《招待講演》

Current Status of Nuclear Medicine in Korea

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The first clinical use of radioactive material in Korea started 32 years ago in June, 1959, when a patient with hyperthyroidism was successfully treated with radioactive iodine. In April of following year, 1960, the first nuclear medicine laboratory was installed at Seoul National University Hospital. Since then, Seoul National University Hospital has played a pioneering and pivotal role in the field of nuclear medicine in Korea. Subsequently, four other provincial national university hospitals were installed various kinds of sophiscated nuclear medicine laboratory equipments. The Korean Society of Nuclear Medicine (KSNM) was organized in 1961, and Radiology Science Institute applicated with Korea Atomic Energy Research Institute (KAERI), the predecessor of Korean Cancer Center Hospital, was established in 1963. The Korean Journal of Nuclear Medicine published its first issue in 1967.

In 1966, the first international symposium on nuclear medicine was held in Seoul. This symposium was not only exceedingly meaningful but also gave impending stimulus to the initial stage of Korean nuclear medicine. Following this event, active studies using radioisotope and vigorous interchange of information with foreign countries had increased so steadily and remarkably that could hold the successful third Asia and Oceania Congress of Nuclear Medicine in 1984.

Since 1962, training courses for the general and the special license have been implemented under the auspices of Korean Ministry of Science and Technology. It has gotten more and more necessary to train the specialists transacting radioisotope in parallel with the development of nuclear medicine. The first training course for 112 trainees was opened in 1960. We now have 645 special licesees, 1,312 general licensees and 446 supervisor licensees in all. But unfortunately, we don't have professional training system for the qualified phisician in the field of nuclear medicine at present. The training center of KAERI offers the four-week training course for the medical use of radioisotope once or twice a year, or the correspondence lecture course for general license. And Ministry of Science and Technology issues the licenses for dealing with radioisotope.

The medical institutes dealing with radionuclide began to increase rapidly from the late 1970's with the help of the outstanding economic growth and the increasing interests in nuclear medicine. And there are 106 medical institutes through out the country as of 1990. Out of 106 medical institutes, 35% of these hospitals operate an independent Department of Nuclear Medicine. When examining the geographic pattern, Seoul is the most dense area with 45 institutes followed by Pusan (12), Daegu (6), and etc. We can easily understand that such distribution depends on number of the population and the economic status.

According to the nationwide study, 225,000 *in vivo* case studies were performed in 1990. These studies included liver scan (30%), thyroid scan (30%), and bone scan (24%) followed by kidney and heart scan (in 1986, liver 43%, thyroid 20%, bone 14%, kidney 3%, heart 2%). But nowadays SPECTs for brain and heart are increasing rapidly. Annually studied radioimmunoassaies were 1.7 million cases, and the distribution of radioimmunoassay was hepatitis Ag and Ab series (35%) were on the top of the list, and thyroid hormone assay (30%), the other hormone assay (12%), tumor Ag or marker assay (14%), and allergen test (2%) followed (in 1986, hepatitis series 41%, thyroid hormone 31%, tumor marker 8%, other hormone 13%, allergen 3%).

The studies on medical cyclotron and positron emission tomography (PET) are rapidly progressing in the western countries as well as in Japan. In 1984, a medical cyclotron was installed at

Korean Cancer Center Hospital, but unfortunately PET is not available at present. We are trying to promote PET technology in Korea in nearest future. In 1983, first rotating gamma camera as a SPECT machine was installed and thereafter the number of SPECT camera was rapidly increased. At present SPECT machine occupies 31% of all types of gamma cameras in 1990 (37 SPECT cameras in 117 gamma cameras). Especially last year, triple headed SPECT machine was installed and the number of brain and heart SPECT studies were exponentially increased.

In Seoul National University Hospital, we are interested in nuclear cardiology (antimyosin antibody, MIBI SPECT), nuclear neurology (brain SPECT, child psychiatry), radioimmunodetection, quantitative digital autoradiography (glucose metabolic rate, neuroreceptor, tumor antigen quantitation) and inhouse manufacturing of radiopharmaceuticals (HMPAO, MAG3) and computer soft wares.

The continuous development of nuclear medicine is more and more expected and demanded. So we should do our best to develop and produce the domestic radionuclide and radiopharmaceuticals in order to use them at any time we want.