120 g/L and pre-brachytherapy Hb < 120 g/L was 9%, 15% and 22% respectively. The 3 year overall survival rate was 72%, 65% and 49% respectively. 52 patients (38.5%) had anaemia at presentation (Hb < 120 g/L). There was significant association between anaemia and younger age, more advanced stage and lymph node involvement. Anaemia was corrected by blood transfusion and/or ferric carboxymaltose. The pre-brachytherapy Hb level had the strongest impact on both local failure and survival. The post-treatment Hb level did not have an impact on the outcomes.

Conclusion Anaemia in patients with cervical cancer undergoing chemoradiation was a strong prognostic factor for local control and survival. The pre-brachytherapy Hb level had the strongest impact indicating the benefit from correcting the anaemia before treatment and maintaining the Hb level above 120 g/L during the treatment.

**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.

### Anemia in Patients with 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 sample. Sequential plasma samples were taken from four patients receiving primary chemoradiation.

**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 pretreated 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.

### Retroperitoneal Para-aortic Lymph Node Staging in Advanced Cervical Cancer: Tunisian Experience

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**Abstract**

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%, 2,5% 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 2.3±2 hours. There was no peri-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 9 Nodes (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.