For Internal Use Only

European Urology 2022

Association Between Oncotype DX Genomic Prostate Score and Adverse Tumor Pathology After Radical Prostatectomy

Marcio Covas Moschovas, Christopher Chew, Seetharam Bhat, Marco Sandri, Travis Rogers, Paolo Dell'Oglio, Shannon Roof, Sunil Reddy, Maria Chiara Sighinolfi, Bernardo Rocco, Vipul Patel

What account type to use this on: Providers who ask what to do with a GPS Score

When to use this article:

- When a urologist's asks how do I use the GPS score, what is high, what is low score? This paper shows a GPS result of 29 or greater is a predictor of adverse tumor pathology (Extra Prostatic Extension (EPE), Seminal Vesicle Invasion (SVI), Positive Surgical Margins (PSM)).
- This paper will show how these authors recommend using a GPS result of ≥29 with a patient.

How to use this article

In 2021 Dr Vip Patel of AdventHealth Global Robotics Institute, published a study demonstrating how a GPS result couls guide treatment decisions. These findings may help surgeons in counseling patients on surgical options for prostate cancer.

Key statements

- The study showed a GPS result of ≥29 is significantly associated with adverse pathology after RP; additionally, the risk of EPE and SVI increases as the GPS result increases.
- The study authors concluded GPS may help clinicians to improve pre-operative patient counseling and develop surgical strategies for patients with increased risks of EPE or unfavorable pathological features.
- **Meaningful Excerpt**
  "Knowing the tumor location (biopsy report/imaging examination) associated with a higher chance of EPE as suggested by the GPS may help during surgical planning and patient counseling. The higher chance of EPE at the prostate base and the middle of one side will interfere with the degree of nerve-sparing possible, because on that side the dissection needs to be wider than on the side without any lesion. Therefore, during preoperative consultation, knowing that the patient has a higher chance of EPE is helpful when explaining the surgical procedure and possible reduction in erection function due to lower preservation of the neurovascular bundle.

  In addition, in academic centers in which residents and fellows perform surgery, knowing which side has a higher chance of EPE could change the surgical management because a more experienced surgeon can take over and dissect that side to optimize functional and oncological outcomes. In our study, GPS 29 points (quartiles 3 and 4) was associated with significantly higher OR for EPE (Table 4). **Therefore, in our clinical practice we adopt a GPS of 29 as a threshold at which to perform more careful dissection on the tumor side."**

Key Data

- The study has a sizeable amount of patients, 749. These patients had a GPS test and Radical Prostatectomy, and were assessed to evaluate the association between GPS result and adverse tumor pathology.
- Cohort
  - ~86% of patients with low- and/or favorable-intermediate risk disease
  - Study included patients from low- to high-risk prostate cancer
- Performance
  - Patients with adverse tumor pathology had a median GPS of 29 or greater
  - Patients without PSM had a median GPS of 28 or lower
- Specifically, GPS was an independent predictor of EPE and SVI (table 3).

Table 3 – Odds ratio (adjusted for age, prostate-specific antigen level, clinical stage, Gleason score, and time between the genomic assay and surgery) for the presence of high-risk features on tumor pathology per 20-point change in Oncotype DX genomic prostate score

Characteristic	Odds ratio (95% CI)	*p* value [a]
Extraprostatic extension	1.8 (1.4–2.3)	**<0.001**
Seminal vesicle invasion	2.1 (1.3–3.4)	**0.004**
Positive surgical margin	1.3 (1.0–1.8)	0.06

CI = confidence interval.
[a] Values in bold are statistically significant.

For Internal Use Only