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Comparison of Two Indium-111 Monoclonal Antibodies with Respect to Liver Uptake

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This investigation was undertaken to compare two radiolabeled ¹¹¹In monoclonal antibodies, CCR 076 (antimucin) and ZCE 025 (anti-CEA) with respect to liver uptake. The question of whether there is a significant difference in liver uptake between these two antibodies and optimum imaging time will be examined.

Of eight known colorectal cancer patients, four were injected with 3–6 mCi ¹¹¹In-MoAb CCR 086 and four with 3–6 mCi ¹¹¹In-MoAb ZCE 025. All patients were scanned 3 and 7 days postinjection. A 3–7- μ Ci ¹¹¹In-MoAb standard specific to each patient was prepared and imaged. Planar images were acquired for 800K using a LFOV gamma camera interfaced with a Picker PCS 512 computer system. Region of interests were manually drawn around each anterior, posterior, and patient standard images. The geometric means of each projection were used to calculate the percent of liver uptake of the total dose injected. Average percent liver uptake for ¹¹¹In-MoAb CCR 086 was 23.4% on day 3 and 11.2% on day 7 compared to 17.0% on day 3 and 8.0% on day 7 for ¹¹¹In-ZCE 025.

It is concluded from the eight patients studied that the percent liver uptake of the two antibodies is not significantly different. However, the percent liver uptake for both antibodies on day 7 is reduced by approximately 47% from day 3. This difference tends to indicate that liver imaging will be better on day 7. This is due to the decrease in liver activity thus enhancing the target-to-nontarget

ratio and the clearing of body background regardless of the antibody used.

Planar and (SPECT) Imaging of the Heart with SQ 30217: A New Technetium-99m Myocardial Perfusion Agent

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SQ 30217 (SQ), a neutral lipophilic ^{99m}Tc-labeled myocardial perfusion agent was evaluated in 30 patients referred for coronary arteriography. Treadmill exercise was performed to 80% of maximal predicted heart rate or symptoms and SQ (12–20 mCi) was injected at peak service. The first 15 patients underwent imaging, which was initiated 2 min postexercise with increasing acquisition times per view [ANT (3 min), LAO (6 min), LLAT (9 min)] to compensate for the rapid washout of this agent. A (25–35 mCi) dose of SQ was injected 120 min later at rest and imaged with the same protocol as following exercise. Images were evaluated by three observers blinded to the cath results. Eight patients had significant coronary disease (>50% stenosis). SQ scans identified 5/8 (63%) patients with CAD and 5/11 (45%) with abnormal vessels with no false-positives (FP). Two patients with single vessel circumflex and one with only right coronary disease were not detected, possibly because SQ hepatic activity obscured the inferior wall on the lateral view. All but one abnormal region (100% occlusion), in a non-infarct location, normalized at rest. SQ SPECT was performed postexercise and at rest in the final 15 patients, 13 of whom had CAD. SQ SPECT identified 12 patients with CAD and 18/25 (72%) abnormal vessels with 2 FP. Conclusion: SQ is a promising imaging agent for the

identification and localization of CAD, particularly using SPECT. The rapid myocardial washout of SQ allows for the same day sequential performance of both rest and exercise studies.

Absorption of Technetium-99m-Perchnetate from the Augmented Bladder During Direct Nuclear Cystography

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Although absorption of [^{99m}Tc]perchnetate during cystography has been documented in blood samples taken after cystography (1), visual uptake of the tracer has not been demonstrated in routine studies (1,2). Patients with bladder augmentation using segments of bowel have different absorption properties and absorb [^{99m}Tc]perchnetate across the implanted membrane. Eleven patients were studied following bladder augmentation with segments of bowel. All studies using [^{99m}Tc]perchnetate demonstrated an increase in body background activity when compared to pre-operative studies and studies performed on patients without bladder augmentation. Faint visualization of the kidneys from removal of this background activity, rather than from reflux, was observed in four patient studies. This phenomenon was prevented in three post-operative studies by using ^{99m}Tc-sulfur colloid for nuclear cystography. We recommend the routine use of ^{99m}Tc-sulfur colloid in this patient population to prevent the erroneous diagnosis of vesicoureteral reflux and miscalculation of GFR due to the presence of background soft tissue and blood activity.

1. Conway J, et al. *Am J Radiology* 1972;115:720.
2. Blaufox M, et al. *J Nucl Med* 1971;79:239.