tissue in 38 cases. KIT expression by IHC was investigated in 24. In a different set of 14 cases in whom cryopreserved tumor specimen were available, co-expression of *c-kit* and its ligand (stem cell factor, SCF) was investigated by m-RNA RT-PCR analysis. Study of concordance between IHC and RT-PCR analysis for *c-kit* is ongoing.

Results: The results of IHC assessment in different histological types are:

	ACC	ADC	SDC	Other types	Total
c-kit	10/14 (71%)	2/4 (50%)	1/1 (100%)	2/5 (40%)	17/24 (62%)
HER2	1/20 (5%)	3/7 (43%)	1/2 (50%)	2/9 (22%)	7/38 (18%)
EGFR	7/20 (35%)	1/7 (14%)	1/2 (50%)	4/9 (44%)	13/38 (34%)
ER and PgR	0/20 (0%)	0/7 (0%)	0/2 (0%)	0/9 (0%)	0/38 (0%)
AR	0/18 (0%)	1/7 (14%)	2/2 (100%)	1/8 (12%)	4/35 (11%)

Of note, in this series of SGC a high proportion of cases (62%) expressed c-kit; while none expressed ER or PgR. Co-expression of *c-kit* and SCF m-RNA was shown in 2 of 7 ACC pts (28%), in 4 of 6 SDC pts (67%) and in one ADC patient.

Conclusion: A high proportion of SGC expresses c-kit and EGFR. Co-expression of *c-kit* and SCF, suggests a functional autocrine loop and was frequently detected in aggressive histological types such as SDC and ADC. The activity of new targeted drugs, such as hormone therapy, tyrosine-kinase inhibitors and monocional antibodies receptors aimed should be investigated in these rare tumors.

376 POSTER

Treatment of recurrent head and neck cancers: results of two radiochemotherapy (CT-RT) combinations

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The purpose of the study was to compare 2 different regimen of re-irradiation using the same CT-RT combination, but delivering 2 dimensionnal (2D) planning in one group (106pts) and 3 dimensionnal (3D) conformal radiotherapy (RT) in the other group (12pts).

118 patients with a history of prior irradiation (≥ 45Gy) were treated between 1988 and 1999 by RT combined with concomitant CT: Hydroxyurea (1,5g/d) and 5-FU (800mg/m2/d) from day 1 to day 5 for head and neck cancer. All patients were considered unresectable at the time of recurrence.The median age was 58 yrs (range, 28-78). The primary sites were oropharynx (43 pts), hypopharynx/larynx (35 pts), nasopharynx (16 pts),oral cavity (15 pts), combined sites (6 pts) and others (3 pts).The median dose prior to re-irradiation was 65 Gy (range, 45 to 80) and the median time to re-irradiation was 38 months (range, 4 to 288). RT consisted of 60 Gy in 12 weeks (10 Gy/week given by 2 Gy/fraction every two weeks) using 2-D treatment while the same total dose was given in 6 weeks when using 3-D conformal RT.

Results: Despite much more intense treatment in the 3-D group, the acute toxicity (mucositis, dermatitis, myelosuppression) was not significantly different between the two groups.A complete tumor regression was observed in 41% of the pts in the 2-D group and 58% in the 3-D group. However, given the short follow-up and the relatively limited number of pts in the 3-D group, conclusions regarding tumor response need further investigations.

Conclusion: The use of 3-D conformal RT allowed to increase the dose intensity of re-irradiation combined with chemotherapy, without increasing deleterious effect.

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Dosimetric evaluation of infield complications following chemo-radiation therapy for advanced head & neck cancers

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Purpose: to study the dosimetry in head & neck radiation treatments with and without intensity modulation (im) & correlate them with observed clinical outcomes on a prospective basis.

Materials & methods: 39 patients with locally advanced head & neck cancers were treated with concurrent chemo-radiation therapy (1.5 gy bid with taxol, 5fu & hydroxyurea; 5 days therapy followed by 9 days break; 4 to 5 such cycles). 18 patients had im (im group). 21 patients had radiation without dose im (nim group). Dosimetric evaluations (isodose curves & site specific maximum doses) were analysed. Acute & chronic toxicities were recorded using rtog criteria.

Results: there were no differences in the chemo-radiation doses (im=69.83gy, nim=70.14gy,p=0.93) at midplane central axis(cap). Maximum doses at cap was Nim=76: 25gy vs im=72.65gy,p=0.01. Maximum doses at the thinnest portion of the neck was nim=83.78gy vs im=73.55gy,p<0.001. Nim group patients had more treatment interruptions due to acute toxicities(43% vs 11%). After a median follow-up of 21 months, im group had lower gr 3 or 4 acute toxicities: dermatitis(50% vs 62%), mucositis(61% vs 90%), pain(28% vs 67%) and dysphagia(50% vs 67%). Im group had lower gr 3 or 4 chronic toxicities: skin(0% vs 24%), dysphagia(22% vs 43%), salivary gland(22% vs 38%). 4 patients of the nim group had postcricoid strictures, 1 had laryngeal stricture & 1 had mandibular radionecrosis. None of these occurred in the im group. These complications occurred at 'hot spots' on dosimetric analysis.

Conclusion: clinical toxicities observed in patients receiving radiation therapy with chemotherapy for advanced head & neck cancers are accentuated by dose inhomogeneities resulting from anatomic pecularities of the head & neck region. Techniques to reduce 'hot spots' should be considered in delivering high radiation doses to the head and neck region, especially when given concurrently with chemotherapy.

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Conformal boost radiotherapy for carcinomas of the naso-pharynx: local control and dose/volumes distribution

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Introduction: Conformal radiotherapy in cancers of the nasopharynx improves the dose distribution to the Planing target volume (PTV) compared to conventional radiotherapy. The aim of the study was to analyse the correlation between local control and dose-volumes distribution.

Material/methods: From 1995 to 2000, 17 patients (pts) with nasopharynx carcinoma had a boost conformal irradiation. There were 13 males and 4 females. The mean age was 47 years (18 to 69). There were 5 T2, 5 T3 and 7 T4 (4 N0, 1N1, 11 N2 and 1 N3) (UICC 1998). Six pts received a neoadjuvant chemotherapy (Bleomycin - Epirubicin - Cisplatin in 5 pts and 5 FU - Cisplatin in 1 pt) and 9 a concomitant chemoradiotherapy (Cisplatin x 3 and 2 cycles 5FU - Cisplatin). The first step of irradiation was a classical technique (2 or 3 fields treating the upper neck and the PTV and 1 anterior field treating the lower neck). The dose delivered was 50 Gy in 25 fractions. The boost to tumor PTV was applied by conformal radiotherapy with 2 to 5 fields. The energy used was X rays of 6 to 25 MV. The dose delivered ranged from 20 to 24 Gy (mean dose 21.3 Gy) in 10 to 12 fractions. The immobilization used was a thermoplastic facial mask. The technique of simulation for the last 9 pts was virtual (image acquisition with a helicoidal CT scan using a 3.2 mm slice thickness; drawing contours around the selected structures; multiple fields and customized focused blocks designed by Beam Eye View with a 5 mm margin around the PTV; isocenter treatment defined by virtual simulation placed under the accelerator; Digital Radiograph Reconstruction compared to the gammagraphy during the first session and calculation of the Dose Volume Histograms (DVH) performed for each volume).

Results: The mean follow-up was 20.8 months (7 - 53). Overall survival was 81% and 71% at 2 and 5 years. Local control was 88% at 9 months with a plateau. Mean PTV was 110 cc (27-253 cc). Mean minimal dose to the PTV (Dmin) was 59 Gy (33 - 71 Gy). Mean dose to 95% PTV (D95%) was 66 Gy (58 - 71 Gy). Mean PTV receiving minimun ICRU dose (prescribed dose - 5% = 66 Gy) (V66Gy) was 93% (58 - 100%). For local control, prognostic factors were: Dmin ~ 60 Gy (73% vs 0%; p = 0.04), D95% ~ 60 Gy (93% vs 0%; p = 0.001) and V66Gy - 90% (100% vs 0%; p = 0.00004) and - 95% (73% vs 0%; p = 0.04).

Conclusion; A dose > 60 Gy delivered to 95% PTV and more than 90% of PTV covered by the isodose 66 Gy seem to reduce the risk of local recurrence.