significantly associated with SLE have been positive or closely (<5 mm) margins and the overall treatment time RT $\geqslant$ 8 weeks.
**Conclusions:** The administration of weekly cisplatin dose of 40 mg/m$^2$ concomitantly to classical fractionation radiotherapy is a feasible treatment, with a good toxicity profile in patients with head and neck tumours and postoperative risk factors of locoregional recurrence. The positive or closely resection margins and the overall treatment time RT more than 8 weeks were associated with decreased DFS significantly.

**8538** POSTER

**A Phase II Study of Induction Chemotherapy With Docetaxel, S-1, and Cisplatin in Patients With Locally Advanced Head & Neck Squamous Cell Cancer (HNSCC) − Preliminary Results**

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**Background:** Based on doses from two phase I study (Br J Cancer 2007; 97: 851−56, Oncology 2008; 75: 1−7), we ought to evaluate the efficacy and safety of a docetaxel, S-1, and cisplatin combination chemotherapy for the treatment of locally advanced head and neck cancer in the induction followed by chemoradiotherapy (CRT) strategy.
**Patients and Methods:** Eligibility criteria included measurable, non-metastatic, histologically-proven stage III or IV locally advanced head and neck cancer (LAHNC). Patients received docetaxel at a dose of 60 mg/m$^2$ given as a 3-h intravenous infusion followed by a 1-h infusion of cisplatin at a dose of 60 mg/m$^2$ on Day 1 and S1 at a dose of 40 mg/m$^2$ bid on Day 1−14 every 21 days for a total of 2−3 cycles, prior to definitive CRT. Patients achieved complete response (CR) after 2 cycles allowed to receive CRT and patients achieved <CR after 2 cycles received additional one cycle of induction chemotherapy. Patients with CR or PR after induction chemotherapy received definitive CRT (cisplatin 100 mg/m$^2$ every 3 weeks or cisplatin 40 mg/m$^2$ weekly plus 66−70 Gy of radiotherapy). The primary objective of this study was to evaluate tumour response rate for docetaxel-S1-cisplatin combination chemotherapy in subjects with locally advanced head and neck cancer.
**Results:** Between December 2008 and March 2011, 23 patients were treated. Twenty-two (96%) of patients were male and the median age was 61 (range, 46−69). All patients had squamous cell carcinoma. The predominant locations of the tumour were oropharynx (57%), hypopharynx (17%), and larynx (13%). A majority of patients (87%) had Stage IV disease. A total of 56 courses of study therapy were administered and patients received a median of 2 courses of therapy. For ITT analysis, the overall response rate was 74.0% and CR rate was 34.8% after induction chemotherapy. Grade 3/4 neutropenia was the predominant hematology abnormality (56.5%) and grade 2 anemia was noted in 26% in this study. Non-hematologic toxicities were generally mild but grade 3 diarrhea was observed in 17.4% of patients. Eighteen patients received subsequent CRT (N = 14) or RT alone (n = 4).
**Conclusion:** Docetaxel-S1-cisplatin combination for induction chemotherapy had therapeutic efficacy with manageable toxicity in patients with LAHNC.

**8539** POSTER

**Outcome and Prognostic Factors in Adenosquamous Carcinoma of the Head and Neck − a Multicenter Rare Cancer Network Study**

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**Background:** Adenosquamous carcinoma (AC) of the head and neck is a distinct entity first described in 1968. Its natural history is more aggressive than squamous-cell carcinoma. The aim of this study was to assess the clinical profile, patterns of failure, and prognostic factors in patients with AC of the head and neck treated by radiation therapy (RT) with or without chemotherapy (CT).
**Materials and Methods:** Data from 19 patients with stage I (n = 3), II (n = 1), III (n = 4), or IVa (n = 11) AC, treated between 1989 and 2009, were collected in a retrospective multicenter Rare Cancer Network study. Median age was 60 years (range, 48−73). Fifteen patients were male, and 4 female. Risk factors, including perineural invasion, lymphangitis, vascular invasion, positive margins were present in the majority (83%) of the patients. Tumour sites included oral cavity in 4, oropharynx in 4, hypopharynx in 2, larynx in 2, salivary glands in 2, nasal vestibule in 2, maxillary sinus in 2, and nasopharynx in 1 patient. Surgery (S) was performed in all but 5 patients. S alone was performed in only 1 patient, and definitive RT alone in 3 patients. Fifteen patients received combined modality treatment (S+RT in 11, RT+CT in 2, and all of the three modalities in 2 patients). Median RT dose to the primary and to the nodes was 66 Gy (range, 50−72) and 53 Gy (range, 44−66), respectively (1.8−2.0 Gy/fr., 5 fr./week). In 4 patients, the planning treatment volume included the primary tumour site only. Eight patients were treated with 2D RT, 7 with 3D conformal RT, and 2 with intensity-modulated RT.
**Results:** After a median follow-up period of 39 months (range, 9−62), 9 patients developed distant metastases (lung, bone, mediastinum, and liver), 7 presented nodal recurrences, and only 4 had a local relapse at the primary site (all in-field recurrences). At last follow-up, 7 patients were alive without disease, 1 alive with disease, 9 died from progressive disease, and 2 died from intercurrent disease. The 3-year and median overall survival, disease-free survival (DFS), and locoregional control rates were 55% (95% confidence interval [CI]: 32−78%) and 39 months, 34% (95% CI: 12−56%) and 22 months, and 50% (95% CI: 22−78%) and 33 months, respectively. In multivariate analysis (Cox model), DFS was negatively influenced by the presence of extracapsular extension (p = 0.01) and advanced stage (IV versus I−III, p = 0.002).
**Conclusions:** Overall prognosis of locoregionally advanced AC remains poor, and distant metastases and nodal relapse occur in almost half of the cases. However, local control is relatively better, and early stage AC patients had prolonged DFS when treated with combined-modality treatment.

**8540** POSTER

**The Treatment Result of Advanced Stage Oropharyngeal Cancer by Radiotherapy With or Without Chemotherapy − the Impact of Intensity Modulation Radiotherapy and FDG-PET**

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**Introduction:** To know impact of intensity modulation radiotherapy (IMRT) and FDG PET and the tumour response for tumour control for advanced stage oropharyngeal cancer.
**Material and Methods:** There were 251 stage III-IV oropharyngeal cancer patients received radical treatment. Majority (90.0%) was male; usually patients had habit of smoking (81.7% ), alcohol drinking (69.7%) and betal quid chewing(56.2%). Most (77.7%) were tonsil cancer and tongue base (13.5%). FDG PET was given in 115 patients before radical treatment. The stage distribution was stage III: 54(21.5%), stage IVa: 141(56.2%) and IVb: 56(22.3%). There were 167 (66.5%) patients received IMRT; concurrent Cisplatin based chemotherapy was given in 212(84.4%) patients. The analysis was based on intent to treat.
**Results:** The 3-year disease specific survival(DSS) and loco-regional control(LRC) in stage III, IVa, IVb were 77.1%, 53.9% and 37.8%;. P = 0.000; 68.4%, 51.5%, 31.6%, p = 0.000 respectively. Thirty eight (15.1%) patients had 2$^{nd}$ cancer. Head and neck(19 patients) and esophageal cancer(10 patients) were most common. Smoking, overall stage, FDG PET, overall stage, T stage and RT dose is independent factor for disease control. FDG PET improved tumour control in OS, DSCC, LRC and distant metastasis. Patients with IMRT had less incidence of > = grade 2 xerostomia and dysphagia at 1year after radical radiotherapy.
**Conclusion:** FDG PET but not IMRT can improve tumour control and overall survival in oropharyngeal cancer. IMRT can decrease xerostomia and dysphagia.

**8541** POSTER

**Surgery + Radiotherapy Vs Exclusive Chemo-radiation Therapy in Oral and Oropharyngeal Cancer − Long Term Toxicity Evaluation**

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**Background:** Treatment of head and neck tumours negatively affects speech, swallowing, and quality of Life (QoL). Our aim was the evaluation of long term toxicity comparing surgery + radiotherapy (S+RT) and exclusive chemo-radiation therapy (CH-RT) regimes.
**Material and Methods:** Seventy-two patients, homogeneous for demographic and TNM characteristics were affected by a tumour of

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.