivity of ExSG for detection of ischemia was higher than ST changes and chest pain;that is, 84%,64%,57% in LAD disease; 75%,83%,58% in RCA disease and 73%,64%,45% in LCX disease, respectively. In LAD disease,diagonal lesion was highly detectable in central area of LAO views. The extent of redistribution(%RD) was higher and the wash out rate was lower in patients with 99-100% stenosis compared to those with 75-90% stenosis in LAD disease,however, no correlation was observed between %RD and ΔST(mm). Sensitivities increased with the severity of coronary stenosis in all three diagnostic methods,however,ExSG had highest sensitivity among three.
The results indicate that ExSG is useful nethod for diagnosis of localization and severity of myocardial ischemia.

118

USEFULNESS OF MYOCARDIAL Tl-201 WASHOUT RATE NORMALIZED BY PEAK HEART RATE IN DETECTING CORONARY ARTERY STENOSIS.

Y.Tsuneoka, Y.Ishida, BH.Kim, T.Hiraoka, M.Fukushima, M.Matsumoto, M.Inoue, H.Abe, Y.Nakamura*, Y.Kusumi*, K.Kimura*. The 1st Dept. of Med. and the Div. of Nucl. Med.*, Osaka Univ. Sch. of Med., Osaka.

It has been reported that a decrease in washout rate(WR) of Tl-201 from myocardium was sensitive but not specific index to detect coronary artery stenosis(CAS) because a decrease in WR was sometimes observed in normals(NL). In this study, to improve the specificity in detecting CAS with WR, segmental WR were calculated from left anterior oblique images obtained at 5 minutes and 2.5 hours after exercise in 24 NL and regression analysis was used to examine the major determinants of WR in NL. RESULT: WR was significantly correlated with peak heart rate(pHR) and double product during exercise(r=0.69, p 0.01 in both). Then, the lower limits of normal WR were determined with(A) and without(B) a use of WR normalized by pHR using the regression equation between pHR and WR respectively. And 114 segments in 38 cases with CAS, in which 81 segments were perfused by stenotic vessels, were studied to validate these lower limits of normal in detecting CAS. In result, specificity was improved in (A) (100%) compared to (B)(79%) without sacrificing sensitivity(88% in both). Thus, we conclude that a use of predicted lower limit of normal WR normalized by pHR is useful in detecting CAS.

119

RELATION OF TIME TO COMPLETE REDISTRIBUTION TO THE SEVERITY OF CORONARY ARTERY DISEASE.

T.Nishimura,T.Uehara,K.Hayashida,T.Kozuka, T.Sumiyoshi,M.Saito. National Cardiovascular Center, Osaka.

The relation between the severity of coronary artery disease and the time to complete redistribution(RD) was investigated in 66 patients with angina pectoris(AP) (28 SVD, 18 DVD and 20 TVD) and 104 patients with myocardial infarction(MI) (45 SVD, 36 DVD and 23 TVD). Stress thallium scan was performed immediately, 30 minutes (early) and 4 hours (delayed) after exercise. Early RD was observed in 15 (23%) of AP and 3 (3%) of MI cases. In both groups, the incidence of early RD was higher in SVD compared to DVD and TVD. And, diffuse slow washout calculated from exercise and RD study disturbed the incidence of early RD in DVD and TVD. In the early RD cases of AP, coronary stenosis showed mild and collateral was not correlated, however, in the complete or incomplete RD of MI, coronary stenosis showed severe (>90%) and the incidence of collateral was higher compared to no RD cases. In conclusion, early RD was observed about 20% of coronary artery disease and the time to complete RD was closely related to the severity of coronary artery disease.

120

SIGNIFICANCE OF EXERCISE INDUCED ST SEGMENT CHANGES IN RELATION TO THE RESIDUAL MYOCARDUM WITHIN THE INFARCT AREA.

T.Shimizu, M.Ozaki, T.Ikezono, T.Yamagishi, Y.Furutani, Y.Matsuda, T.Kumada and R.Kusukawa. 2nd Dept. of Internal Med., Yamaguchi university, Ube.

We compared ST changes during exercise with exercise-3hr delayed Tl-201 scintigraphic, coronary arteriographic and left ventriculographic findings in 32 patients(pts) with myocardial infarction without significant stenosis in other coronary arteries.Tl-201 images were evaluated by the following parameters; redistribution score(RS) was obtained from the area between exercise- and 3hr-circumferential profiles; washout rate(WOR) in the infarct area was obtained using ROI method. Results were as follows; (1) of 9 pts without ST changes, only 2(22%) had abnormal RS and none had abnormal WOR and collateral vessels supplying to the infarct area. (2) of 13 pts with ST depression, all had collateral vessels, 11(85%) had abnormal RS and 10(77%) had abnormal WOR. (3) of 10 pts with ST elevation, 6(60%) had abnormal RS and 4(40%) had abnormal WOR. 4(67%) of 6 pts with normal WOR and 2(50%) of 4 pts with abnormal WOR had dyskinesis or aneurysm at resting left ventriculography. These data suggest that ST depression means the transient ischemia and ST elevation means the transient ischemia and/or advanced wall motion abnormality. The presence of collateral vessels indicates the presence of viable but jeopardized myocardium in the infarct area.

Presented by Medical*Online