



Media information

ICHNO news: Researchers validated a gene expression signature for distinguishing tumors metastasizing to regional lymph nodes on a large multicenter cohort of head and neck cancer patients

Reduction of unnecessary neck dissection in case of a negative test may result in decreased morbidity without deterioration of treatment outcomes

The validation of a test, based on gene expression and predicting the tumours that will metastasize in lymph nodes of head & neck cancers, was presented today at the 3rd International Conference on innovative approaches in Head and Neck Oncology (ICHNO), in Barcelona.

Dr Robert Takes, from the Radboud University Nijmegen Medical Centre, the Netherlands, reported results of a study involving 222 cases of oral or oropharyngeal cancer. The study was jointly led by scientists from Nijmegen and the University Medical Center Utrecht, and involved all eight head and neck oncological centres of the Netherlands.

“Today, it is impossible with current diagnostic tools to detect small lymph node metastasis in patients with head and neck squamous cell carcinoma and therefore it is common practice to operate on the neck even if no metastases have been detected,” said Dr Takes. “The majority of these operations is unnecessary because, in most cases, no metastases are present.”

If the chance of metastasis could be predicted more accurately, the number of operations could be reduced. “In our study, determining gene expression changes in the primary tumour improved the distinction between tumours that do metastasize from those that don’t,” continued Dr Takes.

With an array containing a set of 825 relevant genes, identified in a prior study and suitable for clinical application, distinction between metastasizing and non-metastasizing tumours was possible. The test correctly predicted the absence of metastasis in 89% of the cases.

“This is the first biological test that was able to obtain a high level of accuracy and has been validated in multiple centres on a large cohort of patients,” said Dr Takes.

“The possible reduction of unnecessary neck treatments in case of a negative test may result in decreased morbidity without deterioration of oncological outcomes. Also, in the remaining cases that still develop metastasis in the neck, salvage treatment is still possible,” added Dr Takes.

This signature is an additional method to already existing means to assess the neck, like imaging techniques and sentinel node procedures. “One important message arising from the study is that the combination of biological (gene signature) and clinical factors did better than either alone,” commented Prof Adrian Begg from the Netherlands Cancer Institute (NKI). “It thus appears that this signature is a useful addition which can help the decision on treatment policy.”

“Treatment is usually mainly selected based on the anatomical extent of the primary tumour and its metastasis. Additional biological information on the behaviour of each individual tumour could result in a more tailored treatment resulting in better survival,” said Dr Takes.

“Takes and colleagues have carried out an important and essential step in all studies on gene signatures,” concluded Prof Begg, “namely to move on from the initial finding of potential prognostic or predictive significance to validation in an independent clinical series.”

“We look forward to further validation and refinement of this approach which opens promising developments. In such studies it would still be useful to look at genome-wide expression, which would provide the opportunity to not only validate the present signature but also to look for even better ones.”

Note to Editors

About the European Society for Therapeutic Radiology and Oncology

ESTRO, the European Society for Therapeutic Radiology and Oncology, was founded in 1980. Today with 5000 members, the society supports the role of radiation oncology in the multimodality treatment of cancer to improve patients’ care.

ESTRO’s principal objectives and activities are to:

- Promote the international exchange of scientific information, research and dissemination of outcomes on radiotherapy and oncology and related scientific fields.
- Organise congresses and conferences covering all aspects of radiation oncology and the multidisciplinary treatment of cancer with a state-of-the-art scientific programme.
- Provide educational courses and materials (publications, e-learning...) in radiation oncology and promoting multidisciplinary education in oncology.
- Establish relationships and network and encourage co-operation with international, national societies as well as professional bodies and industry partners in the field of radiation oncology.

To find out more about ESTRO, please visit: www.estro.org

About the European Society for Medical Oncology

The European Society for Medical Oncology (ESMO) is the leading European professional organization committed to advancing the specialty of medical oncology and promoting a multidisciplinary approach to cancer treatment and care.

ESMO’s mission is to advance cancer care and cure through fostering and disseminating good science that leads to better medicine and determines best practice.

As a trusted organization with 35 years of experience, ESMO serves its members and the oncology community through: a brand of excellence in post-graduate oncology education and training; leadership in transforming evidence-based research into standards of cancer care in Europe; dedicated efforts to foster a more favorable environment for scientific research; innovative international platforms to share expertise, best practices and disseminate the most up-to-date scientific research to as wide an audience as possible.

ESMO's scientific journal, *Annals of Oncology*, ranks among the top clinical oncology journals worldwide. ESMO events are the meeting place in Europe for medical oncologists to update their knowledge, to network and to exchange ideas.

To find our more about ESMO, please visit: www.esmo.org

About the European Head and Neck Society

The European Head and Neck Society (EHNS) was formally established in 2006 and counts 1500 members today. Its intent is to promote exchange of knowledge in all aspects of head and neck neoplastic diseases and to promote the highest standards of research, education and training, disease prevention and patient care. It is a multidisciplinary body bringing together clinicians (e.g., head and neck/oral/plastic surgeons, radiation therapists, medical oncologists, imaging specialists, pathologists), other health professionals (e.g., speech therapists, cancer nurses, psychologists, physiotherapists, dieticians, social workers), and basic scientists involved in any aspect of Head and Neck Oncology. Every other year EHNS organizes a European Conference on Head and Neck Oncology (ECHNO).

The EHNS is registered as an international non-profit association under Belgian law. It is composed of individual persons, national and multi-national societies, associated study groups oriented towards head and neck oncology research, training and treatment throughout Europe and elsewhere in the world.

To find our more about EHNS, please visit: www.ehns.org

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