

Prognosis of tumors positive for human papilloma virus in head and neck cancers varies according to the site

6 April 2014

Patients with cancer of the throat and who are positive for the Human Papilloma virus (HPV+) have a good prognosis, but until now the effect of being HPV+ on the prognosis of tumours located elsewhere in the head and neck was unknown. Danish researchers have now shown that HPV status appears to have no prognostic effect on the outcome of primary radiotherapy in head and neck cancer outside the oropharynx (the part of the throat located behind the mouth, and which contains the soft palate and the base of the tongue), the ESTRO 33 congress will hear today (Sunday).

Presenting her results to the congress, Dr Pernille Lassen, MD, PhD, from the Aarhus University Hospital, Aarhus, Denmark, will say that head and neck cancers located outside the oropharynx should probably not be treated with the less intensive treatment strategies that are currently being investigated in clinical trials for HPV+ oropharyngeal tumours.

"HPV status has a very potent prognostic impact in radiotherapy for oropharyngeal cancer, and DNA from HPV has been found in all types of head and neck cancer, although it is far more common in oropharyngeal tumours. We decided to investigate the impact of HPV status in non-oropharyngeal cancers in the DAHANCA database, which includes all Danish head and [neck cancer](#) patients," Dr Lassen will say.

The researchers searched the database to identify patients with locally advanced cancers who had been treated primarily with radiotherapy, and identified 1606 patients with larynx and pharynx carcinomas. Overall, 40% of the tumours were HPV positive, and the frequency was significantly higher in oropharyngeal cancer (57%), than in non-oropharyngeal (13%).

Being positive for HPV significantly improved tumour control (81% as opposed to 55%), as well as survival from the cancer (89% and 55% respectively), and death from any cause (82% and 38% respectively), after five years.

"In non-oropharyngeal cancers we found no prognostic impact of being HPV positive in any of these endpoints," Dr Lassen will say. "This indicates that HPV status does not help us in predicting response to treatment, and hence the outcome of these cancers.

"We know from laboratory studies that HPV positive tumour cells are much more sensitive to radiation therapy than HPV negative cells, so until now we believed that they would behave similarly irrespective of site," Dr Lassen will say. "However, these data indicate that this is not the case, and at present we do not understand why this should be, though it probably can be ascribed to other biological/genetic differences between the tumours rather than the HPV status. We would now like to try to elucidate the underlying mechanisms behind these different outcomes."

There could be, for example, biological and/or genetic differences between the tumours other than the HPV status, the researchers say; for example, genetic changes caused by smoking tobacco, differences due to tumours of mixed make-up (for example, a combination of HPV+ and tobacco), or perhaps simply differences due to the site. "Such tumours with a combination of causes represent a challenge in our clinical daily practice," Dr Lassen will say.

"We have started following up our work by analysing all the tumour samples using polymerase chain reaction, a way of amplifying DNA in order to be able to analyse changes in genetic information.

We hope this will enable us to understand more about why the role of HPV in non-oropharyngeal tumours is so different. There are few data available on this subject at present, so finding out will be an important step towards optimising treatment for these patients."

President of ESTRO, Professor Vincenzo Valentini, a radiation oncologist at the Policlinico Universitario A. Gemelli, Rome, Italy, commented: "These findings will have an important impact on the treatment of HPV+ head and neck cancers, and are likely to lead to a change in current practice."

More information: Abstract: OC-0316, Donal Hollywood award session, at 11.45 hrs (CEST) on Sunday, 6 April, Strauss 1.

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