

SnHSA preparations may contain unbound reduced technetium, dimers and monomers of albumin, and denatured albumin (10). Colloids may also be present (8). Thus, several mechanisms may account for the disappearance of the radioactivity of the HSA agents from the blood during the interval studied. Free and reduced anions and albumin fragments might be cleared by diffusion into extravascular spaces and filtration by the kidneys; albumin aggregates and colloids should be removed by phagocytic mechanisms. In the former instance, extravascular diffusion would result in increased background and subsequent cardiac-image degradation, a situation that would not occur in the latter case. In either event, equilibrium concentrations are affected. Thus it appears that altered albumin and unbound technetium moieties resulting from the reduction by tin might be more rapidly cleared from the blood than agents not containing those moieties, and thus is in agreement with our results.

We conclude that EHSA is the most suitable tracer, of those tested, for purposes of imaging blood pools and estimating blood volumes with a technetium-labeled albumin radiopharmaceutical. The SnHSA-WBAMC agent is not quite as satisfactory as EHSA unless subjected to gel filtration, with all of the difficulties and complications (sterility, apyrogenicity, etc.) inherent in the process. The SnHSA-NEN and SnHSA-UC are even less suitable for these applications. If I-123-labeled HSA, with the same characteristics as I-125 HSA, should become available, one would expect to have a radiopharmaceutical combining the advantages of slow blood disappearance rate (for accurate determination of blood volume) and appropriate energy and photon flux for imaging procedures.

We therefore recommend that when blood-volume determinations are required as part of quantitative cardiac-flow studies, the blood-clearance character-

istics of the product employed must be carefully considered. Products with the slowest clearance rates are most desirable, and it appears that currently the EHSA has definite advantages over stannous-reduced preparations.

FOOTNOTES

- * Mallinckrodt, Inc., St. Louis, Mo.
- † Catalog No. NRP-175, New England Nuclear Radiopharmaceutical Div., North Billerica, Mass.
- ‡ Cardiolite®, New England Nuclear Corp., Boston, Mass.
- || Union Carbide, Tuxedo, N.Y.

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BOOKS RECEIVED

Receipt of the following books is acknowledged:

- Diagnostic Ultrasound in Clinical Obstetrics and Gynecology*, Horace E. Thompson and Richard L. Bernstine. 192 pp, illustrated. New York/Chichester/Brisbane/Toronto, John Wiley & Sons, 1978. \$25.00.
- The Chemistry of Radiopharmaceuticals*, Ned D. Heindel, H. Donald Burns, Takashi Honda, Luther W. Brady, eds. 294 pp, illustrated. New York/Paris/Barcelona/Milan, Masson Publishing USA, Inc., 1978. \$27.50.
- The Year Book of Nuclear Medicine - 1978*, James L. Quinn III, ed., Stewart M. Spies, assoc. ed., 390 pp, illustrated. Chicago/London, Year Book Medical Publishers, Inc. 1978. \$25.95.
- Cardiac Catheterization and Angiocardiology*, David Verel and Ronald G. Grainger. 239 pp, illustrated. Edinburgh/London/New York, Churchill Livingstone, 1978. \$29.50.
- Nuclear Medicine: Endocrinology*, Benjamin Rothfeld, ed. 387 pp, illustrated. Philadelphia/Toronto, J.B. Lippincott Company, 1978. \$37.50.
- Quality Control in Nuclear Medicine: Radiopharmaceuticals, Instrumentation, and In Vitro Assays*, Buck A. Rhodes, ed. 508 pp, illustrated. St. Louis, The C.V. Mosby Company, 1977. \$41.50.