Heterogeneity of PET/CT imaging phenotype prognostic in mCRPC

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(HealthDay)—Metastatic castration-resistant prostate cancer (mCRPC)

has heterogeneity in positron emission tomography (PET)/computed tomography (CT) imaging phenotype, which has clinical relevance, according to a study published online Nov. 9 in *JAMA Oncology*.

Josef J. Fox, M.D., from Memorial Sloan Kettering Cancer Center in New York City, and colleagues performed PET/CT imaging with fluoro-2-D-deoxyglucose F 18 for glycolysis (Glyc) and fluorodihydrotestosterone F 18 for androgen receptor (AR) expression to determine heterogeneity of imaging phenotypes. A total of 133 patients with mCRPC underwent imaging.

The researchers found that each phenotype had an independent negative impact on survival in multivariate analysis, which was most pronounced for AR_0Glyc_1 lesions, followed by AR_1Glyc_1 lesions and AR_1Glyc_0 lesions (hazard ratios, 1.11, 1.05, and 1.03, respectively). Four patient-specific groups emerged when sorted by lesion type: concordant, with all AR_1Glyc_1; AR predominant, with AR_1Glyc_1 and varying numbers of AR_1Glyc_0; Glyc predominant, with AR_1Glyc_1 and varying numbers of AR_0Glyc_1; and mixed, with AR_1Glyc_1 plus AR_1Glyc_0 and AR_0Glyc_1.

"With regard to mCRPC lesions, most express ARs, consistent with initial benefit of ARSi [androgen receptor-signaling inhibitor] drugs," the authors write. "On a patient basis, 49 percent (groups 3 and 4) had at least one AR_0Glyc_1 lesion—the imaging phenotype with the most negative effect on survival, possibly due to ARSi resistance."

Several authors disclosed financial ties to the pharmaceutical industry.

More information: Abstract/Full Text (subscription or payment may be required)