

N. Kidney and Urinary Tracts

Studies on Radiopharmaceuticals III. Synthesis of ^{99m}Tc -Labeled New Renal Scanning Agents and Their Evaluation

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At present some ^{99m}Tc -labeled compounds for renal scintigraphy have been used in functional and morphological studies on the kidney. In an attempt to develop better renal scanning agents, we tested new agents labeled with ^{99m}Tc in animals and man. The results are reported here.

Methods: Furosemide, ethacrynic acid, mercaptomerin, cysteine, malic acid, cysteine-acetazolamide and salicylic acid were labeled with ^{99m}Tc by electrolytic reduction of pertechnetate in sterilized vials using Sn-Pt electrodes. The synthesized compounds were passed thro-

ugh a milliporefilter and checked chemically and radiochemically before use, and injected into male rabbits intravenously at a dose of 300 to 500 μCi . Kidney images were examined at different intervals by using Nuclear Chicago PHO/Gamma HP.

Results: Among the agents tested, salicylic acid, cysteine-acetazolamide gave good results in rabbits.

However, in man with normal kidney function malic acid labeled with ^{99m}Tc gave clear images and clinical uses with this agent are now in progress.

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Clinical evaluation was made on ^{99m}Tc -malic acid (TMA) and ^{99m}Tc -cystein acetazolamide