Purpose or Objective: Prognostic factors in early stage resected oral squamous cell cancers (OSCC) are not well understood. The aim of this audit was to identify factors influencing recurrence in pT1-2N0M0 patients with a view to determine the role and indications for adjuvant radiotherapy (adjRT).

Material and Methods: Between Aug 2011 to May 2014, 120 patients were determined to have pT2N0M0 disease following histopathological examination after primary surgery for oral cancer. Primary sites included oral tongue (66, 55%), buccal mucosa (31, 26%), gingiva (10, 8%), retromolar trigone (9, 7%) and lip (4, 3%). AdjRT was advised to 46 (38%) patients on an individual basis in a multidisciplinary meeting, determined by the presence of one or a combination of known risk factors. Patients with close or positive margins always received chemoradiation. AdjRT was delivered with 3D conformal or intensity modulated techniques to a dose of 60Gy/30Fr/6weeks to the tumor bed and 54-60Gy/30Fr/6weeks to the resected but uninvolved nodal levels. Disease-related outcomes were calculated, and pathologic prognostic factors were assessed using univariate and multivariate analyses. The impact of adjRT in reducing disease recurrence was assessed.

Results: The median age was 55 (25-82) years. The median tumor size was 2.2 cm. The median depth of infiltration was 6mm. The incidence of known pathological prognostic factors is listed in Table 1. The median follow up was 23 months (2-44 months). A total of 13 patients had recurrence (local 8; nodal 4, distant 3, including overlapping failures). All locoregional failures were within the RT volumes. The 2yr and 3 year disease-free survival (DFS) was 89% and 82% respectively. On univariate analysis pT2 tumors, lymphovascular invasion (LVI), perineural invasion (PNI) and depth of invasion >=5mm were statistically significant prognosticators for DFS (Table 1). Primaries of the oral tongue showed a trend towards shorter DFS. None of these factors were independently prognostic on multivariate analysis. A scoring system using the number of risk-factors was created. Patients were grouped as Low risk (0-1 factor); Intermediate risk (2-3 factors) and High-risk (4-7 factors). There was significant difference in DFS of patients in different risk groups (Fig 1). RT was considered unnecessary (adjRT).

Conclusion: Several pathological risk factors alone and in combination impact disease related outcomes even in pT1-2N0 OSCC. Standard AdjRT did not have a clear effect on reducing recurrence in our cohort in patients with up to 3 risk factors.

EP-1043
Clinical and volumetric prognostic factors in external beam radiotherapy for head and neck cancer
1Tohoku University School of Medicine, Health Sciences Course of Radiological Technology, Sendai, Japan
2Tohoku University School of Medicine, Department of Radiation Oncology, Sendai, Japan
3Tohoku University School of Medicine, Department of Otorhinolaryngology-Head and Neck Surgery, Sendai, Japan

Purpose or Objective: To investigate clinical and volumetric prognostic factors in head and neck cancer (HNC) patients (pts) treated with curative external beam radiation therapy (EBRT).

Material and Methods: Sixty-four oropharyngeal squamous cell carcinoma (OSCC) pts and 79 hypopharyngeal squamous cell carcinoma (HSCC) pts treated with curative EBRT were enrolled in this retrospective analysis. No pt had previously undergone surgery for HNC. The median total EBRT dose was 70 Gy (range, 60-72 Gy). For planning EBRT, computed tomography (CT) images were acquired prior to EBRT initiation and at 3-5 weeks after the initiation of EBRT for replanning in each pt. We assessed the gross tumor volume (GTV) reduction rate (GTVRR) on the basis of the results from the initial and replanning CT images. Initial cervical body volume (CBV) was measured from the initial CT images. For induction chemotherapy (IC), seven pts received docetaxel (DOC), cisplatin (CDDP), and 5-fluorouracil (5-FU) (TPF regimen). One course of CDDP plus 5-FU and two courses of TPF regimen were delivered to one pt. In total, 125 pts (87.4%) received concurrent chemotherapy (CC) using the following regimen: TPF in 55 (38.5%) pts; another CDDP-based regimen in 43 (30.1%) pts; another DOC-based regimen in 22 (15.4%) pts; cetuximab in 3 (2.0%) pts; nedaplatin and 5-FU in 1 (0.7%) pt; and S-1 (tegafur, gimeracil, and oteracil) in 1 (0.7%) pt. The disease stage was I in 5 (3.5%) pts, II in 20 (14%) pts, III in 24 (16.8%) pts, and IV in 93 (65%) pts.
Progression-free survival (PFS) and overall survival (OS) were estimated by the Kaplan-Meier method. Cox regression was performed to explore parameters in association with PFS and OS. The potential variables that were examined included age; gender; primary site; UICC stages; serum albumin, C-reactive protein (CRP), albumin-globulin ratio, body weight (BW) and body mass index prior to treatment; initial CBV and GTV; GTVRR during EBRT; IC; and CC.

Results: The median follow-up period was 23 months (range, 2.95 months). The 2-year PFS and OS rates were 51.3% [95% confidence interval (CI), 40.2-55.7] and 71.0% [95% CI, 58.4-72.6], respectively. PFS was associated with age [hazard ratio (HR): 1.029 (95% CI, 1.001–1.058), p = 0.04]; stage IV disease [HR: 3.755 (95% CI, 1.810-7.788), p < 0.001]; pretreatment CRP [HR: 1.004 (95% CI, 1.000-1.007), p = 0.026]; and GTVRR during EBRT [HR: 0.99 [95 CI, 0.982-0.998], p = 0.016]. OS was related to stage IV disease [HR: 3.669 (95% CI, 1.667-8.071), p = 0.001]; GTVRR during EBRT [HR: 0.986 (95% CI, 0.975-0.997), p = 0.012]; and pretreatment BW [HR: 0.927 (95% CI, 0.892-0.963), p < 0.001).

Conclusion: This study suggested the prognostic value of clinical and volumetric status. Clinical stage, age, pretreatment CRP and BW, initial GTV, and shrinkage of GTV during treatment appear to be critical in the HNC treatment strategy.

EP-1044 Relations between cancer-related communication and dyadic adjustment in head and neck cancer patients: A cross-sectional study

Y.P. Chen1, B.S. Huang1, J.T.C. Chang1
Chang-Gung Memorial Hospital, Radiation Oncology, Taoyuan City, Taiwan

Purpose or Objective: Head and neck cancer patients suffered from swallowing and speaking difficulties, neck pain and stiffness, and cosmetic disfigurement, resulting in interpersonal relationship troubles and social and emotional adaptation issues. Discussing cancer and the quality of communication when facing stress would affect partner’s adaptation to cancer and quality of relationship. This study investigated the (Cancer-related) communication pattern, effect of disease characteristics in head and neck cancer. We used dyadic analysis to investigate the impact and process of communication pattern on quality of relationship.

Material and Methods: This study is cross-sectional design, and subject were the male patients who completion of cancer treatment more than 3 months and their partners with head and neck cancer, included 131 patient-partner dyads. Each participant completed the basic information questionnaire, Communication Pattern Questionnaire, Dyadic and Adjustment Scale.

Results: By treatment, there are no difference on cancer-related communication pattern for both patient and partner. Both patient and partner, their perception of mutual constructive communication was associated with more quality of relationship, Demand-withdraw communication and mutual avoidance was associated with less quality of relationship. Using the Actor-Partner interdependence model (APIM), result revealed that although each person’s cancer-related communication pattern is the strongest predictor of their own quality of relationship, partner’s perception of communication pattern also play significant role on patient’s quality of relationship. According to APIM, only the partner perceived communication pattern could be accounted for by their influence on quality of relationship.

Conclusion: We found that cancer-related communication and interaction of relationship among couples play an important role in the head and neck adjustment process. Thus, except the medical care, clinicians concern with interaction between patient and partner can be enhance their psychological adjustment and illness, particularly the partner’s perception of communication pattern, which may improve the quality of relationship and life adaptation of both couples when they are dealing with head and neck cancer.

EP-1045 Phase I study for evaluation of the safety of high-dose hypofractionated RT in early glottic cancer

T. Yu1, H.G. Wu1, K. Jin Ho1, K. Taek-Gyun2
Seoul National University College of Medicine, Radiation Oncology, Seoul, Korea Republic of

Seoul National University College of Medicine, Otorhiolaryngology, Seoul, Korea Republic of

Purpose or Objective: Reducing overall treatment time has advantages for patient convenience, but also for local control as shown by former studies. Critical organs in the neck cause concern in relation to long-term morbidity and quality of life, but with recent advances with high-precision image-guided and intensity-modulated radiotherapy (IMRT) techniques, avoidance of the organs at risk has become possible. The purpose of this study is to develop an image-guided high-dose hypofractionated vocal cord irradiation technique to treat patients with early stage glottic cancer.

Material and Methods: Eligible patients with early stage glottic cancer provided with informed consent will receive hypofractionated radiation therapy to the larynx with a simultaneous boost to the gross tumor. The fraction size will be stepwise increased from 3.5Gy (total dose 59.4Gy) to 9Gy (total dose 45Gy). To proceed to the next dose level, at least 7 patients should be confirmed that they have no toxicity more than grade 2 after 1 month post-RT. The organs at risk include the larynx, contralateral vocal cord, arytenoids, carotid arteries, inferior pharyngeal constrictor muscle, and spinal cord.

Results: Four patients were enrolled to receive 59.4Gy with 3.5Gy per fraction until July 2015. None of the patients developed toxicity more than grade 2 after 1 month post-RT. The mean equivalent dose in 2Gy fractions (EQD2) to contralateral arytenoid, thyroid gland, inferior pharyngeal constrictor muscle, and larynx were in average 69.5Gy, 12.3Gy, 50.8Gy, and 66.5Gy, respectively. No portion of the carotid arteries were irradiated more than 50 Gy (EQD2) in the IMRT plan. After 3 months of follow-up, all 4 patients demonstrated no more than grade 3 toxicities. Also, all patients showed complete remission by laryngoscopy.

Conclusion: The high-dose hypofractionated IMRT technique provided good sparing of critical structures and resulted in no severe toxicity after a short term follow up. We will continuously perform this phase I clinical trial to stepwise increase the fraction size up to 9Gy.


B. Emami1, R. Borrowdale1, M. Choi1, E. Thorpe1, A. Sethi1, B. Chinksy1, W. Small1
1Loyola University Medical Center, Radiation Oncology, Maywood, USA
2Loyola University Medical Center, Otolaryngology, Maywood, USA

Purpose or Objective: The aim of this study was to investigate the feasibility of high dose-low energy intraoperative radiation (IORT) therapy using INTRABEAM© (Carl Zeiss Surgical, Oberkochen, Germany) in the treatment of malignant Head & Neck tumors.

Methods and Materials: Between March 2014 and July 2015, 12 patients with head and neck cancers (seven with primary malignant parotid tumors and five patients with previously treated recurrent head and neck cancer) received intraoperative radiation therapy after surgical resection at Loyola University Medical Center (Maywood, IL). The median dose prescription was 66Gy (range, 5-14Gy) prescribed to 5mm