Clinical Usefulness of a Dual L/N-Type Ca\(^{2+}\) Channel Blocker, Cilnidipine, in Patients with Chronic Heart Failure: Assessment with \(^{123}\)I-MIBG Myocardial Scintigraphy

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Sympathetic nerve system is activated as a compensatory mechanism in heart failure. However, excessive activation of sympathetic nerve system deteriorates disease state. Sympathetic nerve system can be suppressed with N-type Ca\(^{2+}\) channel blocker. An antihypertensive drug, cilnidipine, is a dual L/N-type Ca\(^{2+}\) channel blocker. We studies usefulness of cilnidipine in treating with chronic heart failure with \(^{123}\)I-MIBG myocardial scintigraphy. We enrolled 24 patients with stable chronic heart failure. Twelve patients were treated with ACE-inhibitors, diuretics and cardiotonics (control group), and the other 12 patients were treated with ACE-inhibitors, diuretics, cardiotonics and cilnidipine (cilnidipine group). We examined blood pressure, heart rate, norepinephrine level, brain natriuretic peptide (BNP) level, cardiothoracic ratio on chest X-ray, ejection fraction of left ventricle on two-dimensional echocardiography, count rate of heart to mediastinum (H/M) and washout rate (WOR) on \(^{123}\)I-MIBG myocardial scintigraphy before and six months after medication. Symptom was improved in 8 patients in the control group and 10 patients in the cilnidipine group after medication. And another parameters were also improved in the both groups after medication. However the degree of change in blood pressure (mmHg) was 21.2 \(\pm\) 8.0 in the cilnidipine group and 10.8 \(\pm\) 9.1 in the control group, that in heart rate (/min) was 24.1 \(\pm\) 6.8 and 16.2 \(\pm\) 11.0, that in BNP level (pg/ml) was 65.2 \(\pm\) 12.0 and 42.8 \(\pm\) 11.1, that in H/M was 0.30 \(\pm\) 0.08 and 0.19 \(\pm\) 0.09, that in WOR was 19.4 \(\pm\) 5.6 and 12.2 \(\pm\) 7.0, respectively. And the degree of these changes were larger in the cilnidipine group (p < 0.05). These findings suggested that cilnidipine, a dual L/N-type Ca\(^{2+}\) channel blocker, might be useful in treating with chronic heart failure.

Key words: \(^{123}\)I-MIBG, chronic heart failure, cilnidipine, N-type Ca\(^{2+}\) channel blocker

Assessment of Therapeutic Effect in Acute Myocardial Infarction Using Early/Delayed Images of \(^{123}\)I-BMIPP Myocardial Scintigraphy

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This study was aimed at analyzing the discordance between the initial and late scintigraphic images in patients with acute myocardial infarction (AMI), and utilizing the data obtained for the treatment of AMI patients.

Ninety-one patients with a history of the first episode of AMI were enrolled as subjects for this study. Emergency coronary angiography was performed in all the patients and left ventriculography (LVG) was carried out subsequently. \(^{123}\)I-BMIPP myocardial scintigraphy was performed to obtain initial images (BMi) and delayed images at 4 hours (BMd). Scintigraphy was performed a mean of 6 days after the onset of AMI in the patients. The subjects were classified into three groups according to the scintigraphic data. Quantitative gated single photon emission computed tomography (SPECT) with \(^{99}\)mTc-sestamibi (MIBI) was also conducted one month and 6 months later in all the patients.

Discordance was observed in 51% of the patients. Left ventricular volume based on the quantitative gated SPECT (QGS) data at one month and 6 months after myocardial scintigraphy was significantly smaller in the washout group than in the other two groups. There was no significant change in LV volume measured at 6 months as compared to that measured at one month in the washout group. Significant increases in LVEDVI and LVESVI were observed over time in the no discordance group. In the fill-in group, the LV volume at one month was significantly higher than that in the washout.
group, but no significant change with time was observed.

During the subacute stage of myocardial infarction, discordance is often seen between initial and late BMIPP-myocardial-scintigraphic images. The presence of such discordance, and analysis of its pattern, may be useful in predicting the cardiac function in these patients during the chronic phase of this disease.

Key words: $^{123}$I-BMIPP myocardial scintigraphy, AMI, QGS, myocardial SPECT

A Case Report of Distant Lymph Nodes Metastases from Prostate Cancer Imaged with $^{201}$TI and $^{99m}$Tc-MIBI

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Prostate cancer most often metastases to regional lymph nodes and bones by hematogeneous or lymphatic spread. The authors present a rare case of metastatic prostate cancer to supradiaphragmatic lymph nodes that were detected on $^{201}$TI and $^{99m}$Tc-MIBI imaging and confirmed on a CT scan.

An 81-yr-old man with bilateral painful cervical lymphadenopathies was referred to our hospital with suspected thyroid cancer. The US and thyroid scan indicated no abnormalities in his thyroid gland. Both $^{201}$TI and $^{99m}$Tc-MIBI scans showed multiple areas of abnormally increased radioactivity in both supravacular, anterior mediastinum, and bilateral hilar regions. A CT scan also revealed multiple lymphadenopathies in the same regions as radionuclide scans. Prostate cancer was diagnosed from the results of immunohistochemical staining for PSA examination of a biopsy specimen of the mediastinal lymph node. The serum PSA concentration was markedly elevated at 490 ng/ml (normal, <40 ng/ml). Both $^{99m}$Tc-HMDP bone and $^{67}$Ga scans were normal. All supradiaphragmatic lymph nodes on CT images disappeared 2 months after subcapsular orchiectomy and endocrine treatment with Bicalutamide.

Metastatic prostate cancer should be considered when metastatic adenocarcinoma is discovered in the supravacular lymph nodes of elder men.

Key words: prostate cancer, supraclavicular lymph nodes metastases, $^{201}$TI, $^{99m}$Tc-MIBI, PSA

Clinical Evaluation of $^{111}$In-Oxine-Labeled Platelet and $^{99m}$Tc-HSA-D Scintigraphies in Kasabach-Meritte Syndrome Associated with Anterior Mediastinal Hemangioma: Case Report

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A 12-year-old girl presented with Kasabach-Meritte syndrome associated with anterior mediastinal hemangioma. $^{111}$In-oxine-labeled platelet scintigraphy and $^{99m}$Tc-HSA-D scintigraphy were very useful for the diagnosis and evaluation of this condition.

Key words: Indium-111-oxine-labeled platelet, technetium-99m-human serum albumin diethylene triamine pentaacetic acid ($^{99m}$Tc-HSA-D), Kasabach-Meritte syndrome, anterior mediastinum, hemangioma


Annals of Nuclear Medicine