siderably manifested abnormalities by scintigraphy.

A hundred and sixty-nine patients were performed the scintigraphy with 99mTc-MDP for the detection of bone metastasis, and 52 of them showed abnormalities. In twenty-three of 118 patients of breast cancer, the scintigrams showed abnormalities and definite metastases were confirmed in 13 patients. Patient with prostatic carcinoma and lung cancer also showed abnormalities in high ratio.

We have already experienced bone scintographies of more 1,000 patients using 99mTc EHDP, and noticed that, in comparison with 99mTc EHDP, 99mTc MDP is more suitable agent of scintigraphy for the skeletal survey of patients with malignant tumors, because of its rapid blood clearance and urinary excretion.

Evaluation of the Clinical Utility of 99mTc-MDP Bone Scan Compared with PYP and EHDP

Shinichiro Kawaguchi, Masahiro Ito, Hajime Murata, Kazuo Chiba, Kengo Matsui, Hideo Yamaeda, Yikihiko Ooishi, Akira Kido, Akira Koderu, Shigemichi Yonamine, Masayuki Yatani, Hatiro Yorino
Department of Nuclear Medicine and Radiological Sciences, Tokyo Metropolitan Geriatric Hospital, Itabashi, Tokyo

The purpose of the present study is to evaluate clinically bone images obtained by using currently available three bone scanning agents of 99mTc-MDP (methylene diphosphonate), EHDP (ethane hydroxy diphosphonate) and PYP (pyrophosphate). The image itself is remarkably improved by Micro Dot Imager whole body γ scanner compared with 3 inch whole body scanner.

The results were as follows: 1) The quality of the images were defined into three categories. By using 99mTc-MDP 59% of good, 28% of fair and 14% of poor images were obtained. By using 99mTc-PYP 14% of good, 50% of fair and 36% of poor images were obtained. By using 99mTc-EHDP no good case, 57% of fair and 43% of poor images were obtained. 2) The half time of blood clearance of 99mTc-MDP, EHDP and PYP were 16±4, 17±7 and 35±3 minutes respectively. 3) The 24 hours urinary excretion rate of 99mTc-PYP, MDP and EHDP were 40±19, 47±19 and 60±16% of injected doses respectively. 4) A case of prostate cancer was scanned by using three bone scanning agents. The quality of the image of 99mTc-MDP, PYP and EHDP were good, fair and poor respectively. 5) Generally speaking the aged cases showed frequently unsatisfied bone scans than the cases of adult.

In conclusion, the bone scan using 99mTc-MDP could provide us with better quality image than those using 99mTc-PYP or EHDP.

Scintigraphy with 99mTc-Methylene Diphosphonate
Kozaburo Kawahira, Yoshihiko Oshumi, Chikashi Nakayama, Itsuma Kamoi, Yuichi Ichiyu, Kanehiro Hasuo, Kazunori Morita and Keiichi Matsuura
Department of Radiology, Faculty of Medicine, Kyushu University, Fukuoka

The use of 99mTc-Methylene diphosphonate (MDP) for bone scanning has become increasingly common. This is the report of our experience using this agent. The accumulation rate of this agent in each bone increased markedly until 2 hours after administration, and reached a plateau at 2-3 hours except for the spine which showed a minimal increase then.

The count rate of each ROI in the bone showed a plateau at 2-3 hour, but that of kidney or background was decreasing. This suggests the adequate timing for the bone scanning to be at