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LEFT VENTRICULAR AND ENDOCRINAL RESPONSE TO AFTERLOAD REDUCTION BY NIFEDIPINE IN ISCHEMIC HEART.

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To assess the left ventricular and endocrinal response to afterload reduction in the patients with ischemic heart diseases, we performed R wave and S2 gated equilibrium methods and blood sampling in 20 patients with prior myocardial infarction (OMI) and 15 patients with angina pectoris (AP) before and in 30 and 60 minutes after 10 mg nifedipine administration. In OMI group, LVEF, PER and PFR became better in 30 minutes, and NA and PRA in 30 minutes increased. But LVEF and PFR in 60 minutes returned to control values, and NA and PRA showed declining tendency. In AP group, on the other hand, the betterment of LVEF, PER and PFR and increase in NA in 30 minutes were also seen in 60 minutes. We thought this was because the cardiac reserve in OMI was smaller than that in AP. NA and PRA changed secondarily according as blood pressure changed. PER in 60 minutes was increasing in both groups but PFR in 60 minutes was returning or had returning tendency. These data suggest that the influence of afterload reduction appear earlier in left ventricular diastolic function than in systolic function in the patients with ischemic heart diseases.

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RELATION BETWEEN EXERCISE CAPACITY IN PATIENTS WITH EFFORT ANGINA AND LEFT VENTRICULAR DIASTOLIC FUNCTION. H.Nakagawa, H.Adachi, H.Sugihara, Y.Kubota, S.Inagaki, K.Okamoto, H.Katsume and H.Ijichi. The Second Department of Internal Medicine, RI, Kyoto Prefectural University of Medicine, Kyoto.

To evaluate the relation between exercise (Ex) capacity in the patients (pts) with effort angina (EA) and left ventricular (LV) diastolic (diast.) function, we performed Ex RNA and studied LV systolic (syst.) and diast. function at rest and during Ex in 10 pts with good Ex capacity who can endure workloads over 75 watt (G-1; all 1 vessel disease) and 14 pts with poor Ex capacity who developed chest pain with workloads under 50 watt (G-2; 9 had multivessel disease) and compared with 15 normal subjects (C). At rest, no significant difference was shown among 3 groups in syst. indices such as LVEF and PER but diast. indices such as 1/3MFR, PFR and TPF showed significant impairment in G-2. During Ex in G-1, EF increased from early to mid stage as C, but decreased at peak Ex. Similarly 1/3MFR decreased at peak Ex. In G-2, EF decreased from early stage and 1/3MFR could not increase as workloads increased. During Ex C showed diast. reserve which compensated for the shortened diast. interval due to rise in HR by increase in PFR & 1/3MFR and TPF shortening. Its extent was small in G-1, and it was severely impaired in G-2. Ex capacity in pts with EA was expressed in decrease of LV diast. function at rest, but during Ex, pts with poor Ex capacity showed marked deterioration of syst. and diast. reserve.

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EVALUATION OF ANTHRACYCLINE INDUCED CARDIAC TOXICITY IN MAN USING RADIONUCLIDE ANGIOGRAPHY.

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The anthracycline antineoplastic drugs are the most effective currently available for treatment of acute leukemia and many solid tumors. However, the major limiting factor in long term administration of this agent is its dose-related cardiac toxicity. In order to evaluate the cardiac toxicity of anthracyclin, ECG-gated cardiac blood scintigraphy (RNA) was performed in 38 patients with malignant hemotopoetic neoplasm, who were received Doxorubicin (ADR) and/or Daunorubicin (DNR), Acarubicin, THP-Doxorubicin. Global LV ejection fraction (LVEF), peak ejection rate (PEJR) and peak filling rate (PFR) were obtained by RNA. Correlation between cumulative dose and various parameters was

	ADR+1/2DNR	ADR	DNP	Acarubicin	THP-Doxorubicin
LVER	r=-0.78 (P<0.001)	r=-0.68 (P<0.005)	r=-0.49 (P<0.05)	NS*	NS*
PEJR	r=0.65 (P<0.001)	r=0.69 (P<0.005)	r=0.39 (NS)	NS	NS
PFR	r=-0.66 (P<0.001)	r=-0.75 (P<0.001)	r=-0.62 (P<0.01)	NS	NS

* W.N.L. in all patients.

Conclusion: These parameters were available to detect the cardiac toxicity of anthracyclin.

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NORMALIZATION OF RADIONUCLIDE DIASTOLIC FUNCTION INDEX BY VOLUME.

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Diastolic function index such as filling rate derived from radionuclide ventriculography (RVG), needs normalization by volume (counts) because cardiac size and dose of radionuclide are different each by each. Usually, end-diastolic volume (EDV) was applied in this purpose. But if the case that EDV is so fluctuate or closely related to systolic function, the normalization of diastolic index by EDV is a problem.

We studied which is the best factor of the normalization among EDV, end-systolic volume (ESV) and stroke volume (SV). In increasing exercise load, EDV increased in both normal (N) and IHD groups. ESV increased in IHD but decreased in N. SV changed but did not show the specific direction. In angiotensin and nitrate, EDV was increased and ESV was decreased. But SV showed only narrow change by these drugs. In comparison with systolic function indices such as EF and Emax both EDV and ESV showed close correlation with these indices and contrasted with SV which was not closely related. Thus, for the reason that the influence of volume change or of systolic function is minimal in SV, we concluded that SV is the most appropriate factor for the normalization of diastolic function indices derived from RVG.