104

MYOCARDIAL ISCHEMIA OF INFARCTED AREA AS A MECHANISM OF POST-MI ANGINA PECTORIS;A STUDY ON STRESS MYOCARDIAL SCINTIGRAPHY IN PATIENTS WITH SINGLE VESSEL DISEASE. M.Saito, T.Sumi-yoshi, K.Kanno, M.Kawataki, J.Koda, K.Haze, K.Fukami, K.Hiramori, T.Uehara,K.Hatashida, T.Nishimura, T.Kozuka. National Cardiovas-cular Center, Osaka.

We aimed to investigate a role of myocard-ial ischemia(M-Is) of infarcted area(IA) re-presented by thallium redistribution(RD) in stress myocardial scintigraphy(SMS) as a possible mechanism of post-myocardial infar-ction(p-MI) angina pectoris(AP). Ninety-nine patients(pts) who underwent SMS, left ventr-iculography and coronary arteriography(CAG) which revealed single vessel disease or MI with normal CAG; 44 had anterior MI(A-MI), 21 had infero-posterior MI and 34 had AP without previous MI. Among those with A-MI, 16 had typical p-MI AP(group A), 13 had a-typical chest pain while 15 had no history of p-MI AP. SMS was quantitatively analyzed by ROI counting method.
  Pts in group A had less extent of myo-cardial defects(74.3±12.2% of normal region, m±SD) and higher RD(+13.5±5.4%) compared to pts in group B(50.4±11.9%, +2.5±4.6%, resp-ectively, p<0.01). Group A pts had less sev-ere LV asynergy, coronary stenosis of $\geq$75% as well as higher rate of positive exercise test compared to group B, suggesting a pos-sible development of M-Is in IA, clinically. These results suggest that thallium RD in infarcted area indicates myocardial ischemia of the area which still has viable myocard-ial mass.

105

FUNCTIONAL IMAGING OF THALLIUM-201 WASHOUT RATIO AND CLINICAL UTILITY. N.Watanabe, K. Machida, J.Nishikawa, T.Ohtake,and M.Iio. Radiology. K.Kawakubo. 2nd Int.Med. Tokyo University. H.Toyama. Tokyo Geriatric Metropolitan Hospital. Tokyo.

In exercise Tl-201 myocardial scan, we developed a quantitative washout ratio(WR) image to detect ischemic segment. The wash-out value was measured with pixel by pixel calculation between counts of intial image and those of delayed 3 hr after injection image. We compared the color displayed functional WR image with the original image in detecting of ischemic segments which were confirmed by coronary angiography.
  In study of 23 patients who were 21 of CAD (with MI 8,without MI 13) and two of normal , the sensitivity of WR image was 83% for diagnosis of ischemia and superior to the sensitivity of original image(79%). As concerns MI segments, 8/9 segments showed lower washout which represented partial re-distribution on the delayed image and 6 of 7 non MI ischemic segments could be detect-ed by the WR image but only 3 detected by the original image. These results indicate that the WR image could provide not only transient ischemia but additional ischemia of MI.
  We conclude that the washout image will be useful in producing a visual indication of ischemic area.

106

QUANTITATIVE ASSESSMENTS OF EXERCISE THALLI-UM-201 MYOCARDIAL PERFUSION IMAGING USING CIRCUMFERENTIAL PROFILE METHOD. S.Sato, Y.Watanabe, I.Tonooka, T.Kanaya, K.Tsuiki, S.Yasui, K.Takahashi and A.Komatani. Yamagata University School of Medicine, Yamagata.

In normal subjects and patients with corona-ry artery disease(CAD), exercise thallium-201 myocardial perfusion imaging was per-formed. We used circumferential profile method to assess the severity of coronary artery stenosis quantitatively and compared with conventional ROI method.Each left ven-tricle image obtained by 4 planar views(RAO 30°,ANT, LAO45°, left-lateral)was divided into 32 segments. Washout rate(WR) and re-distribution index(RDI) were calculated in each segment. In each patient, SD index of each segment was calculated as follows:
SD index= (X-m)/SD (X;RDI at the correspond-ing segment of the patient, m;the mean of RDI in normal subjects, SD; the standard deviation of RDI in normal subjects)
In patients with one-vessel disease (75% or more narrowing in luminal diameter), SD in-dices were over 1.0, whereas those in pa-tients with one-vessel disease (50-75%nar-rowing in luminal diameter)were from 0 to 1.0.
We compared the number of segments where the SD index was over 2.0 with the size of myo-cardial ischemia estimated from coronary angiogram.

107

EVALUATION OF CIRCUMFERENTIAL ANALYSIS OF TL-201 STRESS MYOCARDIAL SCINTIGRAPHY K.Inoue,T.Inoue,T.Ando,K.Yoshimura and M.Murayama. Kantoteishin Hospital,Tokyo.

Tl-201 stress myocardial scintigraphy were performed in 63 patients(44 with coronary artery disease(CAD) and 19 without CAD) to compare the diagnostic value of computer analysis with that of standard visual analysis. At 5 minites and 4 hours after injection, imaging was performed in anterior, 45° left Oblique and left lateral views. 60° left oblique view was also visually analysed. Mean normal profiles were calculated for 24 normal volunteers and lower normal limits were defined as mean-2S.D..
  For detection of CAD, computer analysis has a sensitivity of 84% and a specificity of 84%, whereas visual analysis demonstrated a sensitivity of 86% and a specificity of 79%.
  The data suggested that (1)computer analysis could not improve diagnostic accuracy for CAD, (2)computer analysis was useful in objectivity, reproducibility and independency of observer bias.