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Titel des Beitrags: Accuracy of cardiac PET imaging using post-injection transmission scan.

Abstract:
The purpose of this study was to investigate the accuracy of cardiac PET with post-injection transmission scans. METHODS: We performed a phantom study using 18F solution as well as 13N-ammonia PET study of ten patients. The average activities of no myocardial defect phantom model were estimated, and myocardial defect sizes of 12 phantom models were measured by pre- and post-injection transmission methods at various 18F activities. In 13N-ammonia PET at rest and during adenosine triphosphate (ATP) stress studies, measured defect sizes were compared between both methods. RESULTS: The ratios of average activity estimated by both methods (post/pre value) were almost 1.00 at each 18F activity and segment. Measured defect sizes by both methods showed an excellent correlation with true defect sizes (r = 0.98, p< 0.01 for pre vs. true value: r = 0.98, p< 0.01 for post vs. true value). The mean absolute errors of measurements were minimal up to 3.5% LV, and were similar between both methods. In 13N-ammonia PET, measured defect sizes by both methods also showed a good correlation (r = 0.97, p< 0.01).

CONCLUSION: The results indicate that cardiac PET imaging with post-injection transmission scan provides information on myocardial tracer activity as well as myocardial defect size as does conventional pre-injection transmission method.

Zeitschriftentitel / Abkürzung: