# Biopsy-Derived Cell Cycle Progression Score Outperforms Pathologic Upgrading or Upstaging in Predicting Biochemical Recurrence After Surgery

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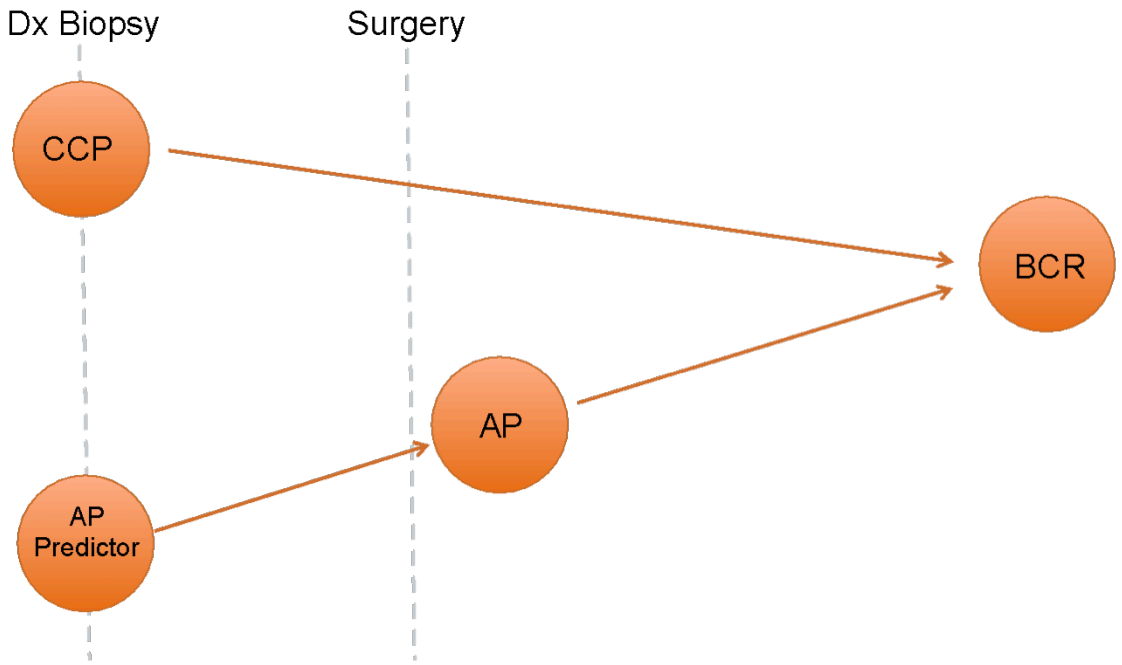
# Introduction: Study to Compare CCP with Adverse Pathology

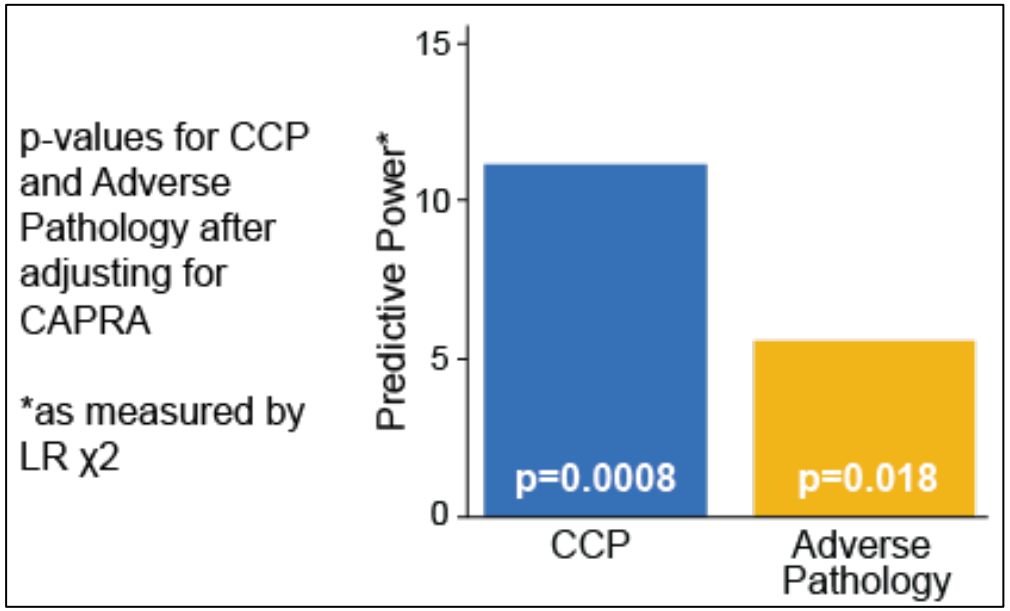



- Combined RP-treated cohorts from previous studies of the CCP score
  - *Ochsner* – sequentially ascertained retrospective cohort (2006 -2011)
  - *Bishoff* – pooled analysis of three RP cohorts (Martini clinic, IHC, DVA) from 1994 – 2006.
- Compare ability of CCP vs. AP to predict distal oncologic outcome (biochemical recurrence –rising PSA after RP).
  - A binary variable was created with Adverse pathology defined as biopsy Gleason <=3+4 upgrading to RP Gleason >= 4+3 and/or patients with clinical stage <=T2 upgrading to pathological stage >=T3
  - CCP from biopsy
- Cohort: Patients with clinical Gleason <= 3+4 and stage <=T2.
  - 557 men, 56 with Adverse pathology
  - 116 had BCR

# Results: CCP and CCR are more predictive than Adverse Pathology

| Variable | HR (95% CI) | LR $\chi^2$ value | p-value |
|---|---|---|---|
| **Univariate** | | | |
| **CCP** | 1.53 (1.22, 1.92) | 12.86 | $3.4 \times 10^{-4}$ |
| **CAPRA** | 1.27 (1.10, 1.46) | 9.69 | $1.8 \times 10^{-3}$ |
| **Adverse Pathology** | 2.07 (1.30, 3.29) | 8.15 | $4.3 \times 10^{-3}$ |
| **CCR** | 1.88 (1.44, 2.47) | 20.65 | $5.5 \times 10^{-6}$ |
| **Multivariate** | | | |
| **CCP** | 1.47 (1.16, 1.86) | 9.87 | $1.7 \times 10^{-3}$ |
| **CAPRA** | 1.21 (1.04, 1.41) | 6.18 | 0.013 |
| **Adverse Pathology** | 1.68 (1.04, 2.70) | 4.16 | 0.041 |
| All univariate and multivariate models are stratified by sites – Ochsner, Duke and Martini Clinic | | | |

CCR has 2.5X the predictive power of adverse pathology within this pooled cohort.




## CONCLUSION:

These data indicate that both CCR and CCP scores derived from the biopsy are better predictors of BCR than eventual adverse pathology, which can only be determined after surgery.