of doing such measurements using rotating cameras. It has been suggested that such systems lack both sensitivity and adequate resolution to be useful for such measurements, particularly in the body. There is now abundant data to support the belief that cameras will provide adequate sensitivity and resolution for such measurements. This data will be reviewed in the context of currently feasible physiologic measurements. Rotating camera SPECT thus offers many possibilities for clinical diagnosis and non-invasive physiologic and metabolic measurements. This technology could be far more widely available and more versatile than other alternatives such as special purpose SPECT systems or PET devices. These advantages need to be pursued vigorously.

Invitation Lecture V

Computer Assisted Radionuclide Angiography to Detect and Confirm Reversible Ischemic Cerebral Dysfunction

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Computer assisted angiography (CARNA) with Tc-99m DTPA was employed in patients (pts) with transient ischemic attack (TIA) or prolonged reversible ischemic neurologic deficit (PRIND) to establish the sensitivity of CARNA in detecting and quantifying changes in hemispherical blood flow causing such dysfunction. This was achieved by computing a ratio (right to left hemisphere) from time activity curves (10 mCi, 100 images in 40 sec; normal (mean$\pm$2 SD): $1.00\pm.12$). Results of CARNA were additionally compared with findings in cranial radiographic angiography (RGA).

In TIA (106 pts), CARNA revealed a sensitivity of 75.0%. In PRIND (55 pts), it was 89.1%. Hemispherical perfusion deficit in TIA ($-.17\pm.11$) was significantly ($p<1.0$) smaller than in PRIND ($-.23\pm.11$). In TIA, interval from ictus to examination played a smaller role than expected (minimal sensitivity: 60%, 5–8 weeks after ictus). In PRIND, even smaller differences were found.

Sensitivity of RGA in TIA was 81.1%. Combined sensitivity (RAG and CARNA) was 93.1% ($p<.01$). Thus, CARNA may be employed both (A) as a screening procedure or even (b) as a complement to RGA in pts with reversible ischemic cerebral dysfunction. The latter employment (b) may be additionally used to quantify deficits in hemispherical blood flow in relation to morphological vascular alterations, described by RGA, and to the patients clinical presentation.