Conclusion: In this retrospective analysis, a non-surgical approach leads to a high RC in cN+ SCC of the oropharynx.

Table 1: T- and N-classification (UICC 2002)

	N1	N2a/b	N2c	N3
T1	2	3	-	2
T2	9	5	-	2
T3	3	9	5	-
4	1	13	8	1

5529 POSTER

Hyperfractionated radiation therapy and cisplatin for locally-advanced head and neck cancer (LAHNC). Experience of the Hospital de Navarra

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Purpose: to assess toxicity, quality of life, and activity of the two schemes of hyperfractionation with the same concommitant chemotherapy used at our Center during 2000–2004 for LAHNC patients.
Material and Method: Seventy three patients were treated from January 2000 to December 2004. First 30 p. were treated with Accelerated Fractionation with Concomitant Boost (AFX-C) at 1.8 Gy/fx/d. 5 days/wk to large field + 1.5 Gy/fx/d to boost field for the last 12 treatment days to a total dose of 72 Gy/42fx/6 wks., and chemotherapy consisting of cisplatin, 20 mg/sqm/day, 5 days, in continuous perfusion, on weeks 1 and 5 of radiation. The last 30 patients received the same chemotherapy, and Hyperfractionation (HFX) at 1.2 Gy/fx, B.I.D, 5days/week to a total dose of 76.8 Gy to 81.6 Gy. Both groups had similar characteristics. Stage IV(AJCC) 94% in AFX-C group against 88% in HFX.Acute normal tissue effects were graded with the RTOG radiation morbidity scoring criteris. Quality of life was assessed usin the EORTC questionnaires QLQ-C30 and H&N 35. All the time related end points were estimated using the Kaplan-Meier method.
Results: 2-year locol control for both treatments were similar (54% a 67%, p = ns). Grade 3+ acute cutaneous toxicity appeared in 43% (AFX-C) and 23% (HFX). Grade 3+ mucositis in 93% and 57%, respectively. Quality of life scores are acceptable in general. Patients who receive the treatments can adequately stand them. There are alterations during the treatment period in some toxicity, functioning and psychosocial areas. Clinical data and quality of life scores are better in one of the two treatment protocols compared (HFX).
Conclusions: In our experience, both treatments have similar activity, but when combinig with cisplatin, AFX-C has more grade 3−4 acute toxicity than HFX. Nevertheless, QL scores shows that both treatments are tolerables by the patients.

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Locoregional failures after IMRT alone for oropharyngeal cancer: would a traditional approach have been better?

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Background: Since IMRT provides greater conformality of high dose distributions compared to traditional conformal 3-field technique (3FT) and since we have shown that electively treated regions often receive a higher than prescribed dose just because they are in the trajectory of boost fields (Rao et al, ASTRO 2006), we cannot exclude that 3FT may avoid some IMRT treatment failures, particularly if outside the IMRT high dose region.
Materials and Methods: We analyzed patients treated at UTMB from 05/02 to 02/06 that met the following criteria: 1. local (LF) or regional failure (RF) following definitive IMRT alone (no chemotherapy) for oropharynx SCC; 2. no surgery except pretreatment tonsillectomy or neck dissection after IMRT (residual disease at neck dissection was considered RF); 3. minimum f/u of 12 mo from treatment end. Failures were investigated as follows: the diagnostic imaging study containing the failure was co-registered with the initial pretreatment planning CT; the failure was contoured and expanded by 5 mm to obtain a PTV of the failure (PTV-fail); a traditional conformal 3-field-based (3FT) plan, targeting the same high dose PTVs at the same dose per fractionation as the original IMRT plan, was generated for comparison; the PTV-fail mean dose, as a percentage of the gross disease prescription dose (MD%) was recorded for each plan. If ⩾95% of the PTV-fail was encompassed by ⩾95% of the MD% by the IMRT plan, the failure was designated a "within high dose failure" (WHDF). If not, the failure was designated an "outside high dose failure" (OHDF). IMRT and 3FT plans were compared by PTV-fail MD%.
Results: Three LF and six RF occurred in eight pts. Time to failure and dosimetric comparison details are reported in the table. Four failures were scored as WHDF. The remaining five failures were considered OHDF. Wilcoxon t test showed no difference b/w IMRT and 3FT plans in terms of PTV-fail MD%, considering all failures (p = 0.007) or only OHDF (p = 0.12).

Failure		IMRT PLAN		3FT PLAN	MD% Difference
Site	Time to failure (mo)	MD%	Possible reason for failure	MD%	(3FT – IMRT)
RF	2.5	103.1	WHDF	99.2	−3.8
RF	35.2	103.0	WHDF	99.0	−4.0
LF	10.3	104.4	WHDF	98.1	−6.3
LF	3.3	102.2	WHDF	98.6	−3.6
LF	14	99.9	OHDF	94.6	−5.3
RF	20.8	35.0	OHDF	37.4	2.4
RF	12.2	85.6	OHDF	76.8	−8.8
RF	3.3	83.2	OHDF	76.9	−6.3
RF	13.1	84.1	OHDF	73.1	−11.0

Conclusion: These data reject that 3FT would have treated these failures to a higher dose.

5531 POSTER

PET/CT guided IMRT in head and neck cancer: impact on treatment planning and local control: Early results

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Purpose: To evaluate the impact of positron emission tomography (PET)/computed tomography (CT) fusion imaging on treatment planning in head and neck cancer patients treated with intensity modulated radiotherapy (IMRT) and to assess the role of PET/CT in the evaluation of tumor response
Methods and Materials: Twenty-five patients, 4 women and 21 men, who underwent PET/CT simulation from August 2005 through August 2006 were enrolled in this study. Median patient age was 56 years. Tumor location varied from 15 in the nasopharynx, 5 in the larynx, to 1 in the tonsil, cervical esophagus, pyriform sinus, base of tongue and retromolar trigone. All patients had intact squamous cell carcinomas and presented for curative radiotherapy at our department. Initial T stage was 1−2 in 12, 3−4 in 13 and initial N stage was 0 in 11, 1−3 in 14 patients. All imaging and data acquisition was performed on an integrated PET/CT system in the treatment position. No contrast medium was used for the CT examination. On the fused PET/CT images GTV (gross tumor and involved lymph nodes) was contoured by a radiation oncologist and neuroradiologist after the PET images were reviewed by a nuclear medicine physician. All patients underwent definitive IMRT with a Simultaneous Integrated Boost technique. Sixty-eight percent received concomitant chemotherapy (CT), 12% neoadjuvant and concomitant CT, and 4% concomitant Cituximab. A follow-up PET/CT scan was performed in 96% of the patients median 5 months (range 3−14 months) after the end of the therapy.
Results: PET/CT up-staged the N-stage in16% (4/25) and M-stage in 4% (1/25) of patients. Two patients were diagnosed with biopsy proven additional primary lung cancers. After a median follow-up of 11 months (range, 6−18 months) two patients with advanced supraglottic primaries invading the thyroid cartilage had biopsy proven recurrent disease, one in the primary site, the other one in thyroid gland. Two patients had suspicious residual disease on the follow up PET/CT, but pathologic evaluation revealed no evidence of persistent disease.
Conclusions: PET/CT fusion enables better visualisation of local and locoregional tumor extension and has the potential for reducing the risk of geographic misses. In this study, we demonstrated that PET/CT simulation lead to changes in treatment planning and management in 7/25 patients. PET/CT was also useful to predict the local recurrences in two patients. This cohort of patients will be followed to investigate the relationship between PET/CT response metrics and patterns of failure and survival.