IMPACT PROFILE

Improving Prediction of Oropharyngeal Cancer Prognosis

Translational Science Benefits Model

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Helping clinicians and patients predict outcomes in oropharyngeal cancer to tailor treatment and follow-up to each person's risk.

The Challenge

People with oropharyngeal squamous cell carcinoma (OPSCC) can have very different outcomes, even if they are at the same stage of the disease. This is because staging alone does not consider key factors such as how the cancer has spread to lymph nodes, imaging results, pathology details, other existing health conditions, and symptoms. As a result, some patients may be overtreated while others may not receive intensive enough monitoring.

The Approach

We are developing a prognosis model to estimate outcomes like overall survival and cancer recurrence for patients with OPSCC. This model uses more than just traditional staging; it also includes:

- Pathology details to refine risk
- Staging information combined with comorbid conditions and symptoms reported by patients
- Predictions of outcomes such as recurrence risk and the need for closer follow-up

By integrating clinical and diagnostic information, we aim to offer a more comprehensive and accurate tool for evaluating patient prognosis.

The Impact

This study could enhance clinical decision-making for patients with OPSCC. By using information already collected during standard care, such as imaging results, pathology reports, staging details, existing health conditions, and symptoms, we can better identify patients at higher risk for poor outcomes. This approach can help reduce unnecessary treatments for some patients and ensure that those at high risk receive the appropriate level of treatment and follow-up care.

RESEARCH HIGHLIGHTS

- **More accurate risk assessment** using imaging, pathology reports, and symptoms, rather than just stage alone.
- **Scalable decision support** based on routine medical record information, including existing health conditions and pathology report details.

Key Benefits

This study resulted in ***clinical***, ***community***, and ***economic*** benefits.

Diagnostic procedures: Refine surgical and treatment recommendations by improving risk prediction using level specific nodal patterns and pathology-based factors. (*Potential*)

Shared decision-making: Supports clearer patient counseling and shared decision making by translating imaging and pathology findings into individualized prognosis estimates. (*Potential*)

Health care delivery: Helps match treatment intensity and follow up to recurrence risk. (*Potential*)

Life expectancy & quality of life: Improve survival while reducing unnecessary treatment related side effects. (*Potential*)

Societal & financial cost of illness: Reduce avoidable procedures and complications while focusing resources on higher risk patients, lowering overall care costs without compromising cancer control. (*Potential*)

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