

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.

5536

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/m² 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.

5537

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.

5538

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, medium 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, medium 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%)