

## **YODA PROJECT 2018-3813**

### **External validation of a prognostic nomogram for first-line therapy in metastatic castration-resistant prostate cancer (mCRPC)**

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#### **Introduction:**

Prognostic models in mCRPC are useful for the estimation of individual prognosis and stratification in clinical trials. Most available prognostic nomograms are derived from datasets that do not reflect the current treatment landscape. Recently, a prognostic nomogram for first-line mCRPC treatment was developed from patients treated in the PREVAIL study.

#### **Objective:**

We aimed to validate this model in the COU-AA-302 trial population.

#### **Methods:**

The Armstrong prognostic model was applied to patients treated in the COU-AA-302 clinical trial. A continuous risk score was derived from coefficients from the original model. Time-dependent AUC was used to evaluate the overall predictive ability of the model. Additionally, patients were categorized according to the number of risk factors present into low ( $\leq 3$  risk factors), intermediate (4-6 risk factors) or high risk (7-10 risk factors). The association with OS, rPFS and TTPP was assessed with Cox-regression models. Interaction tests were used to assess the impact of treatment arm in each of the prognostic groups.

#### **Results:**

1088 patients were included in the analysis. The risk score was associated with OS with a tAUC of 0.745. Most patients were classified as low (52.6%) or intermediate (43.9%) risk. Risk category was significantly associated with OS (HR: 2.26;  $p < 0.001$ ), rPFS (HR: 1.87;  $p < 0.001$ ) and PSA-PFS (HR: 1.6;  $p < 0.001$ ). We observed a significant interaction between treatment arm and risk group, with patients in the low-risk category apparently receiving a greater benefit from abiraterone ( $p$ -value = 0.002). Low-risk patients had higher baseline FACT-P scores, and a longer time to FACT-P worsening.

#### **Conclusions:**

We validate the prognostic value of the Armstrong risk model in minimally symptomatic mCRPC patients undergoing first-line therapy with AR signaling inhibitors. Abiraterone may provide a greater benefit in low-risk patients with indolent disease. Low risk patients tend to present with better overall quality of life scores.