irradiance 100 mW/cm2, wavelength=652 nm). Response was determined after 12 weeks. Follow-up for 2-;5 years is on-going.

Results: 85% of patients achieved CR (95% CI: 76-90%) through application of PDT alone, and a further 6% of patients who initially had a partial response achieved a CR with other adjunctive therapy, giving a total CR rate for PDT alone and PDT with adjunctive therapy of 91%. The majority of CRs (59%) were biopsy-confirmed (26 patients with clinical CR did not undergo biopsy). Mean duration of response was 621 days; one and two-year CR rates were 89% and 86% respectively, survival rates were 90% and 81% respectively. Censored mean patient survival time was at least 650 days (follow-up continues). The most common adverse event was local pain at treatment site. Mild to moderate photosensitivity reactions occurred in 13% of patients. Twelve patients died during the first year (none considered related to Foscan PDT). There were 23 non-fatal serious adverse events, of which 5 were considered related to treatment: two burns, one photosensitivity reaction, one excessive tissue necrosis, one increase in pain and dysphagia.

Conclusion: Foscan PDT is an effective treatment for small primary tumours of the oral cavity, yielding CR rates comparable to those published for surgery or radiotherapy. It is without major toxicity, preserves form and function and does not compromise future treatment options for recurrent, residual or second primary disease.

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"High" (60 mCi) vs. "low" (30 mCi) activities of 131I as adjuvant treatment for papillary thyroid cancer: the results of a prospective randomized trial

M. Gawkowska-Suwinska[1], M. Turska[2], J. Roskosz[2], D. Handkiewicz-Junak[2], B. Tuleja[2], Z. Wygoda[2], Z. Puch[2], B. Jarzab[2]. *[1] Center of Oncology, Radiation Oncology, Gliwice, Poland; [2] Center of Oncology, Nuclear Medicine, Gliwice, Poland*

Purpose: To compare the effectiveness of 30 mCi vs. 60 mCi for ablation of thyroid remnants in papillary thyroid cancer (PTC) treated with total thyroidectomy.

Matherial/Methods: Since 1998 188 patients with PTC in a clinical stage T1-T3N0M0 have been randomly assigned to receive "high" or "low" ablative dose of 131I: 95 (50,5%) received 60 mCi, and 93 (49,5%) received 30 mCi. Post-therapeutic whole body scintygraphy (WBS), the uptake over the neck (UON), and serum thyreoglobin level (Tg) was obtained 6-12 months after ablation. Other routine imagining procedures included ultrasonography of the neck, and chest X-ray. Ablation has been considered as: very good if there was no uptake in WBS, and UON <0.09%, and Tg ≤ 4 ng/ml; good - if there was only scattered uptake over the neck on WBS, and UON =0.1-0,39%, or Tg =4.1-10 ng/ml.; doubtful - if there was residual uptake over the neck, and UON =0.4-0,9%, or Tg =10.1-30 ng/ml.; insufficient - if there was a distinct uptake over the neck, or UON => 1%, or Tg <100 ng/ml.; local recurrence or dissemination of disease - if WBS and/or other imagining procedures revealed a recurrent tumor or metastases, or Tg ≥100 ng/ml.

Results: In a group of patients who received 60 mCi ablation was considered very good in 82 (44%) patients, good in 12 (6%), there were no doubtful or insufficient results, and one (0.5%) early nodal recurrence. In a 30 mCi group ablation was considered very good in 62 (33%) patients, good in 21 (11%), doubtful in 9 (5%), insufficient in one (0.5%), and there were no local recurrences or dissemination. This difference is highly significant (p< 0,005) in favour of 60 mCi, as shown by non-parametrical distribution tests.

Conclusion: The results show a significantly higher effectiveness of 60 mCi for ablation of thyroid remnants in PTC treated with total thyroidectomy. Although long-term effectiveness of adjuvant radioiodine therapy has not been assessed in this study it can be postulated that "low"activities of 131I should not be routinely used, particularly for patients with high risk of locoregional relapse and/or distant dissemination.

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Locally advanced laryngeal cancer: surgery and radiotherapy vs. radiotherapy alone. A multivariate locoregional control analysis in 2220 patients

R. Suwinski, K. Skladowski, J. Wydmanski, A. Sowa, T. Rutkowski, B. Maciejewski. *Center of Oncology, Radiation Oncology, Gliwice, Poland*

Purpose: To compare locoregional tumors control rate (TCP) of laryngeal cancer after radiotherapy alone (RTA) or after postoperative radiotherapy (PRT).

Material/methods: For the purpose of the analysis the data on RTA (1493 patients) and PRT (727 patients) were combined. A logistic analysis of the dose-response relationship, and multivariate Cox proportional hazard regression model of recurrence-free survival has been used. The presence of surgery has been considered as one of the variables included in the analysis.

Results: The presence of surgery, T, N stage, Hb concentration at the end of radiation course, total radiation dose and overall radiation treatment time (OTT) have significantly influenced the recurrence-free survival. It is predicted from the logistic model, that for a tumor in a clinical stage T3N0 to achieve the same cure rate as PRT, RTA would require an increase in total dose of as much as 32 Gy given in 2 Gy fractions (TCD50% 36 Gy vs. 68 Gy). It is, however, predicted that an increment in radiation dose of only 12 Gy, with simultaneous shortening of OTT by 14 days and increase in Hb of 1.5 g% may, in the same case, provide an isoeffect of dose escalation alone.

Conclusion: A large difference between TCD50% for PRT and RTA may indicate that surgery and PRT will so-far remain a treatment of choice for a considerable proportion of patients with advanced head and neck tumors. The acceptable cure rates in organ-sparing therapy may likely be achieved by enhancing dose intensity of local treatment with concurrent increase (or prevention of decrease) of Hb concentration during radiotherapy.

Cell biology/Genetics I

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Growth patterns of pulmonary metastases of renal cell carcinoma and colorectal adenocarcinoma are distinct in angiogenesis

P. Sardari Nia[1], J.M. Hendriks[1], P.B. Vermeulen[2], G. Friedel[3], E. Van Marck[2], P. Van Schil[1]. *[1] University Hospital of Antwerp, Thoracic and Vascular Surgery, Edegem, Belgium; [2] University Hospital of Antwerp, Pathology, Edegem, Belgium; [3] Klinik Schillerhoehe, Thoracic Surgery, Gerlingen, Germany*

Objective: Metastatic disease needs angiogenesis to grow, but other vascularisation patterns which are not based on endothelial cell proliferation are described. The hypothesis of this study was that lung metastases (LM), present in a highly vascularised organ with a reduced hypoxic drive for angiogenesis, can demonstrate distinct growth patterns.

Methods: Tissue sections of 59 LM were analysed (13 pts with renal cell carcinoma (RCC) and 6 with colorectal carcinoma (CA). A hematoxylin-eosin and reticulin stain of all LM was done to evaluate growth patterns. Immunohistochemical staining with CD34 antibodies was done to count new formed blood vessels. Microvessel density across the LM was assessed.

Results: 2 growth patterns were found. A nodular growth pattern (NG) did not respect the lung parenchyma architecture, in contrast with the alveolar growth pattern (AG) in which tumor cells filled the alveoli. In each patient, all LM expressed the same growth pattern. The AG was present in 38% and 100% of the patients with RCC and CA respectively (p=0.07). The ratio of the microvessel density of the marginal zone over the central zone was at least 2 in 56% of the LM with an AG compared to 9% with a NG (p=0.02). The number of CD34-positive single endothelial cells was higher in NG than AG, indicating more angiogenesis in NG.

Conclusion: By co-opting existing alveolar wall capillaries, the alveolar growth pattern of pulmonary carcinoma metastases is less angiogenesis-dependent than the nodular growth pattern. Clinical implications are important since several angiogenesis-inhibitors are tested as anticancer agents, and lung metastases with a low angiogenesis intensity will probably not benefit from such treatment.

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Effects of adriamycin and interferon, applied in metronomic doses, on tumor volume, metastases and vessel density in murine renal cell carcinoma

N. Esser[2], S. Eisele[1], J. Fakler[1], M. Medinger[1], C. Laus[1], D. Marmé[2], C. Unger[1], J. Drevs[1]. *[1] Tumor Biology Center, Medical Oncology, Freiburg, Germany; [2] Tumor Biology Center, Molecular Oncology, Freiburg, Germany*

Introduction: Chemotherapy is effecting tumor cells as well as endothelial cells. The application of low dose continuous (metronomic) chemotherapy may optimize the effect on the tumor endothelial cells, acting like an unspecific antiangiogenic regimen. Therefore, we evaluated clinically relevant