oral cavity and oropharynx; 36 underwent S+RT and 36 received exclusive CH-RT. Late effects of treatment assessment included: Radiation Therapy Oncology Group (RTOG)-European Organisation for Research and Treatment of Cancer (EORTC) late radiation morbidity scoring system, DISCHE morbidity recording scheme.
Results: According to AJCC TNM 7th edition, in S+RT group 58% of pts was T1/T2, 42% T3/T4, 39% N0/N1, 61% N2/N3, 22% stage I/II, 78% stage III/IV, 64% G1-G2 and 36% G3. In CH-RT group 55% of pts was T1/T2, 45% T3/T4, 41% N0/N1, 59% N2/N3, 19% stage I/II, 81% stage III/IV, 62% G1-G2 and 38% G3. After median follow-up of 63 months, moderate-severe DISCHE score in S+RT vs CT+RT was: skin toxicity (86%vs81%), subcutaneous fibrosis (97%vs75%), taste impairment (64%vs89%), salivary function (59%vs79%). Long term dysphagia: some discomfort (22%vs39%), soft diet required (42%vs28%), fluids only and naso-gastric tube feeding (11%vs4%).
Conclusions: A different pattern of long term toxicity was observed in S+RTvsCT+RT. Anxiety rate is lower, depression is present in half of patients and is statistically related with dysphagia.

8542 POSTER

Innovative Combined Approaches in Locally Advanced Nasopharingeal Carcinoma Diagnosed in a Non-endemic Population

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Background: Aim of this study was the clinical evaluation of two different schemes of neoadjuvant chemotherapy (NACT) followed by concomitant chemoradiotherapy (CHRT) in locoregionally advanced nasopharyngeal carcinoma (A-NPC) in a non endemic population.
Material and Methods: Seventy patients (51M, 19F, median age: 53.5 yrs, median ECOG PS: 0 (63 pts) and 1 (7 pts); 63 pts type 3 and 7 pts type 2 WHO histology; 36pts stage III, 28pts stage IVa and 6 pts IVb AJCC TNM; 47 pts N2/N3 AJCC TNM) were enrolled. Fourthy pts (A) were treated with 3 cycles of NACT with cysplatin (100 mg/m^2) + epirubicin (90 mg/m^2), followed by cysplatin (100 mg/m^2) and concomitant 70 Gy RT; 30 (B) received 3 cycles of NACT with carboplatin (AUC6) + taxol (175 mg/m^2) followed by carboplatin (AUC1) + Taxol (60 mg/m^2) and concomitant 70 Gy RT.
Results: (%A vs %B) After IC: complete responses (CRs 30% vs 33%), partial responses (PRs 60% vs 60%), no change (NC 10% vs 6.6%); after CHRT: CRs (75% vs 87%), PRs (25% vs 13%). After a median follow-up of 54 months (A) and 49 months (B): 3 and 5 yrs progression free survival was 75% vs 80% and 65% vs 75% respectively and overall survival was 84% vs 85% and 77% vs 80% respectively; 5 yrs locoregional control was 70% vs 90% and 5 yrs distant metastases free survival was 75% vs 85%; toxicity of IC was: G3-G4 neutropenia was 40% vs 83%, G3 thrombocytopenia 12% vs 13%, G3 anaemia 0% vs 10% and G3 mucositis 2.5 vs 6.6%; toxicity of CHRT was: G3-G4 neutropenia 20% vs 63%, G3 thrombocytopenia 10% vs 7.5%, G3 anaemia 2.5% vs 17%, G3-G4 mucositis 32.5% vs 69%, skin toxicity 25% vs 23% and G3 neurotoxicity 5% vs 10%.
Conclusions: Neoadjuvant-chemotherapy with such protocol represents a feasible, efficient treatment for patients with A-NPC, ensuring excellent locoregional disease control and overall survival with low incidence of distant metastases.

8543 POSTER

Pattern of Recurrence After Chemoradiation in Head and Neck Cancer

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Background and Purpose: To identify pattern of locoregional recurrence in patients treated with chemoradiation (RADPLAT protocol) for locally advanced head and neck cancer.
Material and Methods: Between 2000 and 2004, 160 patients with locally advanced head and neck cancer were treated with chemoradiation according RADPLAT protocol (150 mg cisplatin/m^2 i.a, day 1, 7, 15 & 22 or 100 mg cisplatin/m^2 i.v, day 1, 22 & 43). TNM classification is shown in table 1. Among these patients, 40 had local or regional recurrence as the first side of failure. Median follow up time was 11 months (range 3–107 months). CT-MRI scan were used to identify the side of recurrence and correlate the side to radiotherapy fields in 40 patients.
Results: For primary tumour side there were 27 (79.4%) in-field and 7 (20.6%) marginal recurrences. Distribution of recurrences regards to T-stage is shown in table 2. For nodal site there were 15 (65.2%) in-field, 4 (17.4%) out-field, 1 (4.3%) marginal and 3 (16%) in both in-and-out of field recurrences. Table 3 shows the distribution of recurrences according to N-stage.
Conclusion: The most of failures after chemoradiation for locally advanced head and neck cancer occur within the radiation field. Because 79.4% of local and 65.2% of regional recurrences occur in field of radiation the consideration should be given to enhance therapeutic ratio by radiation dose escalation or sensitization of cancer cells by chemo/immuno/radio-therapy.

Table 1

	No	N1	N2a	N2b	N2c	N3	Total
T2	1	1	0	0	0	1	3
T3	16	6	1	8	20	1	52
T4	12	11	4	36	27	15	105
Total	29	18	5	44	47	17	160

Table 2

	T3	T4	Total
In	7	20	27
Margin	2	5	7
No recurrence	2	4	6
Total	11	29	40

Table 3

	No	N1	N3	N2b	N2c	N2a	Total
In	0	3	5	3	3	1	15
Out	2	0	1	1	0	0	4
Margin	0	0	0	1	0	0	1
In & Out	0	0	0	2	1	0	3
No recurrence	4	2	2	3	6	0	17
Total	6	5	8	10	10	1	40

8544 POSTER

The Role of Functional Imaging in Characterising Disease Response in Patients Undergoing Chemoradiation for Head and Neck Cancer (HNC)

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Background: To evaluate the role of FDG-PET, diffusion-weighted (DW) and dynamic contrast-enhanced (DCE) MRI scans in addition to contrast enhanced CT and T1/T2-weighted MRI scans before, during and after primary chemoradiation for HNC.
Material and Methods: Ten patients with histologically proven HNC planned for radical chemoradiotherapy were recruited into this feasibility study. Patients were immobilised in a 5-point thermoplastic mask prior to undergoing CT, PET and MRI (T1, T2, DW, DCE sequences) at the following time points; baseline, following 2 cycles of induction chemotherapy (cisplatin, 5-fluorouracil), after 40 Gy of chemoradiation (excluding PET), 3 and 6 months post-treatment. A region of interest was contoured on each functional imaging modality as follows; 50% maximum SUV threshold (PET), restricted diffusion on b1000 sequence (DW-MRI), maximally enhancing region (DCE-MRI). These volumes were then compared with the volume defined by anatomical imaging (CT/MRI) and changes in target volume which occurred during treatment recorded.
Results: All patients have completed radical chemoradiation for HNC. Eight patients have completed 6 months of follow-up and 1 patient withdrew following the first PET scan due to claustrophobia. The comparison of mean target volumes based on PET, CT and T1-MRI and summary DCE/DW statistics before and after induction chemotherapy is summarised in Table 1.

Conclusion: This method of acquiring functional imaging is feasible and provides biological information to complement the anatomical and morphological characteristics of target volumes. It may be possible using these functional parameters to identify at an early time-point those who are not responding to treatment and may therefore benefit from an escalated radiotherapy dose to improve outcomes.

Table 1. Summary statistics for all patients CT, T1wMRI, FDG-PET (mean volumes), DCE and DW MRI scans before and after induction chemotherapy for head and neck cancer.

Baseline						Post induction chemotherapy					
FDG-PET											
CT (cm^3)		MRI (cm^3)		PET (cm^3)		CT (cm^3)		MRI (cm^3)		PET (cm^3)	
1°	LN	1°	LN	1°	LN	1°	LN	1°	LN	1°	LN
22.50	9.62	21.96	8.56	10.89	4.08	4.66	3.38	4.99	3.18	0.18	0.32
DCE MRI											
Ktrans (mean) = 0.268		IAUGC60 (mean) = 20.8				Ktrans (mean) = 0.181*		IAUGC60 (mean) = 12.4*			
DW MRI											
ADC (mean) $\times 10^{-3}$ mm^2/s = 0.89						ADC (mean) $\times x10^{-3}$ mm^2/s = 1.07*					

Ktrans: Transfer constant, IAUGC60: Initial (60s) area under the gadolinium curve, ADC: Apparent diffusion coefficient, *P < 0.01 for comparison of parameter in scan 1 vs scan 2.

8545 POSTER

Induction TPF Chemotherapy Followed by Concomitant RT, Cetuximab and Cisplatin for Inoperable HN-SCC (Phase II Study EMR-62202–717)

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Background: To test the efficacy and toxicity of induction TPF chemotherapy followed by concomitant RT with cetuximab (CMb) and cisplatin (CP) in locally and/or regionally inoperable HN-SCC in a single-institution, one-arm phase II study.
Materials and Methods: 4 cycles induction TPF (docetaxel 75 mg/m^2, CP 75 mg/m^2, 5-FU 750 mg/m^2 96h infusion Q3W); RT (70 Gy, 7 wks, 2 Gy/day); CMb (400 mg/m^2 1 wk before RT; 250 mg/m^2/wk during RT) and CP (30 mg/m^2/wk during RT). Efficacy was assessed by CT/MRI after the 4th cycle of TPF and 14−16 wks after RTCMbCP. Toxicity was assesed according to NCI and RTOG toxicity criteria.
Results: Between 3/2008 and 11/2009, 30 pts (25 male, 5 female), 42−70 yrs old (median 55), entered the study. Sites of origin were: oropharynx 18, hypopharynx 6, oral cavity 5 and larynx 1. All tumours were TNM stage IV (T4 80%; N2b-3 67%).
Five pts received <3 TPF cycles due to: progressive disease (3), G4 diarrhea (1) and G5 febrile neutropenia with sepsis(1). Twentyfive (83%) pts received 4 cycles of TPF over 62−69 days (median 63). Of these, 16% had G3/4 infusion related reaction to CMb and received RT with CP only; 72% received $\geqslant$6 CMb and 52% $\geqslant$6 CP applications. RT dose of 70 Gy was delivered in all pts over 46−57 (median 48) days. Overall treatment time was 135–154 (median 141) days. Weight loss during therapy was 2−17% (median 8); radiomucositis and dermatitis G$\geqslant$3 were in 96 and 64% of pts, respectively. Radiologically, locoregional complete response (CR) rate after TPF in 30 pts was 30% (local 47%, regional 35%). At 14−16 wks after RTCMbCP 13/25 (52%) pts had CR (locally 80%, regionally 62%). Two pts had salvage neck surgery. Median follow-up time was 24 mos (range 13−33). The locoregional control, disease-free and overall survival rates at 24 mos were: 51% (95% CI, 32−70%), 42% (24−60%), and 52% (34−70%), respectively. According to skin reaction to CMb (G$\leqslant$1: 9 pts vs. G$\geqslant$2: 12 pts): locoregional control was 33 vs. 80%, p = 0.01; disease-free survival 33 vs. 58%, p = 0.09; overall survival 40 vs. 74%, p = 0.18.
Conclusions: Considering prognostically an extremely unfavourable profile of pts, the tested regimen seems efficient with manageable toxicity. G$\geqslant$2 skin reaction correlates with better efficacy in this trial.
Trial sponsors: Institute of Oncology Ljubljana, Merck Serono

8546 POSTER

A Phase II Study of Docetaxel, Cisplatin, and Oral S-1 Induction Chemotherapy Followed by Chemoradiotherapy in Advanced Squamous Cell Cancer of the Head and Neck − Preliminary Results: a Trial of the Korean South West Oncology Group

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Background: Induction chemotherapy with TPF is a standard regimen for patients with locally advanced head and neck squamous cell carcinoma (SCCHN). The purpose of this study was to evaluate the tolerability and efficacy of induction chemotherapy with docetaxel, cisplatin and oral S-1 followed by concurrent chemoradiotherapy (CCRT) for advanced SCCHN. Primary objectives were response rate and safety as neoadjuvant therapy.
Patients and Methods: Eligible patients had previously untreated squamous carcinoma of any head and neck site, with stage III-IVb. All patients were treated with 3 courses of induction chemotherapy. Induction comprised docetaxel 30 mg/m^2 days 1 and 8, cisplatin 60 mg/m^2 day 1, and oral S-1 70 mg/m^2 days 1−14, repeated every 21 days. After induction chemotherapy, cisplatin was given at a dose of 100 mg/m^2 every 3 weeks with radiotherapy.
Results: From October 2008 to September 2010, 35 patients were enrolled. 30 patients (85.7%) completed induction chemotherapy. Response to the induction chemotherapy was as follows: 9 patients (25.7%) achieved a complete response (CR) and 21 patients (60.0%) a partial response (PR). Grade 3/4 toxicity during induction therapy included neutropenia (14.4%), neutropenic fever (2.2%), nausea/vomiting (2.2%), mucositis (2.2%) and diarrhea (4.4%). After CCRT treatment completion, complete and partial responses were recorded in 54.3% and 31.4% of the patients respectively. With a median follow up of 17 months (range 1 to 32), two years overall survival rate was 69.4%.
Conclusions: Docetaxel, cisplatin and oral S-1 induction chemotherapy showed a high level of objective response, mainly PR and moderate treatment-induced toxicity. Induction chemotherapy with an oral S-1 plus docetaxel and cisplatin is convenient, tolerable, and effective, and it is a promising option for patients with good PS.

8547 POSTER

Sequential Chemoradiotherapy Treatment Compliance Between the Elderly and Younger Patients With Head and Neck Squamous Cell Carcinoma

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Background: The proportion of patients with head and neck squamous cell carcinoma (HNSCC) who are elderly (defined as 65 years and above) is increasing. The aging process is associated with a variety of physiological changes that may affect a patient's ability to tolerate aggressive treatments such as sequential chemoradiotherapy (SCRT). In our institution, treatment decisions for patients with HNSCC are based on tumour stage, disease characteristics, performance status and co-morbidity score, not chronological age. As a result, the elderly comprise one-third of all patients commencing SCRT. The aim of this study is to compare SCRT treatment compliance between the elderly and younger patients with HNSCC.
Materials and Methods: SCRT treatment protocol consists of 3 cycles of induction chemotherapy (IC) with cisplatin and 5-fluorouracil followed by radical radiotherapy (RT) with concomitant weekly carboplatin (CC). Patients with histologically confirmed HNSCC who commenced SCRT between October 2003 and June 2010 were identified from our database and included in the study.
Results: 194 patients were identified, 148 males and 46 females. 66 patients were elderly, of whom two died from induction chemotherapy. Data on treatment compliance are shown in the table.
Conclusions: Treatment compliance of SCRT in elderly patients is comparable to that of the younger cohort. There is no statistically significant difference in the parameters studied except unplanned hospitalisation during RT. Chronological age alone does not appear to impair patients' tolerance to SCRT in HNSCC.