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Autor(en) des Beitrags: Todica, A; Böning, G; Lehner, S; Weidl, E; Cumming, P; Wängler, C; Nekolla, SG; Schwaiger, M; Bartenstein, P; Schirrmacher, R; Hacker, M

Titel des Beitrags: Positron emission tomography in the assessment of left ventricular function in healthy rats: A comparison of four imaging methods.

Abstract: To measure left ventricular (LV) function parameters in heart of healthy rats by three different positron emission tomography (PET) imaging techniques and by magnetic resonance imaging (MRI). ECG-gated microPET examinations were obtained in seven healthy rats with 2-deoxy-2-[F]fluoro-D-glucose (FDG) for calculation of LV-function from the blood-pool phase of the dynamic recording (FDG), and also from the later myocardial uptake (FDG). On subsequent days, we re-measured LV-function using the novel blood-pool tracer Ga-albumin (Alb) and again by FDG (FDG) in one setting. Cine-MRI examination provided the reference standard measurement. The mean LV ejection fractions (LVEF) were 56 ± 3 (FDG), 55 ± 3 (FDG), 56 ± 3 (FDG), 57 ± 3 (Alb), and 57 ± 2 (MRI). There were good to excellent correlations found between the LVEF-values as compared to MRI reference standard for FDG (r = 0.71), FDG (r = 0.86) and Alb (r = 0.88). Both of the blood-pool methods significantly overestimated the magnitudes of end-diastolic-volume and end-systolic-volume, whereas FDG matched closely to the MRI reference standard. There was no significant bias for both blood-pool methods and a minor negative bias for FDG regarding the LV ejection fraction (LVEF) when compared to cine-MRI.
results. There was no significant difference between the means of FDG and FDG (P = .50). Relative to reference standard MRI measurements of LVEF, there was excellent agreement between PET-based measurements, notably for the novel blood-pool tracer Ga-albumin.