overnight. PCR-SSCP analysis was performed using standard methods. Four pairs of primers for exon 5 to exon 8 of the p53 gene were used.

Results: In 16 out of 26 cases studied informative results were obtained both from IHC and PCR analysis. Six out of 16 exhibited high (>70% staining nuclei) p53 expression and 4/16 p53 gene mutation. Discordant results were obtained in 6 cases (38%); two mutated cases had low (<10%) IHC staining and 4 cases with high IHC staining had no p53 gene mutation.

Conclusion: In one third of the cases IHC and PCR-SSCP analysis was discordant. Low p53 protein expression in mutated cases could be explained by production of a truncated protein. IHC staining without p53 mutation could be explained by mutations outside exons 5–8 or overexpression of wild-type p53.

429 POSTER

CELL CYCLE EFFECTS IN HEAD AND NECK CANCER AFTER TREATMENT WITH INTERFERON AND RETINOIC ACID

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Combined treatment with retinoic acid and interferon reduces the growth rate of head and neck cancer. The object of the present investigation was to determine what cell cycle effects that are associated with this alteration in tumour growth rate. Two groups of xenografts grown in nude mice were compared: group 1 was treated with retinoic acid and interferon *in vivo*; group 2 served as controls. After three weeks BrdU was injected and tumours excised at regular intervals during 72 hours. From labelling data determined by flow cytometry the cell cycle was analysed by a computerised mathematical model. The results show that treatment with retinoic acid + interferon led to slowing of tumour growth rate that was associated with a prolongation of the G0/G1 phase and a shortening of the G2 phase. The findings give support to studies indicating that treatment with retinoic acid and interferon leads to cell differentiation with a larger proportion of cells resting in GO.

430 PUBLICATION

HYPERFRACTIONED IRRADIATION IN THE TREATMENT OF LARYNX CANCER T1ANOMO

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Early larynx cancer (glottic T1aNoMo) can be cured primary radiotherapy in 80–90%. Radiotherapy technique is important in obtaining of good results. We studied 120 patients who had received radiotherapy in two different regimes for T1a glottic carcinoma. Histologically all cases were squamous cell carcinoma. Traditional radiotherapy was used to treat 90 patients. All patients received irradiation 5 times a week 2 Gy a day, a total dose 66–70 Gy. We have cured 77.8% of patients; 21.1% had local relapse, 1.1%—regional metastases, 5-years survival after salvage surgery was 97.1%. 30 patients were treated with hyperfractionated irradiation. Single dose 1.1 Gy 2 times a day with 4 hours interval for 5 days a week, summary dose—66–70 Gy. 90% patients were cured; 10%—had local relapse. 5 years survival is 96.7%. Our results suggest that hyperfractionated irradiation is very important in obtaining of good results.

431 PUBLICATION

EVALUATION OF THE EFFICACY AND SAFETY OF GM-CSF IN THE PHOPHYLAXIS OF MUCOSITIS IN PATIENTS WITH HEAD AND NECK CANCER TREATED WITH RT

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Introduction The presence of side effects during radiotherapy for Head and Neck cancer, like oral mucositis, is a major cause of morbidity that influences the overall treatment time and the probability of local tumor control.

Material and Method In this comparative pilot study 10 patients with Head and Neck cancer >T2N1M0 were enrolled either in group A (GM-CSF administration combined with RT) or in Group B (RT alone). All patients in both groups received 200 cGy/day 5 days/week. Treatment duration was 6 weeks. Patients in group A received 1 mcg/kg/day 7 days/week, starting on week 3 till the end of the treatment.

Results GM-CSF administration was well tolerated for almost all patients. The radiation side effects that were statistically evaluated, were milder in group A than in group B (control group). During week 6 moderate pain was present in 41.7% of patients in the control group versus 5.9% (group A) ($P = 0.004$), severe pain 25% was present in 25% versus 0% ($P = 0.004$), extensive erythema was present in 41.7% versus 6.2% ($P = 0.009$). Similarly, 42.1% of patients in control group had food intake with the use of narcotics versus 0% in group A ($P = 0.008$).

Conclusion A comparative study with a larger number of patients will establish the use of GM-CSF in the prophylaxis of radiation mucositis.

432 PUBLICATION

MATCHING HALF BEAMS IN HEAD AND NECK RADIOTHERAPY. PLANNING AND DOSIMETRY

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Introduction: In the treatment planning of the head and neck tumours, usually matching fields are necessary. There are inherent hazards with this technique in that overlapping of these portals may result in hot and cold spots at the field edges.

The use of linacs with independent collimators enables to eliminate the beam divergency, matching then the central axes of adjacent fields where there is no divergence. On the other hand, the 3D radiation treatment planning systems allow us to calculate the dose variation through the field's junction.

Technical description: We describe a technique consistent in three isocentric half-fields (two upper laterals and one lower anterior). Patients are immobilized with a thermoplastic mask. The upper limit of the lateral fields and the midline are outlined in the mask. It's not necessary to move either the patient or the treatment couch for the different fields of treatment. The SSD for each field is calculated at simulation and/or planification time. The lateral fields are shielded with individual focalized Cerrobend's blocks, leaving the half field limit free.

Conclusion: In this technique there isn't beam divergency at the junction's fields, so the homogeneity is maximal. A dosimetric study with a 3D planning system shows a good distribution of dose. The dose contribution of each half field in the other half field is <2%. The new linacs working with asymmetric collimators enable us to use the split matching technique in a simple, reproducible and accurate form.

433 PUBLICATION

VINBLASTINE (VLB) IN DIFFERENTIATED THYROID CARCINOMA (DTC) EFFECT MONITORED BY DNA MEASUREMENTS

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Vinblastine (VLB) infusions 2 mg over 12–24^h were applied to 28 patients (21 females, 7 males, aged 32–85 years) with inoperable or metastatic DTC (follicular 13, papillary 8, Hürthle cell 7). Cytopunctures were performed before and sequentially after VLB infusions. Specimens were processed for Flow Cytometry (FCM) DNA studies (DAPI staining, PAS II cytometer) in all patients and for image cytometry analysis (Cyto-Savant^{TM} cell image analyzer) in 12 patients.

In 17/27 patients (67%) a partial response was achieved. In responders, FCM DNA measurements, changes in DNA distribution pattern (increase in S, G_2 + M compartment, polyploidy, broad G_1 peaks and debris) were observed. Cytomorphological changes after VLB appeared later than changes in DNA histograms. Image cytometry data have also been analyzed in terms of DNA distribution diagrams, as well as changes in other nuclear (texture) features.

Our results show that VLB is effective in DTC, and that sequential DNA measurements can predict clinical effectiveness of VLB.