suitable for the purpose. In the measurement of the source containing small amount of activity, it is inevitable to shorten the distance between source and surveymeter. In our experience the value of measurement was in fairly good inverse proportion to the square of the distance at sourcesurveymeter distance more than 30 cm. The sample thickness must be limited within 1 cm so that the influence of self-absorption or γ-ray is negligible. Scintillation counter having Pb-filter or/and 7-8 mm ϕ tapered cone and calibrated by ionization surveymeter was acceptable and convenient for the determination of the sample of 1-100 mCi.

Recently well-type ionization chamber became commercially available and convenient for daily use, but our isoresponse curve in the well proved that there might be some error due to sample volume and sample position in the well. Therefore attention must be paid to this fact in the use of well-type ionization chamber.

Clinical Value of ^{113m}In as Radioisotope Imaging Agents

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It is most desirable for radioisotope imaging to use a large dose of a short-lived nuclide which increases the photon output while reducing the absorbed radiation dose to the patient. From this point of view, ^{113m}In is an ideal nuclide which is eluted from the ^{113}Sn-^{113m}In generator and decays with a half-life of 1.7 hours by emitting 380 Kev gamma ray (no beta emission).

Because of the physical short half-life of ^{113m}In, the activity remaining in the whole-body will be less than 1 μCi at 24 hrs after administration of 10 mCi of ^{113m}In assuming no excretion therefore another radioisotope studies in the fallowing day will not be affected by the previous scanning. This is one of the advantages of ^{113m}In preparation over that of ^{99m}Tc.

We developed some preparations for various organ scanning, such as ^{113m}In sulfur colloid for liver and bone marrow scanning, ^{113}InFe ascorbic acid for blood pool and ventriculomyelo scanning, ^{113m}InFe DTPA ascorbic acid for brain scanning and ^{113m}InFe $(AH)_3$ particles for lung scanning. Radioisotope angiocardiography was also performed by using the scintillation (Anger) camera with ^{113m}InFe ascorbic acid. Clinical values of the radiopharmaceuticals mentioned above were discussed and the radioisotope images of high quality were presented.

The Contribution of Low Energy Gamma Emitter into the Scintigram

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Low energy gamma emitters with short physical half lives are useful as scanning agents. A large amount of radionuclide can be used to a patient without raising radiation dose to a possible hazard and the shielding effectiveness will increase. But, a good quality of scintigram showing less background can not be always taken in organ scanning, because low energy gamma ray makes a larger amount of the scatter radiation than that of the medium energy over 200 Kev. The purpose of this study is to know