

Results: The oxygenation of tumors decreased during the first cycle of RCTh and increased during the two-week break, followed by a maximum decrease of the pO₂-value during the second course of RCTh ($p = 0.004$). The initially measured median pO₂-value was a good parameter to predict tumor response to RCTh ($p < 0.01$). Follow-up of the first 10 patients who were measured from March 94 to February 95 suggest that a good oxygenation (mean pO₂-value) after the two-week break correlates with a better prognosis ($p = 0.02$).

Conclusion: Preliminary results show that the initial oxygenation of the tumors as well as the reoxygenation during a fortnight break influence the tumor response to RCTh.

835

POSTER

Randomized clinical trial of continuous accelerated irradiation (CAIR – 7 days a week) for head and neck cancer. Preliminary treatment results

K. Skladowski, B. Maciejewski, W. Przeorek, M. Goleń, B. Pilecki, J. Swiatnicka. *Radiotherapy Clinic, Centre of Oncology, MSC Institute in Gliwice, Poland*

Purpose: Evaluation of preliminary (2-year) treatment results of 7 days a week continuous accelerated irradiation (CAIR) in compare to conventional radiotherapy

Methods: One hundred and one patients with squamous cell carcinoma of oral cavity, oro- and hypopharynx and supraglottic larynx in stage T2–4 N0–1 M0 were randomized between 2 groups: A (CAIR) – 52 pts and B (control) – 49 pts, and treated by radiation therapy alone in 1994–96. In majority (81%) there were the patients with advanced clinical stage (T3+T4). Irradiation technique and volumes, total and fraction doses were exactly the same in 2 groups of patients. Only the overall treatment time was shorter by about 2 weeks in CAIR group comparing to control because of the lack of weekend breaks.

Results: Ninety-eight patients (98%) completed the whole designed radiotherapy. Generally, 2-year local tumour control rate (LTCR) in CAIR arm was 85% and in control arm 40% ($p < 0.0001$). In aspect of tumour localization and stage the LTCR was significantly higher in CAIR arm than in control and was respectively as follows: 75% vs 26% in oral cavity, 86% vs 36% in oropharynx, 88% vs 50% in hypopharynx and supraglottis; 100% vs 64% for T2, 94% vs 39% for T3 and 66% vs 26% for T4. There were 14% of grade III and IV radiation morbidity in CAIR arm and 4% in control arm.

Conclusion: The high effectiveness of CAIR fractionation reflects the net effect of exclusion treatment weekend breaks and shortening the overall treatment time by 2 weeks.

836

POSTER

Prognostic significance of irradiation of the posterior cervical lymph nodes in radiotherapy of oral cancer

M. Niewald¹, T. Rudl¹, N. Licht¹, K. Lederer¹, K. Walter¹, U. Nestle¹, H. Iro², H. Landau³, K. Schnabel¹. ¹Dept. of Radiotherapy; ²ENT-Clinic; ³Dept. of Oromaxillofacial Surgery, Univ Hosp of Saarland, Homburg/Saar, Germany

Purpose: We examined retrospectively if the inclusion of the posterior cervical lymph nodes (PCLN) in the planning target volume improves prognosis after radiotherapy of cancer of the oral cavity.

Patients and Methods: 188 patients were evaluated. 139 of them had been treated postoperatively (57 with inclusion of the PCLN, 82 without), 49 primarily (32 with PCLN, 17 without). These groups were evaluated separately. All patients were treated using lateral opposing portals in shrinking-field technique. Total dose to the primary varied mainly from 60–82.8 Gy (single dose 2×1.2 or 2.0 Gy), the dose to the PCLN varied from 30 to 60 Gy. Mean follow-up was 3.1 years.

Results: There was a bias between the groups towards a lower N-classification in patients whos PCLN had not been irradiated. Nevertheless, we never experienced a progression in the posterior cervical region during follow-up. In both groups locoregional tumor outcome, overall survival, progression-free survival and lymphoma-free survival were identical. Applying COX regression hazard model the dose to the PCLN never was an independent prognostic factor.

Conclusion: We think that radiotherapy of the PCLN can be omitted when there is no proven tumor involvement in the posterior neck triangle.

837

POSTER

Inhibited expression of fibronectin in laryngeal squamous cell carcinoma cell lines

T. Görögh, B.M. Lippert, S. Gottschlich, A.M. Niemann, M. Weller, M. Seiwerts, E. Weber, J.A. Werner. *Department of Otorhinolaryngology, Head and Neck Surgery, University of Kiel, Arnold-Heller-Straße 14, 24105 Kiel, Germany*

Purpose: Molecular studies conducted on cell lines have demonstrated numerous alterations concerning the expression of different genes. A method called arbitrary primed PCR allows to detect changes in gene expression and does not require the construction of cDNA libraries. Aim of this study was to search for differences in the mRNA expression profiles of laryngeal squamous cell carcinoma (SCC) cells and normal keratinocytes from mucosa of the upper aerodigestive tract.

Methods: Total RNA was isolated from both cell types and reverse transcribed. cDNA was incubated with 0.2 μ M of one of 26 decameric arbitrary primers, 0.2 μ M of the corresponding anchored oligo (dT) primer, 2.5 μ M dNTPs, 1.5 μ M MgCl₂, 2 μ Ci ³³P-dATP, and 2.5 U Taq-polymerase in a final volume of 50 μ l. PCR was then conducted as described previously. After electrophoresis transcripts of interest were recovered from the gel and cloned into plasmid vector for sequence analysis.

Results: Selective expression of a 191 bp mRNA fragment was detected in normal keratinocytes. Although the sequence represented only a part of the mRNA including 3' poly (A) end, database search revealed a 99.4% homology with human fibronectin gene.

Conclusion: Fibronectin plays an important role in cell attachment due to its high affinity to the cell surface. Inhibition of fibronectin expression on mRNA level may be one of the molecular mechanisms involved in carcinogenesis. The absence of this adhesion molecule on the surface of the tumor cells may give an explanation for the phenomenon of missing contact-inhibition which is characteristic for cancer cells.

838

POSTER

Cyclin-D1-expression of oral squamous carcinoma in comparison to precancerous lesions and normal oral mucosa

R. Dammer¹, H. Niederdelmann¹, E.M. Wurm¹, F. Hofstädter², R. Knüchel². ¹Dep. Maxillofacial Surgery; ²Institute of Pathology, University Regensburg, Germany

Purpose: Cyclin D1 (CD1) is one of the important molecules in G1 restriction point control of the cell cycle. In a number of tumors, and especially preneoplastic lesions, amplification of the related gene or increased protein expression have been found. The aim of the presented study was the quantification and assessment of distribution pattern of CD1 in these tissues.

Methods: 127 biopsies from 70 patients were stained with a three-step immunoperoxidase protocol using the anti-CD1-clone DCS-6 (DAKO). Quantification was carried out with a true colour image analysis system (CBA-8000, Leitz), data were gathered in Excel 5.0 and consequently analysed with SPSS ($\alpha \leq 0.008$).

Results: Significant differences were found between tumors grade 1 and grade 2 with high average values for CD1 in comparison to tumors grade 3 with mostly low or negative values for CD1. Further, no significant differences were found between normal lesions, leukoplakias and dysplastic lesions with mostly low values for CD1, and a distribution pattern of positive cells mostly confined to the suprabasal layer in the epithelium.

Conclusion: In oral squamous lesions CD1 seems not to be involved in tumor initiation as it has been shown for breast cancer. However, it may play role in tumor progression as is indicated by high values in well and moderately differentiated tumors. Whether the negative values in low differentiated tumors are related to a negative feed back after retinoblastom gene mutation will be pursued in our studies.

839

POSTER

MIB-1 and ploidy in head & neck cancer (SCC H&N)

J. Mohr¹, G. Grabenbauer¹, H. Steininger², M. Meyer³, H. Iro⁴, R. Sauer¹. ¹Radiation Oncology; ²Pathology; ³Biostatistics; ⁴ENT-Surgery; University of Erlangen, Germany

Purpose: To determine whether the immunohistochemical expression of proliferation associated antigens (Ki-67/MIB-1) and DNA-aberration (DNA Index, ploidy) in addition to tumor volume are predictive for relapse-free survival (RFS).