

## **Suppressed markers of bone turnover (BTO) after 6 months of therapy is prognostic for durable prostate cancer control with androgen deprivation therapy (ADT).**

### **Authors:**

<sup>1</sup>J. Sharma <sup>2</sup>C. Yiannoutsos, <sup>2,3</sup>N. Hahn, <sup>1,3</sup>C. Sweeney

<sup>1</sup>Dana Farber Cancer Institute, <sup>2</sup>Indiana University, <sup>3</sup> Hoosier Oncology Group

**Background:** Elevated markers of bone turnover at baseline are prognostic for poorer cancer outcomes. Suppressed levels on therapy may be prognostic for better ADT efficacy in controlling prostate cancer.

**Methods:** Markers of bone turnover were assessed at baseline and 6 months in a prospective prostate cancer trial of patients with bone metastases commencing ADT. Association with time to castration resistant prostate cancer (CRPC) and skeletal related event (SRE) was evaluated using a MVA model with a Cox regression analysis with covariates of treatment assignment to 30 mg/day of risedronate versus placebo and known prognostic variables, PSA nadir < 0.2 ng/ml vs. > 0.2 ng/ml and extent of metastases.

**Results:** Between 12/03 and 8/05, 63 patients were enrolled with median follow-up of 39.7 months. BTO markers were available for 50 patients at baseline and 40 patients at 6 months. The median values at baseline and 6 months were urine n-telopeptide (nmolBCE/mmol Creat) - 42.65/27.40; urine total DPD (nmol/mmol Creat) - 9.84/8.30; bone specific alkaline phosphatase (ng/mL) - 20.35/9.77 and serum osteocalcin (µg/mL) - 19.43/16.82. On MVA, 6 month BTO markers which were all below the baseline median BTO marker level (p=0.014), nadir PSA below 0.2 ng/ml (p=0.042) and lower volume of metastases at baseline (p=0.033), were associated with longer time to SRE. 6 month BTO biomarkers below the baseline median and PSA nadir < 0.2ng/ml were the factors associated with longer time to CRPC (p=0.026 and p=0.058 respectively) and 6 month BTO markers below the baseline median was the only factor weakly associated with OS (p=0.092) in this study in men on ADT for metastatic prostate cancer with bone involvement.

**Conclusions:** Lower bone turnover markers at 6 months of ADT is prognostic for better outcomes with ADT.