

Retention of Tc-99m ECD in delayed SPECT of the brain

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We determined the effect of retention on the changes in regional biodistribution of Tc-99m ECD in the brain. A total of 14 cases, 7 normal volunteers and 7 patients with various diagnoses but with very minimal radiologic findings or none were included in the study. SPECT images were taken at 30 min, 1, 2, 3, 4 and 6 hrs after an intravenous injection. Retention rates were calculated in various regions and were corrected according to the time decay of technetium. There was a tendency for the retention rate to increase up to three hours of imaging and then a decrease was noted in most regions of the brain. In the thalamus, increasing retention was noted. In conclusion, Tc-99m ECD retention in the different regions of the brain varies with time. These differences should always be considered when planning and interpreting SPECT quantitative studies.

Key words: Tc-99m ECD, SPECT, retention rate