In HPV-driven OPSCC Surveillance

Let their blood TTMV® score help achieve a new standard of care

NavDx®

Optimizing HPV+ Cancer Care

The clinical utility of physical exams and imaging to detect recurrence are often limited

Although imaging and physical exams have long been the standard of care, their ability to detect recurrence early is limited[1-3]:

- **PET/CT performance metrics: ~88%** sensitivity/specificity; **94% NPV** (negative predictive value) **and 76% PPV** (positive predictive value)[1-3]
- Anatomical changes post-surgery and post-chemoradiation complicate the predictive value of physical exam, endoscopy, and costly imaging studies[1]
- Imaging can only confirm locoregional tumors that have grown to a detectable size, and can miss distant metastases outside the region being scanned[2]

13 – 25% of patients will relapse with locoregional or distant metastases.[4-6] *Fear of recurrence is your patient's #1 concern,* often leading to psychological distress and poor quality of life among OPSCC patients in remission[7]

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Monitoring TTMV-HPV DNA Scores with the NavDx test at routine surveillance visits has demonstrated unrivaled test performance metrics[8-10]

Tumor tissue modified viral (TTMV)-HPV DNA is a unique biomarker released into the blood from tumors driven by human papillomavirus (HPV)[1]

- **≥97% Specificity** and **≥89% Sensitivity** to more accurately detect true disease status[8,9]
- **≥98% NPV** with no recurrence when TTMV-HPV DNA remained undetectable[8,9]
- **≥95% PPV** for cancer recurrence, when patients had 1 positive test result[8,9]
- **With unrivaled NPV and PPV,** serial NavDx testing during surveillance could help optimize the use of imaging, by mitigating the need for unnecessary imaging exams[8-10]

NavDx surveillance testing, with its *high PPV, can reduce the risk of unnecessary invasive procedures,* whereas its *high NPV can offer patients greater confidence* in their response to treatment and current disease status.[2,10]

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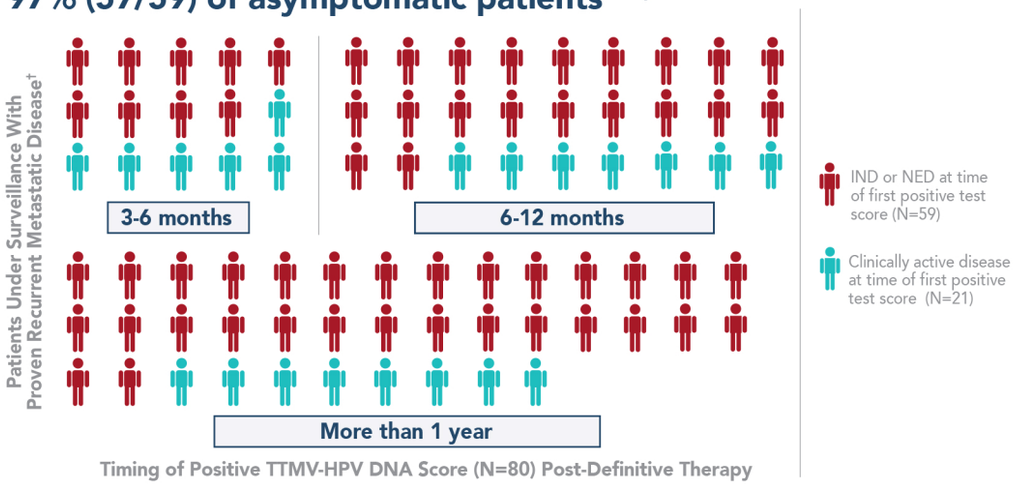
Serial NavDx testing assists in earlier detection of patients with recurrent disease[9,10]

In a large retrospective study (N=1,076), occult recurrences were accurately detected in patients with a single positive TTMV-HPV DNA Score[10]

- **NavDx testing was the first indication of recurrence,** predating clinical symptoms or imaging among patients with no evidence of disease[10]
- **53% (29/55) of confirmed recurrences** occurred in patients >12 months post-completion of therapy[9,10]

Why wait for physical symptoms to appear? A single positive TTMV-HPV DNA Score was the first indication of recurrence in 97% (57/59) of asymptomatic patients[10] *†



Timing of Positive TTMV-HPV DNA Score (N=80) Post-Definitive Therapy

* Of 1,076 patients tested during surveillance, 80 (7.4%) had at least one positive TTMV-HPV DNA Score. Of these, 59 (74%) had either indeterminant (IND) disease status or no evidence of disease (NED) at time of their positive test Score, while 21 (26%) were noted as having clinically active disease at time of their first positive Score. Nearly half, 38 (48%) were tested >12 months after completion of definitive therapy, while 27 (34%) and 15 (19%) were tested at 6-12 months, and 3-6 months, respectively.

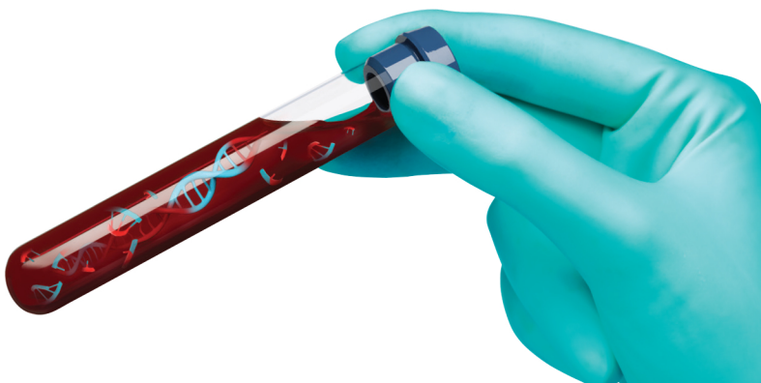
† 57 of the 59 (96.66%) patients with IND or NED status, who tested positive for TTMV-HPV-DNA, were later proven to have recurrent disease (on imaging and/or biopsy), suggesting the presence of clinically occult recurrence at time of their positive test result. Longer follow-up was needed to identify recurrent cancer in 2 of the remaining 4 IND and NED patients under surveillance. All 21 patients with active disease reported at the time of TTMV-HPV DNA testing were confirmed to have recurrent disease.

A multi-institutional retrospective observational cohort study (N=573), concluded:

- **Serial testing of TTMV-HPV DNA** during surveillance **is highly accurate and reliable at detecting disease recurrence[8,9]**
- NavDx testing resulted in few false negatives and few missed recurrences, especially among patients with a known positive result preceding a negative result[9]
- Recurrence-free and overall survival were significantly worse for patients with any positive TTMV-HPV DNA test result identified during surveillance ($p<0.0001$)[9]

Survival after recurrence is significantly better for patients with a single focus of disease and those able to undergo surgical salvage treatment, suggesting that *identifying recurrences early* should prolong the disease-free interval, with a potential for cure in at least a subset of cases.[11]

Detect recurrences a median of 4 months earlier with NavDx testing.[1]



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Optimize HPV+ cancer care with NavDx testing

Clinical practice guidelines and CMS coverage policy for recurrence detection include surveillance at specified intervals:

NavDx testing during surveillance

- **<2 years post treatment:** every 3 months
- **3-5 years post treatment:** every 6 months
- **6+ years post treatment:** 1 time per year

NavDx testing reliably informs disease status so you can optimize the utility of imaging, physical exams and salvage therapy, *reassuring patients* their disease is being effectively managed[9,10]

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