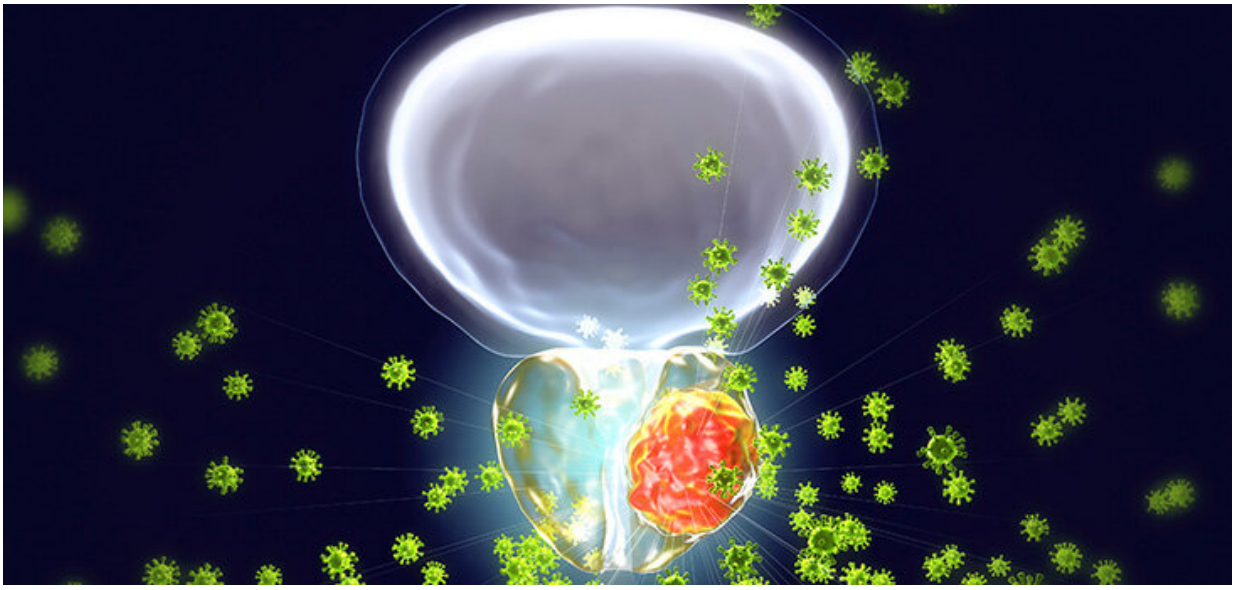
Strong link between bone biomarkers and prostate cancer survival

May 8 2023, by Stephanie Winn



Credit: UC Davis

Prostate cancer is the second leading cause of death in American men. Understanding the factors that influence patient outcomes is critical for improving treatment and survival rates.

Research led by UC Davis Comprehensive Cancer Center reveals a link between bone metabolism biomarkers and survival in men with newly diagnosed hormone-sensitive prostate cancer (HSPC) who received androgen deprivation therapy (ADT). The work was published in

European Urology.

The study analyzed results from a SWOG Cancer Research Network Phase 3 trial of nearly 1,000 patients on ADT, including some who were also on the novel hormonal therapy Orteronel. Patients participating in the trial came from 248 academic and community centers throughout the country.

Bone biomarkers for both bone loss and bone formation were measured in HSPC patients enrolled in the trial.

The researchers found that elevated bone biomarkers were associated with an increased risk of death. Bone biomarkers have been found to influence overall survival in men with castration-resistant prostate cancer (CRPC), but have not been fully established for HSPC. CRPC is a prostate cancer that continues to grow even when testosterone levels are greatly reduced.

"Our findings show that high levels of bone turnover biomarkers are associated with a shorter lifespan in men newly diagnosed with metastatic HSPC," said UC Davis Comprehensive Cancer Center Director Primo "Lucky" Lara Jr. "In the future, knowing one's bone biomarker status could improve how we predict patient outcomes and enhance treatment considerations for men with HSPC."

Managing bone health during prostate cancer treatment

A finely balanced interaction between cells that rebuild bone and cells that destroy bone is common in men with advanced prostate cancer. These men often present with skeletal metastasis, a common source of bone pain and fracture that can affect their survival.

In addition, men with metastatic HSPC are typically treated with ADT, which disrupts bone turnover and contributes to the development of bone diseases such as osteopenia and osteoporosis. Previous studies have shown that elevated levels of blood-based biomarkers of bone turnover predict survival in men with CRPC and bone targeted therapy may help patients with highly elevated markers.

"This study takes a similar look at bone turnover biomarkers in men with advanced or metastatic HSPC who are initiating ADT as part of a large phase 3 clinical trial," said co-author and UC Davis Comprehensive Cancer Center clinical scientist Mamta Parikh. She is also the cancer center's director of genitourinary malignancies. "Ultimately, our findings add to the growing understanding of the complex interplay between cancer and bone metabolism, which will also help us design of future clinical trials."

More information: Primo N. Lara Jr et al, Bone Biomarkers and Subsequent Survival in Men with Hormone-sensitive Prostate Cancer: Results from the SWOG S1216 Phase 3 Trial of Androgen Deprivation Therapy with or Without Orteronel, *European Urology* (2023). DOI: 10.1016/j.eururo.2023.03.036

Provided by UC Davis