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A Study of the Concept of Unit Dosing Reagent Kits: An Efficient and Cost-Saving Method for Dispensing Radiopharmaceuticals

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The concept of unit dosing nonradioactive MDP and DTPA reagent kits before radiolabeling was investigated by evaluating the radiochemical purity and biodistribution after radiolabeling. Various storage conditions of these unit doses were studied. Group I used seven MDP kits reconstituted to 3 ml with 0.9% NaCl solution. Thirty-five evacuated 5-ml vials were prepared using 0.5 ml of the reconstituted solution. Fifteen vials were stored at 25°C and -18°C; five were used as a control. Group II used two MDP kits reconstituted to 10 ml with 0.9% NaCl solution. Thirty-five

unit doses were prepared and stored in the similar manner. On days 1, 7, 14, and 30, five vials from each storage condition were radiolabeled with 20 mCi/0.5 ml of $^{99m}\text{TcO}_4^-$. The labeling efficiency was determined using ITLC, and the five mice from each group were injected at 30 min after preparation. Biodistribution was performed at two hours post-injection. MDP and DTPA unit doses stored at -18°C each retained the same labeling efficiency and biodistribution in mice after 30 days as compared to day 1. The labeling efficiency of unit doses stored at 25°C deteriorated progressively and altered biodistribution was initially observed on day 3 for DTPA and on day 7 for MDP. The concept of unit dosing nonradioactive reagent kits provides a more efficient and cost-saving procedure for emergency doses and small hospitals that perform a small number of nuclear medicine studies. However, the storage conditions of these unit doses appears to be critical to the success of the procedure.

Intravenous Dipyridamole: Techniques and Pitfalls

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Intravenous dipyridamole infusion for coronary artery vasodilation is currently being performed by a limited number of institutions due to its investigation by the Food and Drug Administration. Intravenous dipyridamole testing in conjunction with thallium-201 imaging provides a useful method for detection of coronary artery disease in patients who are unable to perform physical exercise. At the University of Cincinnati Medical Center, intravenous dipyridamole has been used on an investigational basis for several years. The purpose of this presentation is to present some of our experience with the drug and portray pitfalls and problems that may limit the drug's effectiveness.