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RENAL TRANSPLANTATION. CLINICAL - 2

MP685 THE UPTAKE OF ^{18}F-FDG BY RENAL ALLOGRAFT IN KIDNEY TRANSPLANT RECIPIENTS IS NOT INFLUENCED BY RENAL FUNCTION

Alexandre Jadoul[1], Pierre Lovinfosse[1], Laurent Weekers[2], Pierre Delanaye[2], Jean-Marie Krzesinski[2], Roland Hustinx[1] and Francois Jouret[2]
[1]*University of Liege Hospital (ULg CHU), Nuclear Medicine, Liege, BELGIUM,*
[2]*University of Liege Hospital (ULg CHU), Nephrology, Liege, BELGIUM*

Introduction and Aims: ^{18}F-Fluorodeoxyglucose (^{18}F-FDG) positron-emission tomography coupled with computed tomography (PET/CT) imaging has been recently proposed as a non-invasive tool for the diagnosis of renal allograft acute rejection (AR) in kidney transplant recipients (KTR). Still, the influence of kidney function on the renal graft uptake of ^{18}F-FDG remains unknown.
Methods: We retrospectively identified all KTR who underwent at least one ^{18}F-FDG PET/CT between January 2010 and December 2015. KTR with documented pyelonephritis or AR, as well as patients under chronic hemodialysis, were excluded. Medical, biological and technical parameters were extracted from a prospective database. Estimated glomerular filtration rate (eGFR) was assessed using chronic kidney disease (CKD)-EPI equation. Mean standardized uptake values (SUVmean) of renal graft cortex and aorta were measured in 4 and 1 volumes of interest, respectively. Spearman's rank correlation coefficient (ρ) and analysis of variance (ANOVA) were performed.
Results: Eighty-two KTR aged of 58 ± 13 underwent ^{18}F-FDG PET/CT for tumor staging (n=46), suspected infection (n=11) or fever of unknown origin (n=25). Male-to-female ratio was 1.4. Mean eGFR was 50 ± 19 ml/min/1.73m² [range: from 20 to 94], including CKD stage 1 (n=3), stage 2 (n=21), stage 3a (n=20), stage 3b (n=29) and stage 4 (n=9). PET/CT imaging was performed within 67 ± 15 min following injection of 3.7 ± 0.6 MBq/kg of ^{18}F-FDG. Mean glycemia at the time of injection was 113 ± 34 mg/dl. Mean kidney and aorta SUVmean were 1.8 ± 0.2 and 1.7 ± 0.3, respectively. No significant correlation was observed between eGFR and kidney SUVmean (ρ, 0.119; p, 0.28) or aorta SUVmean (ρ, -0.144; p, 0.20) considering the whole cohort. ANOVA showed no difference of kidney (p, 0.62) and aorta (p, 0.85) SUVmean between CKD groups. Mean coefficients of variation of kidney and aorta SUVmean (on the basis of >3 consecutive ^{18}F-FDG PET/CT imaging in 15 patients with no significant change of eGFR) reached 13.1% and 12.2%, respectively.
Conclusions: Our data suggest that the uptake of ^{18}F-FDG by renal allograft within an hour post injection is not significantly impacted by CKD.