Circulating HPV cell-free DNA in cervical cancer

Introduction/Background
Human papillomavirus (HPV) related cervical cancer is the fourth most frequent cancer in women worldwide. Currently patient follow-up and therapy monitoring is solely based on clinical examination and cross-sectional imaging. Liquid biopsies for cell-free circulating tumor DNA in cancer are a novel biomarker to detect treatment response, residual disease, and relapse. The aim of this study was to investigate the potential use of cell-free circulating HPV-DNA (cfHPV-DNA) in plasma samples of patients with cervical cancer.

Methodology
In this proof-of-concept study cfHPV-DNA levels were measured using a highly sensitive Next-Generation-Sequencing-based approach targeting a panel of 13 high-risk HPV-types. For nine patients cfHPV-DNA sequencing was compared to HPV testing in corresponding paraffin embedded tumor tissue. For nine patients cfHPV-DNA sequencing was compared to HPV testing in corresponding paraffin embedded tumor tissue. Sequenom MassARRAY discovery platform was used.

Results
A total of 70 blood samples was collected from n=35 patients. cfHPV-DNA was successfully detected in 25/35 (71%) patients; of them, 8 patients had some surgical pretreatment when the sample was collected. A significant correlation between tumor burden and cfHPV-DNA detection was observed: while cfHPV-DNA was detectable in most patients (20/22) with locally advanced or metastatic disease (FIGO IB3 – IVB), detection was successful in only 5/13 patients with early-stage disease (FIGO IA – IB2), p<0.005. When pre-treated patients were excluded, the detectable rate was 100% (18/18) for advanced stages and 55% (5/9) for early stages. HPV-types detected in plasma samples matched results from tumor tissue HPV testing. Sequential sampling for patients under primary chemoradiation showed a dynamic decrease of cfHPV-DNA levels corresponding treatment response in all patients.

Conclusion
In this proof-of-concept study we were able to detect cfHPV-DNA in plasma samples of patients with primary and recurrent cervical cancer. Our findings may hold potential to develop a powerful and easily accessible tool in cervical cancer management.

2022-RA-1048-ESGO CIRCULATING HPV CELL-FREE DNA IN CERVICAL CANCER

1Suzana Mittelstadt, 2Christopher Schroeder, 3Olga Kelemen, 4Tobias Engler, 5Jakob Adnass, 6Axel Schwind, 7Andreas Koh, 8Sarah Elisabeth Wörz, 9Emst Oberlechner, 10Sandra Hoermann, 11Jürgen Andrea, 12Felix Nits, 13Bernhard Krämer, 14Irina Bönzheim, 15Annette Stabeler, 16Frank Stubenrauch, 17Thomas Illner, 18Stephan Ossowski, 19Stefan Kommoss. 1Department of Women’s Health, Tübingen, 2Tübingen University Women’s Hospital, Tübingen, Germany; 3Institute for Medical Genetics and Applied Genomics, Tübingen University Women’s Hospital, Tübingen, Germany; 4Institute of Pathology and Neuropathology, Tübingen University Women’s Hospital, Tübingen, Germany; 5Institute for Medical Virology and Epidemiology of Viral Disease, Tübingen University Women’s Hospital, Tübingen, Germany

10.1136/ijgc-2022-ESGO.85

Introduction/Background
Locally advanced cervical cancer is treated with Radio-chemotherapy and brachytherapy. Therefore; a pre-treatment para-aortic lymph node assessment is important for disease staging and therapeutic implications. Our study aimed to analyze the Tunisian experience of laparoscopic lymphadenectomy for patients with locally advanced cervical cancer.

Methodology
We reported 29 patients with locally advanced cervical cancer who underwent laparoscopic lymphadenectomy at our Institute between 2016 and 2022.

Results
The mean age was 44 years. Patients were staged IIIC1 in 48.2%, II,5% were IIB, 6,9% were IVA, 6.9% IB1, 6.9% IB3 and 2.8% were IIA2. CT scan and MRI showed suspicious pelvic lymph nodes in 65.5% and suspicious para-aortic lymph nodes in 17.9% of cases. All patients underwent para-aortic lymph node dissection after a mean time of 6 days. Our technique was 68.9% Transperitoneal and 31.01% extraperitoneal. The mean time duration was 2:37Hours. There was no per-operative or postoperative complications. One patient had a blood transfusion The mean time of hospital stay was 2 days. Pathological examination found a mean number of 9Nodes (range 2–22 removed lymph nodes).

There was 32.17% of invaded lymph nodes. sensitivity and specificity were respectively 100% and 83.3%, and VPP was 33.3%. All patients had radiochemotherapy for their cervical cancer.

Conclusion
Pre-treatment laparoscopic staging surgery plays an important role in the treatment and the decision of the radiation field. Although imaging modalities are improving, the current gold standard for determining lymph node status is surgical sampling mainly in developing countries with difficult access to PET-CT.

2022-RA-1060-ESGO RETROPERITONEAL PARAORTIC LYMPH NODE STAGING IN ADVANCED CERVICAL CANCER: TUNISIAN EXPERIENCE

Souha Jaouadi, Lamia Najia, Leila Achouri, Takoua Chalouati, Azzza Chalchoub, Ines Zemni, Maher Slimane, Monica Hechiche, Tarek Dhiab, Riadh Chargui, Khaled Rahal. Oncologic Surgery, Institut Salah Azaiez, Tunis, Tunisia

10.1136/ijgc-2022-ESGO.86