Genomic alterations distinct for black men with prostate cancer

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(HealthDay)—African-American (AFR) men with prostate cancer have distinct genomic alterations from European-American (EUR) men, according to a study published online July 10 in *Clinical Cancer Research*.

Yusuke Koga, from the Boston University School of Medicine, and colleagues compared the frequencies of somatic alterations in prostate cancer obtained from four datasets comprising 250 AFR and 611 EUR men and a targeted sequencing dataset from a commercial platform of 436 AFR men and 3,018 EUR men. The authors sought to examine genomic alterations associated with race.

The researchers found that in tumors from AFR men, mutations in *ZFHX3* and focal deletions in *ETV3* were more frequent. There was an association for *TP53* mutations with increasing Gleason score. Tumors from AFR men with metastatic prostate cancer more often had *MYC* amplifications, while tumors from AFR less frequently had deletions in *PTEN* and rearrangements in *TMPRSS2-ERG*. Primary prostate cancer from AFR men more often had *KMT2D* truncations and *CCND1* amplifications. There was no significant difference noted between the two groups in genomic features that could impact clinical decision-making, including tumor burden, microsatellite instability status, and genomic alterations in select DNA repair genes, *CDK12*, and in *AR*.

"The genomic differences seen in genes such as *MYC*, *ZFHX3*, *PTEN*, and *TMPRSS2-ERG* suggest that different pathways of carcinogenesis may be active in AFR men, which could lead to further disparities if targeted therapies for some of these alterations become available," the authors write.

Several authors disclosed financial ties to the pharmaceutical industry.

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