Renoscintigram using ^{99m}Tc-EDTA

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A newly introduced tracer of ^{99m}Tc-EDTA has been expected to be a renal scan agent. This tracer is easily provided with instant labeling method of electrolysis when ready to use.

By simultaneous administration of ^{198}Yb DTPA as an established GFR substance, blood activities of both tracers were shown to be decrease in a same fashion as two term of exponential components. In addition, by simultaneous administration of ^{131}I-Hippuran as an established RPF substances, it was observed that difference of disappearance rate constants of the EDTA was fourth of that of the hippuran which was exactly corresponded with the normal filtration fraction of the kidney, and that the intrarenal transit through nephrons was thought to be same essentially. On the basis of these fundamental observation, it was substantiated that this agent would be a GFR substance.

This tracer was, therefore, appeared to be useful both for depicting a GFR renography as well as a renal scan agent. After intravenous administration of this agent, transport process into bilateral kidneys was recorded during 10 to 20 min. by scintillation cammera simultaneously stored into data store system. By playing back the process, three parrt of regions of interest were selected, each bilateral kidneys and vascular background, and bilateral GFR renographys were, then, reproducible by subtracting the background activities, enabling to assess magnitude of GFR of the each bilateral kidneys.

In order to obtain the image of parenchymatous part of kidneys, a care should be paid to take a picure until 3 to 4 min. before the initial appearance of the tracer into the pelvis. On this premise, this agent might become a good substitute for ordinal scan agent such as ^{203}Hg-Neohydrin with minimum radiation hazard.

Clinical Evaluation of Renoscintiphoto

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On the last anual meeting of this society, we reported tomocamera and its clinical evaluation on renal diseases. During 1 year and 2 months, from May 1972 to July 1973, renoscintiphotos in-