| | QoL domains | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | physical | | psychosocial | | functional | | VAS-gh | |
| variables | effect size | p-value | effect size | p-value | effect size | p-value | effect size | p-value |
| **Baseline:** | | | | | | | | |
| age | 0.01 | 0.72 | 0.03 | 0.24 | **-0.12** | <0.001 | 0.01 | 0.65 |
| gender | -0.11 | 0.26 | -0.17 | 0.11 | -0.19 | 0.02 | -0.06 | 0.45 |
| (reference: male) | | | | | | | | |
| KPS | 0.00 | 0.93 | 0.06 | 0.04 | **0.41** | <0.001 | 0.09 | <0.001 |
| primary tumor | | | | | | | | |
| (reference: other) | | | | | | | | |
| breast | -0.08 | 0.43 | -0.12 | 0.28 | **-0.27** | 0.002 | -0.14 | 0.11 |
| prostate | **-0.20** | 0.03 | 0.18 | 0.06 | **-0.22** | 0.003 | 0.11 | 0.11 |
| lung | 0.06 | 0.44 | -0.04 | 0.63 | -0.10 | 0.16 | 0.00 | 0.95 |
| **Follow-up:** | | | | | | | | |
| treatment arm | -0.12 - -0.17 * | <0.001 | 0.06 | 0.24 | 0.02 | 0.57 | 0.03 | 0.42 |
| (reference: 1x8Gy) | | | | | | | | |
| pain score | **-0.14** | <0.001 | **-0.11** | <0.001 | -0.07 | <0.001 | **-0.24** | <0.001 |
| intake of opioids | **-0.27** | <0.001 | -0.05 | 0.001 | **-0.21** | <0.001 | **-0.21** | <0.001 |
| (reference: no opioids) | | | | | | | | |

*KPS : Karnofsky performance status, VAS gh: visual analogue scoring of general health*

*Binary variables (gender, primary tumor, treatment arm and intake of opioids): Effect sizes between -0.19 and 0.19 are considered minor effects and are not clinically relevant. Continuous variables: Effect sizes between -0.09 and 0.09 are considered minor effects and are not clinically relevant. To facilitate interpretation, clinically relevant effects are shown bold*

*A positive direction of the effect size means improvement of QoL by increase of the variable / compared to the reference*

** The effect size varies each week, ranging from -0.12 (week 4), -0.13 (week 2) to -0.17 (week 3)*

**Conclusion:** Although radiotherapy for painful bone metastases leads to a meaningful pain response, QoL does not improve after treatment. Initially, it remains stable followed by deterioration towards the end of life.

## Proffered Papers: Clinical 12: Rare tumours

### OC-0537

### p16 and high risk-HPV in node positive cutaneous squamous cell carcinoma of the head and neck

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**Purpose or Objective:** The incidence of p16-overexpression and the role of human papillomavirus (HPV) in cutaneous head and neck squamous cell carcinoma (cHNSCC) is unclear. In the unknown primary setting, where cHNSCC is a potential putative site, p16 status is being used to guide management despite varying reports of its incidence in non-oropharyngeal sites.

**Material and Methods:** 143 patients with cHNSCC lymph node metastases involving the parotid gland were evaluated for p16 expression by immunohistochemistry. Detection of 18 high-risk HPV subtypes was performed using HPV RNA in situ hybridization on a subset of 59 patients. Results were correlated with clinicopathological features and outcomes

**Results:** Median follow up time was 5.3 years. No differences were observed in clinicopathological factors based on p16 status. p16 was positive, intermediate and negative in 45 (31%), 21 (15%) and 77 (54%) of cases, respectively. No high-risk HPV subtypes were identified, irrespective of p16 status. p16 status was not prognostic for overall (HR 1.08 95% CI [0.85 - 1.36], p=0.528), cancer-specific (HR 1.12 95% CI [0.77 - 1.64], p=0.542) or progression-free survival (HR 1.03 95% CI [0.83 - 1.29], p=0.783). Distant metastasis free survival, freedom from locoregional failure and freedom from local failure were also not significantly associated with p16 status.

**Conclusion:** p16 positivity is common but not prognostic in cHNSCC lymph node metastases. High-risk HPV subtypes are not associated with p16-positivity, and do not appear to play a role in this disease. HPV testing, in addition to p16-status in the unknown primary setting may provide additional information in determining a putative primary site.

### OC-0538

### Tumor-related leukocytosis associated with poor radiation response and outcome in cervical cancer

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**Purpose or Objective:** To investigate the prognostic significance of tumore-related leukocytosis (TRL) in cervical cancer patients treated with definitive radiotherapy

**Material and Methods:** Between 1986 and 2012, 2,456 patients with uterine cervical cancer (FIGO stage IA-IB 494, stage IIA-IIB 1530, stage IIIA-IIIB 394 and stage IVA 38) who received definitive radiotherapy (62.6%) or platinum-based chemoradiotherapy (37.4%) consisting of EBRT and ICBT were retrospectively analyzed. TRL was defined as WBC count of ≥9,000/μL on ≥2 occasions at the time of diagnosis and during the course of treatment. The neutrophil/lymphocyte ratio (NLR) was defined as the absolute neutrophil count divided by the absolute lymphocyte count. Locoregional failure free survival (LRFFS) and overall survival (OS) were compared between patients with or without TRL.

**Results:** Median age of all patients was 55 years (range, 21-87) and the median follow-up time was 65.1 months (range, 0.7-347.8). Among 2,456 patients included in this study, TRL was observed in 398 (16%) at the initial diagnosis. Patients in TRL(+) group were younger in age and had larger tumor, advanced FIGO stage and more common LN metastases (all $p < 0.05$). TRL (+) group showed relatively lower rate of complete remission (CR) (90% vs. 97%, $p = 0.042$).The 10-year LRFFS and OS for all patients were 84% and 78%, respectively. Compared to TRL(-) group, LRFFS and OS were significantly lower in TRL(+) group (10-yr LRFFS: 69% vs. 87%, $p$ <0.001; 10-yr OS: 63% vs. 81% $p < 0.001$). After propensity score matching by age, FIGO stage, tumor size, LN metastasis, histologic subtype and pretreatment hemoglobin (Pre Tx Hb), both groups were well matched. The LR control and OS rate of TRL (+) group was still significantly lower than those of TRL (-) group. In multivariate analysis, advanced FIGO stage, non-SqCCa, larger tumor size and TRL were identified as risk factors for LRFFS and OS (all $p < 0.05$). In addition, Pre Tx Hb, LN metastasis and high NLR (≥2.5) were also associated with poorer OS (all $p < 0.05$). Among patients with LRF (n=345), patients with TRL at the time of recurrence accounted for 26% and showed relatively poorer median OS (6 vs. 12 months, $p = 0.001$).

**Conclusion:** This study supports the aggressive nature and poor radiation response of cervical cancer with leukocytosis. Given the unfavorable features and higher probability of treatment failure, optimal therapeutic approach and careful monitoring for early detection of recurrence should be considered for these patients.

### OC-0539

### Stage II testicular seminoma: patterns of care and survival by treatment strategy

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**Purpose or Objective:** Stage II testicular seminoma is highly curable with radiotherapy (RT) or multiagent chemotherapy (MACT). These modalities have not been prospectively compared. Due to the rarity of stage II seminoma, prior studies are limited by small sample size. NCCN guidelines recommend RT as the preferred treatment for stage IIA, while EUA guidelines equally allow for RT or MACT. Both guidelines are equivocal for stage IIB, and recommend MACT for stage IIC.