

st IV were significant (I + II v IV, III v IV,  $p < 0.02$ ). FDM: st I v II v III v IV: 100% v 84% v 76% v 51% pts (Ho): I + II v III v IV: 100% v 91% v 69% pts (UICC). Both classifications show a difference ( $p < 0.01$ ) in the comparison with st IV (I v IV, II v IV, III v IV). For Ho, a difference st I v III ( $p < 0.03$ ) was also found. The "N" category is the main factor which influences FDM in both classifications: N 0 v 1 v 2 v 3: 100% v 84% v 68% v 51% pts (Ho); 100% vs 84% vs 73% vs 53% pts (UICC). All comparisons between N categories were significant ( $p < 0.01$ ) in Ho's classification, while N1 v N2 was not significant for UICC.

**Conclusions:** Ho's classification represents a useful complementary tool to UICC classification for NPC, because: 1) Ho's classification is more accurate in describing differences in S and DFS between st I, II v III, 2) N categories, as defined by Ho, demonstrate the prognostic role of the involved node level in the occurrence of distant metastases. 3) Distribution among different stages is better balanced for Ho classification.

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POSTER

### Comparative estimation of local control in radiotherapy supraglottic and glottic cancer

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**Purpose:** Comparative estimation of radiocurability in both groups of cancers localised in upper and medium level of larynx.

**Material and Methods:** From 1985 to end 1989 544 patients with cancer of larynx were treated with primary radiotherapy. There were 388 patients with squamous cell supraglottic cancer and 156 patients with glottic cancer. The total dose was in range of 59–80 Gy.

**Results:** The 5-year local control in supraglottic cancer was 74% and 82% for glottic cancer. TCD for 50% probability, of local control (TCD<sub>50</sub>) for supraglottic cancer were: 61.5 Gy (T<sub>1+2</sub>), 66.5 Gy (T<sub>3</sub>) and 69.5 Gy (T<sub>4</sub>). There were lower TCD<sub>50</sub> values for glottic cancer: 55.5 Gy (T<sub>1+2</sub>), 63 Gy (T<sub>3</sub>).

**Conclusion:** Higher radiocurability signs early glottic cancer T<sub>1+2</sub> (TCD<sub>50</sub> = 55.5 Gy) comparatively to supraglottic cancer T<sub>1+2</sub> (TCD<sub>50</sub> = 61.5 Gy). The same 50% probability of local control for T<sub>3</sub> glottic cancers is connected with Total Dose higher than in T<sub>1+2</sub> of 7.5 Gy and for supraglottic cancer higher of 5.0 Gy. For the same 50% probability of local control supraglottic cancer T<sub>1+2</sub> it is necessary to support Total Dose by about 6.0 Gy more than in glottic cancer T<sub>1+2</sub> and in T<sub>3</sub> supraglottic cancer by about 5.0 Gy more than in glottic T<sub>3</sub> cancer.

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POSTER

### Is there any use in accelerated and hyperfractionated radiotherapy in locally advanced head and neck cancer?

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**Purpose:** In order to overcome accelerated tumor repopulation during radiotherapy a progressively accelerated hyperfractionated regimen was assessed for locally advanced head and neck cancer with initial poor prognostic factors.

**Method:** The treatment started with small field tumor volume with a conventional fractionation of 20 Gy in 10 fractions. This was followed by large fields by 1.66 Gy twice daily of 49.8 Gy for a total dose of 69.8 Gy. 104 patients with advanced head and neck cancer were treated. The oropharynx and larynx were the main localisations. The majority had stage III and IV tumors.

**Results:** After irradiation, a local control was obtained in 78/104 (75%) patients. Ten patients were salvaged with surgery after radiotherapy. During the observation period, 8 additional patients had a local relapse, thus the overall longterm control was 65%. Only 4 patients did not finish treatment because of severe acute toxicity.

**Conclusions:** The treatment schedule gives promising results. Shortening of treatment time certainly has its advantages. In discussing the results more emphasis will be given to a detailed analysis of early and late complications.

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POSTER

### Differential expression of mRNA in squamous cell carcinoma of the head and neck

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**Purpose:** Nowadays carcinogenesis is considered a multistage process involving many genetic alterations. Differential display is a recently developed technique that allows the detection of differentially expressed mRNA from different sources. The identification of differentially expressed genes in malignant cells may further elucidate the process of tumorigenesis.

**Methods:** RNA from oropharyngeal and laryngeal keratinocytes, and squamous cell carcinoma cells of the larynx and the hypopharynx was extracted and reverse transcribed. PCR was carried out with 26 arbitrary decamer primers and cDNA was separated electrophoretically. Differentially expressed bands were cloned and sequenced and a genebank search was carried out.

**Results:** Currently 7 differentially expressed DNA fragments in the squamous cell carcinoma cells were identified, cloned and sequenced. Four of these differentially expressed fragments did not show any homology with known human, animal, bacterial or viral gene sequences. The remaining three fragments did show a homology of up to 98% with known but not further characterized human gene sequences.

**Conclusions:** These differentially expressed genes or gene fragments may represent formerly unknown oncogenes and may help to better understand the multistep procedure of carcinogenesis in head and neck cancer.

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POSTER

### Sarcomas of the nasal cavity and paranasal sinuses

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**Purpose:** To analyse our experiences in treating nasal and paranasal sarcomas in adults, and to identify patterns of failure and prognostic factors.

**Methods:** 38 patients with Stage M0 disease treated by radiotherapy with or without surgery between 1960 and 1992 were analysed. Median follow up time was 71 months (range: 4–319 months). Local advanced tumors dominated: T1: 1, T2: 0, T3: 10, T4: 27 patients. Regional lymph node involvement was observed in 4 patients. Surgical excision was possible in 23 cases, but complete resection with negative surgical margins was achieved in only 6 cases.

**Results:** The calculated 5- and 10- year locoregional control-, cause specific survival- and disease free survival rates were 50%, 57%, 45%, and 50%, 48%, 45%, respectively. In case of combined therapy (surgery and radiotherapy) 5- and 10- year disease free survival rates were 69% and 51%, respectively. All patients with negative margins are under local control, 4 of them for over 13 years. In contrast we found poor results for patients with high-grade lesions and infiltration of the sinus sphenoidalis with 5- and 10- year locoregional control rates of 38%, 25% and 26%, 26%, respectively.

**Conclusion:** A combined treatment (surgery and radiotherapy), especially with radical surgical resection, should be the treatment of choice, because it offers the best chance for cure.

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POSTER

### Changes in tumor oxygenation in split course radiochemotherapy (RCTH)

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**Purpose:** The importance of oxygen as a modifying factor in radiation therapy was already described by Gray in 1961, but clinical data are still rare. Our study presents clinical data about the oxygenation of tumors during RCTH (70 Gy, 5-FU, Mitomycin) and the influence of the oxygenation on the response of tumors.

**Methods:** Oxygen partial pressure (pO<sub>2</sub>) was measured in 32 patients with advanced carcinoma of head and neck using a pO<sub>2</sub>-histograph (Eppendorf, Germany). The clinical tumor response was quantified by measuring the tumor volume using ultrasonography. The time points of measurements were before RCTH, after first course of RCTH, after a two-week break of RCTH and at the end of RCTH.