

MEDIASTINAL LYMPHOSCINTIGRAPHY

Ryuji Onishi*, Michimasa Matsuo*, Yoshiki Takada*,
Hitoshi Takashima*, Yoshio Inoue*, Michio Kono*,
Shuji Kimura*, Kazuro Sugimura*, Kazuo Ito*,
Ryuji Takahashi*, Shoji Nishiyama*, Shinjiro -
Yoshimoto**, Shinji Hashimoto***

*Department of Radiology, School of Medicine, Kobe
 University Kobe **Hyogo Pref.Nishinomiya Hospital
 ***Hyogo Pref.Kobe Children Hospital

We made an attempt of mediastinal lymphoscinti-
 graphy, which we could put in practice as a routine
 procedure. ^{198}Au colloid of 30-50 μCi (0.3 - 0.5ml)
 was injected into mucosa or submucosa of B_8 or B_9
 of both lungs by endoscopic method. And scans were
 made 3, 6, 12, 24, 48 and 72 hours after the in-
 jection. In clinical application in 11 cases,
 following results were obtained; In cases without
 apparent metastatic invasion in mediastinal lymph-
 node, one R.I. accumulation in the subcarinal lymph-
 node and one or more R.I. accumulation in right
 mediastinal lymphnode were clearly visualized.
 R.I. accumulation in right mediastinal lymphnode was
 not found in cases with right mediastinal lymphnode
 metastasis. In cases with extensive subcarinal
 lymphnode invasion, R.I. accumulation was visualized
 neither in subcarinal lymphnode nor in right media-
 stinal lymphnode.

STUDIES OF LYMPHOCYTE LABELING WITH ^{99m}Tc

Shin Matsuda†, Tatsumi Uchida†, Tokuo Yui†, Hideo Kimura†
Tetsugoro Tanaka†, Tsuyoshi Akitsuki†, Hiroshi Yoshida*
Shigeo Kariyone*, Masaru Saito** and Toshiyuki Kida***

*The First Department of Internal Medicine,
 ** Radioisotope Laboratory, *** Department Radiogy,
 Fukushima Medical Collage, Fukushima.

Lymphocytes were labeled with Tc-^{99m} by using CIS
 kit for Tc-^{99m} labeled red cells. Labeling yield was
 $5.3 \pm 0.4 \%$ (mean \pm SD, n = 8). Viability was
 evaluated by supravital staining with trypan blue
 and its value was $92.1 \pm 2.3 \%$ (n = 5). Repeated
 washes of labeled lymphocytes were performed in order
 to measure elution rate of the labeled cells. Free
 Tc-^{99m} was completely removed by washing of three
 times and loss of radioactivity in the cells by
 further washing was not significantly recognized.

In the mice, disappearance curve of Tc-^{99m} labeled
 lymphocytes from blood stream showed two exponential
 components. T 1/2 of the first component was 0.5 hr
 and T 1/2 of the second one 6.1 hrs respectively.
 Immediately after infusion of labeled cells, high
 radioactivity was detected in the lungs and its radio
 activity was decreased rapidly in the course of
 time. The radioactivity of spleen and liver increased
 untill 1 hr after the infusion and achieved plateau.

In the human subject, scintiphotogram after the
 infusion of Tc-^{99m} labeled lymphocytes showed the
 accumulation of Tc-^{99m} radioactivity in the spleen
 and liver. It is concluded that the technique for
 labeling lymphocytes in vitro with Tc-^{99m} yields
 valuable information about the lymphocyte kinetics.