

Uptake of 2-deoxy-2-[¹⁸F]fluoro-D-glucose in the normal testis: Retrospective PET study and animal experiment

Shigeru KOSUDA,* Susan FISHER,* Paul V. KISON,* Richard L. WAHL* and H. Barton GROSSMAN**

**Department of Internal Medicine, Division of Nuclear Medicine,
The University of Michigan Medical Center, Ann Arbor, Michigan*

***Department of Urology and Cell Biology, The University of Texas
M.D. Anderson Cancer Center, Houston, Texas*

Our retrospective PET and animal studies were conducted on a total of eight patients with normal testes and five male Sprague-Dawley rats. All the rats were necropsied at 60 minute post-injection of FDG, and the organs were removed and counted. The human testes were visualized on 60-70 minute FDG-PET images and whole- or partial-body images in all of the patients. The correlations between patient age over 50 years old and testis-to-muscle ratios, and patient age and SUVs were statistically significant, $r = -0.755$, $p < 10^{-6}$ ($n = 7$), $r = -0.900$, $p < 0.007$ ($n = 4$), respectively. FDG uptake of the rat testes was $0.162 \pm 0.004\%$ kg injected dose/g ($n = 5$). The uptake was approximately 6.0 and 3.6 times as high as muscle and blood levels, respectively. In conclusion, there is substantial uptake of FDG into the normal testis which declines with age. The normal levels of FDG uptake in the testis relative to the patient's age should be considered in the interpretation of FDG scans of the inguinal and lower pelvic regions.

Key words: testis, 2-deoxy-2-[¹⁸F]fluoro-D-glucose, positron emission tomography