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## POSTER

**Severe cutaneous side-effects following radiation therapy in head and neck cancer patients treated with cetuximab**

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Recent randomized studies demonstrated the efficacy of cetuximab in the treatment of head and neck cancer (HNC) patients [1]. Cetuximab has recently received approval in Europe and the USA for treatment of HNC. We report two cases with severe radiation dermatitis in HNC patients under high dose radiotherapy plus cetuximab.

A 57-year-old female and a 50-year-old male presented with locoregionally advanced HNC (squamous cell carcinoma, cT3, cN1, cM0, G2) and were treated with radiotherapy. To improve locoregional control [2], patients received concomitant cetuximab. The female patient received radiotherapy with 6 MV photons in conformal 3-D-optimized technique to a total dose of 58 Gy (29 daily fractions of 2 Gy). In 2001, the female patient developed only a mild erythema after radiotherapy with 50.4 Gy (28 daily fractionations of 1.8 Gy) to her left upper thorax for breast cancer (T2M0N0). In 1999, the male patient had initially been irradiated due to HNC (Squamous cell carcinoma of the larynx; pT2pN1pM0) with a total dose of 66.6 Gy (daily doses of 1.8 Gy) and developed a mild erythema. In 2007, the patient presented with a squamous cell carcinoma of the tongue (cT3, cN0, cM0; G2) and was treated with radiotherapy. Both patients developed erosive dermatitis confined to the irradiation field at a dose of 40 Gy. Histopathological analyses showed signs of acute cytotoxic dermatitis with vacuoloid degeneration of basal keratinocytes and subepidermal blister formation together with a mixed perivascular and interstitial inflammatory infiltrate composed of lymphocytes, histiocytes, neutrophils and eosinophils. No aggravation of cutaneous side effects during radiation therapy in combination with cetuximab has been reported. In fact, Bonner et al. recently demonstrated no severe radiation dermatitis during the combination of radiation therapy and cetuximab, although dose regimens were comparable [2]. The two cases presented here suggest that concomitant cetuximab administration may worsen cutaneous side effects during radiotherapy. Therefore, data from all performed studies using this regimen should be re-evaluated closely in order to obtain sufficient data about the safety of this protocol.

**References**

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## POSTER

**Long term quality of life and psychological response after surgery and radiotherapy in head and neck cancer patients**

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**Aim:** This study was aimed to assess, in head and neck cancer survivors, treatment impact on quality of life and psychological functioning, particularly after facial disfigurement determined by surgery and radiotherapy.

**Methods:** Thirty-two surgery and radiotherapy cancer patients were enrolled. All patients underwent to major ENT surgery, with pedicle or free flap reconstruction and adjuvant radiotherapy. Patients were submitted to a broad test battery 12 month after the end of radiotherapy, during a follow up otorhinolaryngological visit.

Long-term outcome on quality of life (QOL) was assessed by EORTC QLQ C30, including the Head and Neck Cancer module (H&N35). Psychological symptoms were evaluated by MADRS, HADS, HAM-A to rate depression and anxiety; MINI-MAC to assess the psychological adjustment to cancer; Karnofsky Performance status to determine patients functional impairment. Severity and characteristic of pain, when present, were assessed by a visual analogue (VAS) and QUID. Personality profiles of patients was investigated by TCI, to evaluate if specific personality traits could be

associated to higher risk of poor quality of life and depression in cancer survivors.

**Results:** In our sample, low levels of anxiety and depression were observed (HADS-A mean 5; HADS-D mean 4.5; MADRS mean 7.2; HAM-A mean 9.8), associated with high performance status (KPS mean 89%). MINI-MAC scores suggested that patients were able to adopt functional and adaptive coping styles, with higher fighting spirit (mean 3.1), fatalism (mean 2.8) and negation (mean 2.8). Patients reported high levels of quality of life (EORTC global QoL mean 75.7) and perceived health status (EORTC global health mean 76.4). Peculiar personality profiles were observed, probably related to pre-morbid conditions and illness experiences.

**Discussion:** Our preliminary data suggest that head and neck cancer patients do not necessarily experience poor quality of life and depression during 12 follow-up period. However, caution is recommended: in this peculiar population, these encouraging findings could partially reflect low insight.

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## POSTER

**Video-assisted minimally invasive thyroidectomy for tumour of thyroid**

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**Background:** Conventional open thyroidectomy has disadvantage of a big visible scar, short of cosmetic results. Via breast path laparoscopic thyroidectomy is lack of a neck scar, but still has big trauma with need of insufflation. Furthermore, radical cervical lymphadenectomy may be difficult when malignant nodule is revealed by frozen section. This paper is to evaluate the results of minimally invasive video-assisted thyroidectomy (MIVAT).

**Materials and Methods:** 95 consecutive Chinese patients with thyroid nodules were selected for MIVAT from April 2005 to February 2007. There were 72 females and 23 males with a mean age of 40 years (range 13–65 years). The selection criteria were thyroid nodules smaller than 4 cm without history of thyroiditis, hyperthyroidism, and previous neck surgery or irradiation. Under general anesthesia, a 2 cm horizontal cervical incision was placed upon the sternal notch. Platysma was then slit without disjuncted skin flap. The cervical linea alba was divided longitudinally, the plane of the thyroid fascia was entered. Special retractors maintain the operative space without insufflation. Under endoscopic monitor, thyroidectomy is performed using conventional and endoscopic instruments (esp. harmonic scalpel). Without drainage, wound was closed by glue or with subcutaneous absorbable suture.

**Results:** Seventy lobectomy and 25 near total thyroidectomy were completed. Mean operation time of lobectomy was 41.2 min (range 30–120); for near total thyroidectomy, 52.3 min (range 40–150). Seven of eight patients with low-risk papillary carcinoma underwent endoscopic central compartment lymphadenectomy except initial 1 patient converted to open lymphadenectomy. Operative complications were represented by monolateral recurrent nerve palsy in one case, which was cured by RLN repair. There were no cases of hypocalcemia or wound bleeding-sepsis. Average hospital stay was 2 days shorter than traditional open thyroidectomy. The cosmetic result was satisfactory.

**Conclusions:** MIVAT can be considered a safe operation with better cosmesis.

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## POSTER

**Subacute central nervous system morbidity after proton therapy and carbon ion therapy against head and neck cancers and skull base tumors: impact of sequential evaluation by MR imaging**

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**Purpose/Objective(s):** Particle therapy including proton therapy and carbon ion therapy can provide excellent dose distribution because of its physical characteristics. The particle therapy could provide a great advantage to increase tumor doses without increasing normal tissue toxicities of surrounding organs like parotid gland or pharynx. However, especially in the treatment of skull base tumors, certain parts of central nervous system (CNS) such as temporal lobe, brain stem, and cerebrum may not be excluded entirely from irradiated volumes. However, as for subacute or late morbidity of CNS after the particle therapy, there are no reports investigating evaluating sequential evaluation by magnetic resonance imaging (MRI). In this study, we retrospectively reviewed our experience of both the proton therapy and the carbon ion therapy in the Hyogo Ion Beam Medical Center.

**Materials and Methods:** Between May 2001 and December 2005, 16 patients with skull base tumor and 43 patients with head-and-neck cancer with intra cranial invasion were treated with particle radiotherapy. Patient characteristics were as follows; median age: 59 (range, 23–81), male/female: 25/34. Single protocol for proton therapy (65 GyE in 26 fractions using 150 or 190 MeV), and single protocol for carbon ion therapy (57.6 GyE in 16 fractions using 250 or 320 MeV) were employed in the period. Pathologic subtypes of tumor included adenoid cystic carcinoma in 17 patients, chordoma in 9, malignant melanoma in 7, squamous cell carcinoma in 7, others in 19, respectively. Among these 59 patients, 43 patients received proton therapy and 16 patients received carbon ion therapy, respectively. Patients underwent MRI every 3 month during the first 2 years and every 3 to 6 month intervals thereafter. Adverse events were assessed according to the National Cancer Institute Common Terminology Criteria for Adverse Events (CTCAE, v3.0) grading system. Incidence rate of adverse event and survivals were estimated with Kaplan-Meier methods. **Results:** Three (7%) of 43 patients who treated with proton therapy and 5 (31%) of 16 patients who treated with carbon ion radiotherapy had certain degree of MRI findings on CNS necrosis. One (2%) of the patients had some clinical symptoms, such as vertigo and headache (CTCAE Grade 2). The other 7 (12%) patients had no symptoms. Actuarial occurrence rate of grade 1 or greater CNS necrosis at 2 year and 3 year was 7% and 10%, respectively. There was no statistically significant difference between the patients underwent proton radiotherapy and carbon ion radiotherapy. **Conclusions:** Particle therapies were administered to the patients with skull base tumors or head-and-neck cancers, resulting in minimum symptomatic CNS toxicities. However, our sequential evaluation with MRI detected higher incidence of abnormal intensities. This discrepancy between symptom and MRI as for CNS damage may bring important information for the era of particle therapies. Further accumulation of patients and longer follow-up should be warranted.

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## POSTER

**A non-randomized single-centre comparison of induction chemotherapy followed by chemoradiation versus chemoradiation for locally-advanced squamous cell carcinoma of the head and neck**

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**Background:** Gemcitabine (GEM) is a potent radiosensitizer with activity in squamous cell carcinoma of the head and neck (SCCHN). Chemoradiation (CRT) is still the standard treatment for locally advanced (LA) SCCHN. CRT improves local control and overall survival (OS) when compared to radiotherapy (RT) alone. Induction chemotherapy (IC) reduces the risk of distant metastases (DM) and improves OS by 5% when the analysis is restricted to the cisplatin/5 fluorouracil (PF) combination. Adding a taxane to PF clearly confers a better outcome. The concept of sequential treatment of IC followed by CRT (ST) is under active investigation in multiple phase III trials.

**Methods:** We compared the outcome of two cohorts of patients with LA-SCCHN treated at our institution respectively by CRT (December 1998–September 2005) or ST (March 1998–January 2005). Treatment: CRT: GEM 100 mg/m<sup>2</sup> weekly + conventional RT (70 Gy); ST: same CRT preceded by IC, which included DIP (docetaxel, ifosfamide + P [16/23]), TPF (docetaxel + PF [5/23]) or PF [2/23]

**Results:** Patient characteristics are summarized in the table.

Cohort	#pts	M	Age	OP	HP	L	Other	T3	T4	N2	N3
CRT	27	22	55	8	16	1	2	4	16	14	5
ST	23	19	56	10	7	4	2	6	13	15	5

num; pts: number of patients; M: male; Age = median age in years; OP = oropharynx, HP = hypopharynx, L = larynx

**Response to IC:** complete: 5, partial 16, stable 1, progressive 1. Median follow up (FUP) of the surviving patients is 60 months in the CRT cohort and 29 months in the ST cohort. In the CRT cohort, median time to local failure (TLF) was not reached. Median time to distant metastasis (TDM) was 23 months and median OS was 20 months. Median TLF, TDM and OS were not reached in the ST cohort. There was a (not significant) trend to better survival in the ST cohort, while the TLF showed a (not significant) trend in favor of the CRT cohort. TDM was significantly longer in the IC cohort (p = 0.009).

**Conclusion:** TDM was significantly longer in the ST cohort. There was a trend in favor of the ST cohort for OS and a trend in favor of the CRT cohort

for TLF. These data are to be interpreted with extreme caution as this is a non-randomized single-centre comparison of two rather small cohorts of SCCHN patients. However, the observations are in line with preliminary data suggesting a better outcome with sequential therapy.

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## POSTER

**Prospective evaluation of oral health parameters and quality of life in HNSCC patients submitted to radiation therapy**

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**Background:** Treatment-related oral complications are a major problem in HNSCC patients (pts) submitted to RT. We prospectively measured oral health parameters and quality of life (QoL) in HNSCC pts during RT and explored their relationship to treatment-related complications.

**Methods:** Histologically-proven HNSCC pts candidates to RT were consecutively included, after signing an informed consent. Pretreatment oral/dental stabilization was performed, potential sources of infection were eliminated, adequate prophylaxis was made, and pts were followed every week until the end of RT. Salivary flux (Guebur et al, 2004), a dental plaque index (WHO 1999), an evaluation of the periodontal health (PSR: Periodontal Screening & Recording System, WHO 1999) and a dental morbidity score (NCI) were all measured before/after RT. Mucositis, dysphagia and xerostomia before/after treatment were classified using the NCI-CTCAE v3.0. QoL was evaluated using EORTC QLQ-C30/HN35 questionnaires.

**Results:** 70 pts were included, median age 57 y, 44 male. Primary site: oral cavity 33, pharynx 20, larynx 12, lip 5. Staging: 4 T1, 35 T2, 24 T3, 7 T4, 39 N0, 23 N1, 5 N2, 3 N3, 1 M1. All pts received once a day, conventionally delivered RT (median dose: 70 Gy in the primary site), 40 pts received chemotherapy and 44 pts were submitted to surgery. Mean salivary flux decreased from 0.46 mL/min to 0.12 mL/min (p = 0.00, t-test). Mean dental plaque index increased from 14.42 to 23.65 (p = 0.014). An increase of the PSR (p = 0.003, Wilcoxon) and also of the dental morbidity (p = 0.00) scores were observed. As expected, more severe mucositis (p = 0.00), dysphagia (p = 0.00) and xerostomia (p = 0.00) occurred after RT. The association of chemotherapy to RT significantly worsened the PSR index (p = 0.025) and the morbidity score (p = 0.014), as compared to exclusive RT, as well the abuse of alcohol (p = 0.014) and tobacco (p = 0.005). Accordingly, significant worsening in the physical condition, swallowing, senses, speech, pain, xerostomia, viscous salivation and cough QoL modules were detected at the end of RT, but global QoL, emotional and social contact modules showed improvements.

**Conclusions:** Oral health and QoL are affected by RT in HNSCC pts and its objective evaluation can help us to better detect, treat and prevent the RT-related adverse events.

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## POSTER

**Women's squamous cell carcinoma of the head and neck: retrospective analysis of two cohorts**

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**Background:** Changing patterns have been observed in women's head and neck squamous cell carcinoma (SCC), probably related with increasing smoking habits in women and changes in sexual habits, with HPV infection as a recently recognised risk for this disease.

**Objective:** to analyse if there are changing patterns in women's head and neck SCC, concerning age, topography, risk factors and referral to Medical Oncology Services between two retrospective cohorts. All patients were treated in our centre, the main referral centre for these cancers in the south of the country.

**Methodology:** Retrospective analysis of two cohorts: all women with head and neck SCC (excluding lip) treated in this centre between 1995–1999 (cohort 1) and 2000–2004 (cohort 2). Data were obtained from the Portuguese Southern Cancer

**Results:** Cohort 1: Two hundred and nine women, median age of 66 years (median 68). Topography: Oral cavity-59%; Larynx-13%; Oropharynx-13%; and others (Hypopharynx; Quaternizing Nasopharyngeal; Pharynx NOS; Nasal Fossa)-10%. Smoking and alcohol consumption were identified as a risk factor in 37 (18%) and 20 (10%) of these women and clearly denied in 89 (44%) and 95 (47%) of them. No information was registered concerning sexual habits or risk factors for HPV infection. Ten of these women (5%) had other cancers, mostly breast.

Cohort 2: Two hundred eighty four women, median age of 66 years (median 68). Topography: Oral cavity-65%; Larynx-12%; Oropharynx-8%; and others (Hypopharynx; Quaternizing Nasopharyngeal; Pharynx NOS; Nasal Fossa)-15%. Risk factors were assessed in only eighty one of the two hundred eighty four patients from our cohort, smoking and alcohol consumption were identified as a risk factor in 18 (22%) and 11 (14%)