199

EVALUATION OF EFFECT OF TRICUSPID ANNULOPLASTY BY CARDIAC POOL SCINTIGRAPHY.

M.Kimura,T.Yamamoto,I.Odano and K.Sakai
Department of Radiology, Niigata University School of Medicine, Niigata.

To assess of effect of tricuspid annuloplasty,cardiac pool scintigraphy was performed in 29 patients who underwent tricuspid annuloplasty (group TAP(+)) and 29 patients who were not underwent (group TAP(-)). By visual imaging diagnosis of tricuspid regurgitation which was dilatation of right atrium(RA),there was 6 false positive in TAP(-) group,the accuracy was 90%. Using first pass radionuclide angiography,RA area (RA cells/BSA) and RV area (RV cells/BSA) were obtained by regions of interest were manually drawn around the RA and RV. RA area was markedly increased in TAP(+) group (289±89 cells/BSA) compared with TAP(-) group (137±28 cells/BSA). RV area was markedly increased in TAP(+) group (197±52 cells/BSA) compared with TAP(-) group (148±25 cells/BSA). RA area and RV area obtained by RI was well correlated with RA volume and RV volume calculated by non-gated cardiac pool ECT (Y=0.93,Y=0.91), we concluded that they were useful to quantify tricuspid regurgitation and effect of tricuspid annuloplasty.

200

EVALUATION OF LEFT VENTRICULAR FUNCTION IN ISOLATED AORTIC REGURGITATION BY EXERCISED ECG GATED BLOOD POOL SCINTIGRAPHY.

E.Katohno,K.Ono,K.Owada,T.Saitoh,S.Suzuki, S.Yanagisawa,A.Fujino,Z.Yamada,M.Komatsu, T.Uchida and S.Kariyone. Fukushima Medical College, Fukushima.

In 15 minimum symptomatic patients with isolated aortic regurgitation (AR), multigated blood pool scintigraphy was performed to evaluate left ventricular function at rest and during exercise. The patients performed supine bicycle exercise beginning at a load of 25W with increase of 25W every 3 minutes, then data were collected during the final 2 min. Changes in left ventricular ejection fraction (EF), peak ejection rate (PER) and time to PER (TPE) were evaluated. LVEF decreased from 62±9% to 59±13% not significantly and PER decreased from 7.1±0.9 to 5.2±1.1 sv/sec significantly, but TPE had no changes. There were no significant differences in LVEF values before and during exercise between the groups with low or high angiographic grade, left ventricular end-systolic volume and end-diastolic pressure, respectively. Retrospectively, in operated cases LVEF and PER highly decreased with exercise compared with not operated cases. The cases with decreased LVEF during exercise showed no good response by aortic valve replacement, while a case with increased LVEF during exercise showed good response. This method is useful in evaluating left ventricular myocardial damage.

201

EVALUATION OF LEFT VENTRICULAR FUNCTION IN THE PATIENTS WITH AVR BY RADIONUCLIDE CARDIO ANGIOGRAPHY.

T.Matsuzaki, T.Kazui, S. Komatsu, T.Tsuda*, M.Kubota*, K.Morita*. Dept. of Thoracic & Cardiovasc Surg. and Radiol*, Sapporo Medical College, Sapporo.

[Materials and Method] We attempted to utilize the RI angiography in assessing the postoperative left ventricular function at rest and / or during exercise in 11 patients who previously underwent AVR for aortic regurgitation. The EF, PER, 1/3EF, TPE and %Δ were assessed and compared with that in control six health aldusts.
[Results] There was no significant difference of EF among these two groups at rest and / or during exercise. Although the PER at rest in the AVR group was greater than that in the control group, the %Δ was not significant. The significant difference of 1/3EF was not demonstrated at rest and / or during exercise, however, the %Δ was significantly low in the AVR group. The TPE in the AVR group was significantly higher than that in the control group during exercise, and %Δ was significantly lower than that in the control group.
[Sumarry] It was concluded from this study that nearly complete recovery of left ventricular function coud be obtained in the AVR group.

202

MEASUREMENT OF FORWARD EJECTION FRACTION IN VALVULAR REGURGITANT DISEASE USING GATED CARDIAC SCINTIGRAPHY

H.Adachi, H.Sugihara, H.Nakagawa, S.Inagaki Y.Kubota, H.Katsume, H.Ijichi, K.Okamoto, T.Miyazaki, T.Ishizu, O.Shimamura and M.Ochiai. Kyoto Prefectural University of Medicine and Rakuto Hospital, Kyoto.

Ejection fraction(EF) is an important index of cardiac function. But in aortic or mitral regurgitation(AR or MR) EF is not always appropriate because LV stroke volume(SV) includes both forward volume to aorta(SVf) and regurgitant volume(SVb). We devised a less-invasive method to obtain forward EF, which is derived from the volume ejected to aorta divided by end-diastolic volume(EDV). Gated cardiac pool scintigraphy(GCS) was performed in 21 patients with AR or MR, divided into two groups by the presence or not of CHF. From both EF and regurgitant fraction(RF) obtained by GCS (RF=1-1.48/SCR,where SCR is stroke count ratio of left and right ventricles), forward EF(fEF) was calculated as follow: fEF=SVf/EDV=(1-RF)xEF, corrected fEF= SVf/(EDV-SVb) =(1-RFxEF)/1-RFxEF. EF and forward EF were compared in two groups.

	CHF- n=8	CHF+ n=13	
EF	60±6 %	57±10 %	ns
fEF	39±17	21±5	p <.01
corrected fEF	47±14	33±9	p <.02

Thus, we concluded that forward EF(fEF and corrected fEF) is obtainable less-invasively from gated cardiac scintigraphy, and is better than EF in evaluating ventricular function of AR or MR.