

FLT volumes delineated on PET scans before treatment ( $R^2=0.7$  and  $0.8$  respectively) No correlation was found for CT and FMISO volumes. Strong correlation was found between volumes of FDG and FLT before treatment ( $R^2=0.9$ ). Both FLT and FMISO volumes decreased during treatment. Significant differences were found for FLT volumes before treatment and at the first time point ( $p=0.02$ ) and for FMISO volumes ( $p=0.04$ ).

**Conclusions:** Assessment of molecular characteristics of head and neck tumours and their changes during treatment may prove a useful tool to be a useful tool for treatment individualisation in advanced head and neck cancer.

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POSTER

#### Lessons From Culture and Antibiotic Susceptibility of Oral Cancer Flora and its Impact on Perioperative Antibiotics and Post-operative Wound Infections

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**Introduction:** Peri-operative antibiotic therapy in oral cancer patients has been a subject matter of lot of research and a consensus is yet to be reached. Aim of the study was to study the primary flora of oral cancer and their antibiotic susceptibility.

**Methods:** Fifty-nine patients were included in the study. Tumour tissue sample was taken in the operation theatre subjected to aerobic culture and susceptibility after induction of anaesthesia but before cleaning, draping and antibiotic injection. Standard peri-operative antibiotics were then given.

**Results:** Seventy bacteria were isolated from 56 patients. Two patients had sterile culture. One patient had contaminants grown. Thirty nine of seventy (55.7%) bacteria isolated were Gram negative. Most common bacteria were community acquired *Pseudomonas*, *Klebsiella* and *E. coli*. Only 33 (47.1%) bacteria were sensitive to recommended antibiotic prophylaxis of Amoxicillin & Clavulanic acid and Metronidazole while 66 (94.3%) were sensitive to extended antibiotic coverage of Amoxicillin & Clavulanic acid, Amikacin and Metronidazole used at our center. Among Gram-negative bacteria corresponding rates were 9/39 (23%) and 37/39 (94.9%). The corresponding rates for Gram-positive bacteria were 25/31 (80.6%) and 29/31 (93.5%).

**Conclusion:** A large number of oral cancer patients have their tumours colonized at the time of surgery by Gram-negative bacteria. Extended antibiotic coverage with the addition of an aminoglycoside can cover these bacteria and lead to decreased wound infections.

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POSTER

#### Dietary Risk Factors of Nasopharyngeal Carcinoma – a Case Control Study of Moroccan Population

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**Background:** The incidence of nasopharyngeal carcinoma (NPC) is relatively high in Maghreb countries. This cancer is a model of multifactorial oncogenesis, but the role of food as risk factor in etiopathogenesis of this tumour is not negligible. The aim of this study is to identify the association between risk of NPC and some dietary factors in Morocco.

**Methods:** It is a case-control study including all new cases of NPC (49 cases) hospitalized in the National Institute of Oncology in Rabat between December 2009 and May 2010. Frequency consumption of foods was compared between cases and controls matched for age, sex and residence district (place of residence). A high frequency consumption of a food was defined as consumption once or more by a week. Some traditional foods in Moroccan cooking like Harissa (hot red pepper), Qadid (mutton dried and salted), Khlii (dried meat, salted, spiced cooked and preserved in a mixture of oil and rendered beef fat) and Smen (rancid butter) were analyzed in this study. A conditional logistic regression was used to identify the association between dietary factors and the risk of NPC.

**Results:** Cases were more likely to have high frequency consumption of Harissa (Odds ratio (OR): 4.05; 95% Confidence Interval (CI): 1.32–12.4), Smen (OR: 4.81; 95% CI: 1.55–14.92) and Black pepper (OR: 3.53; 95% CI: 1.16–10.71), and less frequency consumption of fruits and vegetables (OR: 0.24; 95% CI: 0.08–0.76). There was no significant association between the risk of NPC and the frequency consumption of Qadid, khlii and cooking with olive oil.

**Conclusions:** Some of these risk factors (Harissa, Black pepper) weren't found in 3 North African studies. This study indicates the involvement of dietary factors, and thus the lifestyle in the development of NPC and

the need of biochemical analysis of food specimens to search for the carcinogenic agents.

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POSTER

#### Head and Neck Mucosal Malignant Melanoma Expressing C-kit Might Benefit From New Treatment Option

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**Background:** Mucosal malignant melanoma (MMM) of the head and neck is rare, constituting less than 1% of all malignant melanomas. There is no clear gender predisposition. Most patients are elderly, median age in studies is between 56–65 years. The prognosis is poor; 5-year survival is between 15–40% according to available literature. New treatment is badly needed to improve patient outcome.

**Purpose:** To investigate the expression of c-kit, Ki-67, overall survival and local control rate for patients with head and neck malignant mucosal melanoma in the Uppsala region, Sweden, 1998–2010.

**Material and Methods:** Retrospective analyses of the patient files were performed. Seventeen patients were found, fifteen with primary MMM, two with recurrences (with earlier diagnoses) between 1998 and 2010. The immunohistochemistry was performed with 3 µm sections from the operation material and stained with hematoxylin-eosin for c-kit and Ki-67.

**Results:** All 17 patients had stage III or IV disease. All had primary surgery, four in combination with postoperative radiotherapy. At recurrences all had surgery and 6 patients had radiotherapy as well.

Both 5- and 10-year overall survival was 39%. All patients achieved local control after 3 months, 8 after 1 year and one after 2 years. Nine recurred in median time 9.3 months from treatment cessation, one after 15 months and one after 18.5 years. Nine patients recurred locally and two both locally and with distant metastases.

Fifteen patients expressed c-kit, seven strongly, five intermediately and three weakly. Two were c-kit negative. Thirteen expressed Ki-67  $\geq 30\%$ .

**Conclusion:** This study confirms the poor prognosis for patients with MMM and the low local control rate in this group, regardless of the treatment combination of surgery and radiotherapy. A clear majority of patients in this study express c-kit and have high proliferation in the tumours and metastases as indicated by the Ki-67 rates. Therefore, targeted therapy aimed at the c-kit might present a new treatment option for this group of patients.

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POSTER

#### Current TNM Staging System in Oral Cancer is Faulty: It Needs Amendment

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**Introduction:** TNM staging system is the universally accepted system for cancer staging including oral cancer. The basic purpose of staging is to predict prognosis and help in planning the treatment. However, the current TNM system in oral cancer do not truly reflect the burden of disease and so the prognosis & treatment strategy. It over and under stage the T disease and do not give importance to number of involved lymph nodes as in breast or colon cancer. Lymph nodes are most important predictor of survival in oral cancer. We have analyzed our data and presenting the potential deficit and problems of current TNM system.

**Methods:** It is a retrospective analysis of prospective cancer database of our department from 1<sup>st</sup> August 2006 to 31<sup>st</sup> December 2010.

**Results:** Total 523 patients underwent surgery in this period. The M:F was 2.2:1. The age range from 13 to 89 yrs with mean of 49.8 and median of 50 yrs. The most common sites were buccal, alveolo-buccal and tongue. More than 2/3<sup>rd</sup> cancer were locally advanced (stage III-IV) by current TNM staging system. With median follow up of 18 months, patients with 4 or more nodes involvement have >80% recurrence rate whereas 1–3 LNs involvement have 28% relapse rate. Patients with ENS showed 38% relapse rate. Involvement of both skin and bone (not staged in conjunction) associated with 37% recurrence rate in comparison to involvement of isolated bone or skin involvement (T4) is associated with around 20% relapse rate. Patients with T4 stage without nodal disease have very low relapse rate (10.7%).

**Conclusion:** Involvement of 4 or more node, extra nodal spread and combined involvement of skin and bone are poor prognostic factors in oral cancer. They are not placed anywhere in oral cancer TNM staging system. There is need to revise the TNM by including these 3 important factors.

There is also need to make some new guidelines for adjuvant treatment in presence of these adverse factors for better outcome in oral cancer patients.

#### 8602 POSTER Guideline Adherence in Older and Younger Patients With Head and Neck Cancer

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**Background:** Determining whether non-standard treatment of patients is an adequate adjustment to the patient's comorbidity, overall physical condition and wishes, requires examination of the motivation behind treatment choices made. Therefore, the object of this study was to map out current treatment practice in our centre and examine factors associated with non-adherence to treatment guidelines.

**Methods and Materials:** Retrospective analysis of 606 patients (median age 65.3 years) newly diagnosed with a squamous cell carcinoma of the oral cavity, lip, larynx, hypopharynx or oropharynx treated at Medical Centre Alkmaar between 1997 and 2009. Treatment was compared to guideline recommendations. Multivariate analyses were performed to determine factors associated with non-adherence and outcome.

**Results:** 91% of patients were treated in accordance with guidelines; adherence was 88% for surgery, 91% for radiotherapy and 92% for chemotherapy. Increasing age, stage and comorbidity were associated with decreasing guideline adherence. Primary reasons for non-adherence were comorbidity and lack of cooperation in younger patients, and patient's refusal for older patients. At one, two and five years, higher age, more advanced stage of disease and the presence of recurrent disease were associated with mortality. The association of comorbidity with mortality decreased over time; it was an independent predictor of one year mortality only. Of note, after correction for age, stage and comorbidity, treatment that was discordant with guidelines was associated with poorer outcome at all endpoints (hazard ratio 5.26 at one year, 4.21 at two years and 3.90 at five years).

**Conclusion:** Discordance with treatment guidelines was less than 10% at our centre, was associated with age, stage and comorbidity and was associated with a significantly poorer outcome. However, legitimate reasons exist for not following guidelines and treatment decisions should always be adapted to the individual patient's situation and preferences.

#### 8603 POSTER Intra-arterial Fluorescence Diagnostics of Oral Cancer

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**Background:** Early detection of oral cancer improves the results of treatment. Fluorescence diagnostics (FD) helps to identify the real margins of malignant tumour. However, in some cases the artefactual fluorescence of healthy mucous appears. The aim of this study was to investigate the possibilities of intra-arterial fluorescence diagnostics (I/a FD) of oral cancer as more sensitive, effective and more specific method of FD.

**Material and Methods:** The total of the 20 patients with malignant recurrent oral cancer underwent I/a FD. A catheter was inserted selectively into the feeding artery of the tumour via the superficial temporal artery. Photofrin (10 mg) was injected via catheter directly into the tumour. 1 and 4 h. after injection the mucosal tissues of hypopharyngeal and oropharyngeal regions were illuminated with  $\lambda = 405$  nm violet light. Spectroscopic investigations of malignant and healthy tissues were performed too. There were 73 patients with malignant recurrent oral cancer who underwent systemic fluorescence diagnostics too. There was the control group, which consist of 60 patients for whom sensitized tumour therapy was provided for the treatment of different malignant not head and neck tumours. The fluorescence diagnostics measurements and spectroscopic investigations of malignant and healthy tissues were performed for these 73 and 60 patients too. Photosensitizer was injected i.v. (2.5 mg/kg) and after 24–48 h the mucosal tissues of oropharyngeal regions were illuminated with  $\lambda = 405$  nm violet light.

**Results:** The specific pink fluorescence of malignant tissue was noticed providing the illumination of tumour with violet light. Margins of fluorescence usually coincided with the ones of malignant tumour. In doubt cases, the biopsy and morphological examination of tissue was provided. All malignant tumours, except melanoma showed a specific pink fluorescence

when illuminated with violet light, and no fluorescence was noticed in normal mucosa. However, in some cases glow artefacts were observed. We established these "glow artefacts" – a non specific lilac fluorescence in a healthy mucous in 9 of 73 patients with head and neck cancer and in 14 of 60 control group patients. Usually the artefactual fluorescence was noticed in the gums – 18 cases and in a basis of tongue – 14 cases. The experienced investigator usually can differentiate pink fluorescence of tumour from lilac artefactual fluorescence, but there is a possibility for diagnostic miss. There was only 1 case of artefactual fluorescence in 20 patients who underwent I/a FD.

**Conclusions:** Fluorescence diagnostics is useful for early detection of primary and recurrent malignant oral tumours except melanoma. However, the artefactual fluorescence in the gums or in the basis of tongue can appeared. I/a FD lets avoid these artefactual fluorescence.

#### 8604 POSTER Nasopharyngeal Carcinoma in the West of Algeria – Long-term Outcomes and Prognostic Factors

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**Background:** The objective of this study was to discuss the clinical feature, long-term outcome and determine the prognostic factors of nasopharyngeal carcinoma (NPC) in the west of Algeria.

**Patients and Methods:** Retrospectively analyzed patients with NPC (n = 200) who were underwent at our department between 2002–2005. Survival rates were estimated using the Kaplan–Meier method. Univariate and multivariate analyses were performed using the Log rank test and Cox proportional hazards regression models respectively.

**Results:** There were 136 males (68%) and 64 females (32%). The mean age was 39.9 ± 1.1 years (Range 12–73). The most common mode of presentation was with a neck lump (78.5%). Stage II, III and IV (UICC2002) were 10%, 31% and 59% respectively. It was undifferentiated carcinoma in 92% of cases, WHO type1 in 6% and WHO type2 in 2%. 91 (45.5%) patients received induction chemotherapy platinum-based (with docetaxel, 5 fluorouracil or epirubicin) followed by radiotherapy (CT/RT) and 109 (54.5%) concomitant chemo-radiotherapy (CCRT). After a median follow-up of 71 months (range 10–106), 81 patients (40.5%) developed recurrences (locoregional and/or distant metastasis). 8-years locoregional control (LRC), disease free survival (DFS) and overall survival (OS) rates were: 82.7% (±2.8%), 58.8% (±3.5%) and 77% (±3.5%), respectively. In univariate analysis, age >40 years (p = 0.02), T3–4 (p = 0.02) and stage IV (p = 0.07) showed poor prognosis for LRC; stage IV (p = 0.02) for DFS; age >40 years (p = 0.08), stage IV (p = 0.01) and CT/RT (p = 0.0001) for OS respectively. In a multivariate analysis, independent prognostic factors were: age (>40 years vs ≤40 years) [p = 0.04 – HR 2.244] and Tumour (T3–4 vs T1–2) [p = 0.08 – HR 2.324] for LRC; Stage (IV vs II/III) for DFS [p = 0.05 – HR 1.628], Treatment (CT/RT vs CCRT) for OS [p = 0.001 – HR 3.392].

**Conclusion:** This retrospective analyses shows that the NPC in the Algerian west is diagnosed at advanced stage with acceptable long term outcome. Another therapeutic sequence associated to the concurrent chemoradiotherapy seems necessary for the advanced stages of the disease (T3–4, stage IV) and the patients aged >40 years to improve the LRC, DFS and OS.

#### 8605 POSTER Symptom, Psychological Distress and Quality of Life in Newly Diagnosed Oral Cavity Cancer Patients – the First 12 Months Experiences

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**Background:** The diagnosis of oral cancer and potential treatments/disease related dysfunction from the oral–facial areas may cause impacts on patients' quality of life (QOL). The purposes of this study were to (1) explore the changes of symptoms, psychological distress (depression and anxiety) and QOL during the first 12 months of being diagnosed as oral cavity cancer, and (2) identify factors related to QOL in newly diagnosed oral cavity cancer patients in Taiwan.

**Materials and Methods:** A 12-month prospective longitudinal study was conducted to examine the changes of symptom severity, psychological distress and QOL. Subjects were recruited from three medical centers in Northern Taiwan and were assessed on 6 time points (days before operation, and 10 days, 1, 3, 6, 12 months post surgery/ T1–T6, respectively). The psychometrically validated Chinese version instruments were used for assessments, including (1) Symptom Severity Scale (SSS),