5546 POSTER

Microsurgical reconstruction of orofacial region in the treatment of malignant tumors

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Background: Purposes – functional and social rehabilitation improvement of patients after eradication of locally invasive oral cavity malignant tumors.
Materials and Methods: Method of orthotopical microsurgical reconstruction of orofacial zone tissues is used after eradication of malignant tumors using morphofunctionally homogeneous autotissues. 234 patients got the treatment. 101 (43%) patients had primary tumors, 110 (46.2%) – recurrent, 23 (9.8%) – postsurgical defects. 179 (76.8%) patients had epithelial tumors including symbol T4 – 58.1%. Resection of scull base was made in 32 (14%) cases. For reactivation of natural feeding and correction of 147 (63%) orofacial defects, 32 (14%) cranioorofacial defects, 50 (21%) oroorbitofacial defects, 5 (2%) isolated mandible defects 266 autotransplants were used. Immediate reconstruction was in 74% of cases, deferred repair – in 26%.
Visceral – 36 gastroepiploic and 42 coloepiploic flaps were used to correct the defects of mouth floor tissues, oropharynx and cheek; 92 rib-musculocutaneous – to correct oroorbitofacial and orofacial defects, 5 fibular flap – to correct isolated mandible defects, 10 iliac autotransplants was used to correct total hard palate defects, 49 musculocutaneous and 27 fasciocutaneous radial flaps to correct small oral cavity, cheeks, lips defects; 5 osteocutaneous radial for alveolar bone repair. 2 and more autotransplants were used for reconstruction in 14 cases.
Results: Postoperative complications – 58 (25%) of patients. Mortality – in 2.8% of cases. Total flap necrosis as a result of microvascular anastomosis thrombosis – 12 (5.2%) patients. Plasty was successfully complete in 98.4% of cases. Natural feeding was reactivated in 88.6% of patients. 93.2% of patients were satisfied with the cosmetic result and 31.85% returned to labour.
Conclusions: The research showed advisability of the method of orthotopical repair of oral cavity tissues with morphofunctionally homogeneous autotissues and microsurgical autotransplantation that helps to solve main issues of major combine oral cavity defects anaplerosis of oncological patients and reach a good functional result.

5547 POSTER

Postoperative concurrent chemo-radiotherapy with a modified cisplatin schedule in high-risk squamous-cell carcinoma of the head and neck (HNSCC)

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Background: Postoperative concurrent chemo-radiotherapy has become a standard of care in high risk HNSCC patients. The administration of cisplatin with RTOG schedule (100 mg/m^2 q 21 for three cycles) concomitant to standard radiotherapy (60 to 66 Gy) showed to improve the local and regional control and disease free survival compared to radiotherapy alone in two phase III trials. However a substantial increase of G3 and G4 mucosal, gastrointestinal and hematologic toxicity has been observed and toxic deaths occurred. This pattern of toxicity superimposes to select patients challenged to these aggressive treatments.
Material and Methods: the present phase II study aimed to evaluate the feasibility and outcome of a modified cisplatin schedule (30 mg/m^2 weekly, for 7−8 weeks) concurrent to standard radiotherapy (60−66 Gy with 1.8 daily fractions) as postoperative treatment in high risk HNSCC.
Results: Between January 2004 and December 2006 31 patients undergone to surgery for HNSCC with N2-N3 disease, extracapsular node spread, microscopic involved margin of resection with a PS ECOG 0−1 were enrolled; enrolment is still ongoing and this is a preliminary evaluation of toxicity and outcome. Among 24 evaluable patients compliance to treatment was high and 86% of patients completed the planned chemotherapy. Acute toxicity was low; we observed 33% of G3-G4 mucositis and 14% of G3-G4 neutropenia. Nausea and vomiting were <10%. Prevalent late toxicity were xerostomia (4%) and dysphagia (17%).
At this preliminary evaluation of results the median follow up is 4 months and median survival and median time to progression have not been reached yet. 19 patients are still alive and 16 patients are disease free. We observed seven loco-regional relapse and one distance (lung) relapse.
Conclusion: Weekly cisplatin administration concurrent to standard radiotherapy as adjuvant treatment in HNSCC with high recurrence risk is well tolerated and feasible possibly even in patients unfit for a standard dose cisplatin chemotherapy. A longer follow up is needed in order to evaluate overall survival and progression free survival.

5548 POSTER

Circulating hormone levels and prognosis in head and neck cancer

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Background: Head and neck squamous cell cancer (SCCHN) is characterized by rapid progression and poor prognosis. The most reliable prognostic factors are tumor (T) and node (N) stage. There is some evidence that circulating hormone levels might predict prognosis in SCCHN. The aim of this study was to assess hormone levels in 289 male patients and evaluate them in association with the clinical parameters.
Methods: Age, primary tumor site, tumor stage, histologic grade, and serum levels of estradiol (E2), progesterone (PROG), testosterone (TE), dehydroepiandrosterone (DHEA), dehydroepiandrosterone sulfate (DHAS), steroid hormone binding globulin (SHBG), follicle-stimulating hormone (FSH), luteinizing hormone (LH) and prolactin (PROL) of 289 patients operated for cancer of the oral cavity, oro-, and hypopharynx and the larynx in one cancer center were recorded. The median follow-up was 37 months (19−71).
Results: Age <46 y vs.older ($p = 0.0055$), stage I-II vs.III ($p = 0.014$), and stage III vs.IV ($p = 0.0004$), N0 vs. N+ stage ($p < 0.0001$) and Gr. I-II vs. Gr. III histology grade ($p = 0.03$) were of prognostic improtance. Of the hormones studied, lower than normal levels of TE ($p = 0.02$), TE/SHBG ($p = 0.0031$) and DHAS ($p = 0.04$), as well as high levels of FSH ($p = 0.022$), LH ($p = 0.0083$) and PROL ($p = 0.0043$) predicted poor prognosis.
In multivariate analysis of all cases, T stage, N stage and grade proved to be independent prognostic factors, PROL level had borderline significance ($p = 0.07$). In the N0 stage subgroup PROL ($p = 0.0013$), and in the N+ stage subgroup histology grade ($p = 0.0004$) and TE ($p = 0.0053$) emerged as independent prognostic factors by multivariate analysis.
Conclusion: Our results suggest that abnormal levels of some circulating hormones in head and neck cancer predict worse survival, therefore hormonal imbalance cannot be excluded to have a role in the course and/or development of SCCHN.

5549 POSTER

Anaemia during radical chemo radiation for head and neck cancer: cost analysis of treatment

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Background: A study was performed to review the incidence of significant anaemia (haemoglobin < 12g/dL) and perform a cost comparison of erythropoietin (EPO) versus blood transfusion for treatment of anaemia, in the head and neck cancer patients treated with radical chemo-radiotherapy.
Methods: Patients treated between 2001–2005 for Squamous cell carcinoma of the Head and Neck region formed the basis of this study. Haemoglobin (Hb) concentrations were documented prior to and during each cycle of neo-adjuvant chemotherapy, and during radiotherapy. Patients received blood transfusions to correct anaemia (Hb < 12 g/dl). The total number of units transfused and their cost was calculated. Assuming that the patients received erythropoietin instead of blood transfusion (once the haemoglobin level fell below 13 g/dL for males and 12 g/dL for females), the difference between the cost of blood transfusion and EPO was estimated.
Results: 169 patients were identified. The incidence of anaemia was 39% (grade I: 35%, grade II: 4%) during neo-adjuvant chemotherapy. During concurrent chemo-radiation the incidence was 81% (grade I: 73%, grade II: 8%). 74 patients required blood transfusion. 14 (8%) patients required transfusion during or immediately after neo-adjuvant chemotherapy, with 35 units of blood used. 67 (40%) patients had haemoglobin levels below 12 g/dL and required a blood transfusion during radiotherapy, with 208 units being transfused.
A total of 243 units of blood were transfused, with an estimated cost of £35,175. If EPO had been used the total cost would have been £176,400 (costed at 10,000 U three times a week). Therefore the excess cost of using EPO is estimated at £141,225 over the period of the study.

Conclusions: Neo-adjuvant chemotherapy followed by radical chemo-radiation does not result in significant anaemia (no grade III toxicity). Blood transfusion is more cost effective than EPO in keeping the haemoglobin concentrations above the optimum level (>12 g/dL) during radical chemo-radiation for head and neck cancer. In addition this avoids the concerns about EPO activity as a growth factor for Head and Neck cancer cells (Henke et al 2003).

5550 POSTER

Clinical values of PET-CT compared to conventional radiologic imaging in head & neck cancer

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Background and Objectives: In head & neck cancer, the conventional CT and MRI are useful methods in imaging the anatomical structures of cancer, but they have limits in estimating sensitivity and specificity of cervical lymph node metastasis. To overcome these limitation, PET-CT, an imaging technique using metabolism emitting from cancer tissues, was introduced. The purpose of our study is to evaluate the clinical values of PET-CT by comparing with conventional CT/MRI, to finding preoerative cervical metastatic cervical lymph nodes.
Materials and Method: Seventy patients diagnosed as head and neck cancer (laryngeal, oral cavity, oropharynx) in Inha Hospital from 2004 to 2005 were enroled in this study. A retrospective analysis was done by medical record review. Every patients had preoperative CT/MRI and simultanous PET-CT for staging evaluation. every patients underwent primary tumor resection and neck dissection. Postoperative cervical lymph node pathologic results were compared with preoperative PET-CT and CT/MRI findings.
Results: In our study, no statistical differences of sensitivity, specificity and predictability of cervical lymph node metastasis could be found between CT/MRI and PET-CT imaging in head and neck cancer.
Conclusion: In our study, PET-CT had no meaningful differences from the conventional imaging methods to find metastatic cervical lymph nodes, but further studies are needed.

5551 POSTER

Impact of Cisplatin potentiation by Cytarabine in the 5-FU-CDDP regimen for dismal-prognosis head and neck cancer (HNC) patients; a meta-analysis of 3 local trials involving 492 patients

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Further to our randomized study demonstrating response and survival benefit for Cytarabine (CAR) 1,000 mg/m^2 potentiating Cisplatin (CDDP) in the standard 5-FU-CDDP regimen (Eur J Cancer 2002) in dismal-prognosis HNC patients (unresectable T4 N2c-3 or relapsing or metastatic) two further studies were done. One compared potentiation with CAR 500 mg/m^2 versus 1,000 mg/m^2; the other compared the CAR 500 mg/m^2 with 5-FU administered as bolus versus continuous infusion (RR and OS were identical in both studies). The present report is a meta-analysis of the 3 trials with response and survival as main issues. The three studies included a total of 482 patients. Cohort 1 received the standard 5-FU–CDDP regimen (83 pts), Cohort 2 CAR-1,000–5-FU–CDDP (153 pts) and Cohort 3 CAR-500–5-FU–CDDP (246 patients). All three regimens were applied both in palliative and neoadjuvant setting, the neoadjuvant preceding radiotherapy with 70 Gy. RR and PD rates were assessed on evaluable patient basis and survival on intent-to treat basis. Statistical analysis included the chi-square test, the log-rank test, determination of the death hazard radio and Cox regression analysis. Significance was assessed by the t-test with Bonferroni correction.
The RRs were significantly higher in CAR-potentiated Cohorts (Cohort 1 44%, Cohort 2 62%, Cohort 3 66%, $p = 0.0031$) and PD rates in the standard 5-FU–CDDP Cohort (Cohort 1 43%, Cohort 2 21%, Cohort 3 15%, $p < 0.001$). The median survival in Cohort 1 was 7 months and, in Cohorts 2 and 3, 11 months. The one- and two-year survivals were, for Cohort 1 26% and 6%, for Cohort 2 42% and 14%, and for Cohort 3 44% and 24%. The difference in survival with the log rank test was highly in the favor of both CAR-potentiated Cohorts ($p < 0.0001$) with the power of over 90% for $p = 0.01$. Cox regression analysis showed that both performance status, primary tumor localization and treatment schedule were significant predictors of survival. The highest impact on survival had the administration of the CAR-potentiated regimens, with death hazard ratios of 0.58 and 0.53 (CI respectively 0.44–077 and 0.40–070) as compared to standard 5-FU–CDDP regimen. Results in the neoadjuvant setting closely paralleled those in the whole patients group.
Potentiation of CDDP by CAR improves both RR and survival in dismal-prognosis HNC patients. The choice of the neoadjuvant regimen prior irradiation is crucial in judging its benefit impact in otherwise dismal-prognosis HNC patients.

5552 POSTER

Benzydamine for prophylaxis of radiation induced oral mucositis in head and neck cancers, double-blind clinical trial

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Background: Oral mucositis is one of the most common adverse effects of radiotherapy in head and neck tumors. We determined the efficacy of oral rinse benzydamine in prevention of radiation induced mucositis.
Material and Methods: Patients with head and neck cancers, who were referred to Cancer Institute, Imam Hospital in 2005, were enrolled in a randomized, placebo-controlled clinical trail to receive either benzydamine or placebo. All the cases received at least 50 Gy radiation to the oral cavity and oropharyngeal areas. The end points were comparison of highest grade of mucositis at the end of radiotherapy, frequency of grade 2 or more, the interval days to establishing grade 2 in the groups.
Results: 100 patients with head and neck cancers were randomized in this trail. At the end of the study, 19 patients were excluded of the analysis due to minor side effects of drug, or stopping the radiotherapy. In 39 cases in the treated group, the frequency of mucositis grade 3 or more was 43.6% (17 cases) in contrast to 78.6% (33 cases) in 42 cases in the placebo group, which was significant ($p = 0.001$). Mucositis grade 3 or more was 2.6 times frequent in placebo group (CI = 95%, relative risk = 1.38−5).
At the end of RT, at least 42% of the treated group had mucositis grade 3 or more in contrast to at least 76% in the control group which was statistically significant. Intensity of mucositis was increased up to fourth week of treatment in both groups to grade 2. In the treated group the grade of mucositis was approximately constant to the end of therapy; but in the control group it rose to grade 3 ($p < 0.001$). The highest grade of mucositis during the treatment time was significantly different between two groups ($p = 0.049$).
The median interval days of establishing grade 2 mucositis was 3.6 days sooner in the placebo group ($p = 0.12$).
Conclusions: According to these results it seems that oral rinse benzydamine was effective, safe, and well tolerated for prophylactic treatment of radiation-induced oral mucositis in head and neck tumors.

5553 POSTER

Second radical irradiation in head and neck cancer patients – retrospective study

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Background: Head and neck cancer patients who require reirradiation have poor prognosis because of limited possibilities of treatment, not only in recurrent cancer, but also in second primary tumors. Repetition of radiotherapy may provide better local tumor control, also when combined with surgery and chemotherapy.
Materials and Methods: 47 patients were included in this retrospective research. Average age was 61.9 (±9.1). 10 female and 37 male patients were treated in MSC Memorial Oncology Centre in Gliwice between 1981 and 2006 because of primary tumor in head and neck region with curative intent. 35 patients underwent surgery, 5 patients were treated with concomitant chemotherapy. First irradiations were planned in 2D (22 patients), 3D (23) or IMRT (2) techniques with average dose to PTV 60.87 Gy (±9.01 Gy) and average dose per fraction 1.96 Gy (±0.21 Gy). 28 patients had local and 13 nodal recurrences, 6 patients had second primary tumor. 32 patients underwent surgery prior to second radical radiotherapy. Six patients were dedicated to concomitant chemotherapy. Interval between first and second irradiation was 11 to 296 months. Either 3DRT (34 pts) or IMRT (12 pts) plans were prepared, one patient was treated with 2D technique. Average dose to PTV was 58.2 Gy (± 6.9 Gy) with average dose per fraction 1.84 Gy (± 0.2 Gy). Acute side effects were evaluated according to Diche score. All patients were followed up during and after treatment.
Results: Median follow up was 12 months (1–121 months). One patient finished reirradiation on lower dose due to acute side effects. Acute toxicity was in the range 3 to 14 with a median 7 points. 15 recurrences (5 nodal and 10 local) and 7 distant metastases were observed. Long-term side effects were noticed in 33 patients. 18 patients suffered from xerostomy on moderate level, 15 patients from chronic pain in previously irradiated regions and 11 patients from dysphagia. 2-years recurrence free survival was 28% and 2-years overall survival was 39%.