Summary

Evaluation of Technetium-99m-MIBI Scintigraphy in Metastatic Differentiated Thyroid Cancer —Comparison Study with ^{131}I and ^{201}Tl—

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Detectability of metastasis in differentiated thyroid cancer using technetium-99m-methoxyisobutyl isonitrile (^{99m}Tc-MIBI) was compared with that of ^{131}I and ^{201}Tl. Forty patients after total thyroidectomy were evaluated. The scan results were compared with those of ^{131}I and ^{201}Tl whole body scintigraphy per patient. The positive rate was 68% in ^{99m}Tc-MIBI, 84% in ^{131}I, 60% in ^{201}Tl respectively. As to the lymph node metastasis, the positive rates were 56% in ^{99m}Tc-MIBI, 78% in ^{131}I, 39% in ^{201}Tl. In lung metastasis, the positive rate was 46% in ^{99m}Tc-MIBI, 82% in ^{131}I and 55% in ^{201}Tl.

Serum thyroglobulin (Tg) was significantly higher in ^{201}Tl and/or ^{99m}Tc-MIBI positive group compared to that of negative group independent of ^{131}I scan results.

Although the detectability of both ^{99m}Tc-MIBI and ^{201}Tl were inferior to that of ^{131}I, 9 to 22% of metastasis were detected only by these radiopharmaceuticals. Both ^{99m}Tc-MIBI and ^{201}Tl, therefore, should be used in cases with high serum Tg even with negative ^{131}I uptake. Basing on the fact there was no prominent difference between ^{99m}Tc-MIBI and ^{201}Tl in the detectability of metastasis, ^{99m}Tc-MIBI might be more suitable tracer because of better quality image.

Key words: ^{99m}Tc-MIBI, ^{201}Tl, ^{131}I, Thyroid cancer metastasis.