

patients receiving bisphosphonate therapy, we performed a retrospective chart review.

Methods: The records of all patients with breast cancer (BC), multiple myeloma (MM) and prostate cancer (PC) who were treated in the Dental Service of Memorial Sloan-Kettering Cancer Center (MSKCC) between January 1, 1996 and January 31, 2006 and who previously received intravenous bisphosphonate therapy (IVBP) at MSKCC prior to their first dental visit were reviewed. The ONJ (exposed bone in the maxilla or mandible) status of the patients at the time of the first dental visit (FDV) was assessed. The patients were divided into two cohorts: ONJ (+) and ONJ (-). ONJ (+) represented patients with ONJ at FDV and ONJ (-) represented patients without ONJ at FDV. Collected data from the two cohorts included: demographic information; duration of IVBP at FDV; comorbid diseases; anti-neoplastic therapy; corticosteroid history; anti-angiogenic therapy; and presence of dental disease. The two cohorts were compared using Fisher-Exact or Wilcoxon Rank Sum tests.

Results: Of the 310 patients who fit the study criteria, 28 patients were diagnosed with ONJ at or before their FDV, yielding an estimated incidence of ONJ at 9%. Of those in the ONJ (+) cohort median age of 62.5 years (age range: 26-91), 18 had BC (64%), 6 had MM (21.4%) and 4 had PC (14.3%). The table demonstrates the factors significantly associated with development of ONJ.

ONJ status	Duration of IVBP (median, months)	Exposure to Zoledronic acid (%)
ONJ(+)	34.5	85.7%
ONJ (-)	18.3	40.8%
	P = 0.02	P < 0.001

Discussion: The type and duration of IVBP seem to be the most significant risk factors for ONJ development. Additional analysis is ongoing.

Keywords: osteonecrosis of the jaw, bisphosphonate therapy

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097 Oral Mucositis grades and candida species in head and neck irradiated patients

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Objective: The purpose of this study was to evaluate mucositis grades changes in patients before, during and after irradiation therapy in oral, head and neck region in connection with isolation of fungi from oral mucosal swabs.

During one year period, we examined 25 patients with oral, hand and neck cancer operated and irradiated (22 males – 88%, 3 females – 12%) aged from 47-84, (average age 63) with ionizing radiation delivered by external source. The dosage of irradiation was 6000 cGy in 30 separated doses, 200 cGy each

(max. dosage 7000 cGy in 35 separated doses, or min. 4880 in 26 separated doses). Patients were examined on three occasions: prior the irradiation, during the second week of irradiation and three weeks after the irradiation. The examination included establishing grade of mucositis (0-5), as well as taking swabs for mycological analysis.

Results: The mucositis grades changes during second week of irradiation comparing to those before irradiation and those three weeks after the irradiation were statistically significant ($p=0.012$; $p=0.010$), while there were no statistically significant changes in mucositis grades before and after irradiation ($p=0.547$). Candida isolation in quantity was equal before, during and after the irradiation with statistical significance, but with differences in quality during the irradiation.

Conclusion: Statistically significant increase of mucositis grades in patients during the second week of irradiation is not connected with higher number of candida isolate in the same patients, but may be connected with candida species in that isolate.

Keywords: oral, mucositis, candida, species

098 Smoking: a modifier for inflammation-oral cancer association

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Introduction: Substantial evidence links chronic inflammation to carcinogenesis. The aim of this study was to assess the interaction between periodontitis and smoking status for the risk of oral cancer.

Methods: Case-control study design was used. Study population was derived from patients admitted to the Department of Dentistry and Maxillofacial Prosthetics at Roswell Park Cancer Institute (RPCI) between June 15, 1999 and November 17, 2005. All patients newly diagnosed with primary squamous cell carcinoma of the tongue were included as cases ($N=94$) and all patients seen during the same time period but not diagnosed with cancer were included as controls ($N=153$). Immunocompromised and those with prior cancer or dysplasia were excluded. Cases were identified from RPCI Tumor Registry and the controls from Hospital Information System. History of periodontitis was quantified by alveolar bone loss (ABL) from panoramic radiographs taken at admission. ABL was measured in millimeters (mm) on mesial and distal sites of all teeth using a computer program by one examiner blind to cancer status and was defined as a continuous variable. Smoking status was defined as never, former and current. Odds ratios (OR) and 95% confidence intervals (CI) were calculated from multiple logistic regression analyses including age, gender, race and number of teeth stratified by smoking status.

Results: Periodontitis history was associated with cancer risk independent of smoking status. This association was stronger in former smokers (OR=11.52, 95% CI=3.00-44.36) compared to current (OR=3.21, 95% CI=1.71-6.02) and never smokers (OR=3.78, 95% CI=1.76-8.14).

Discussion: These results suggest that smoking status may modify the association between chronic inflammation and oral cancer. These results need to be confirmed by other studies with quantitative assessment of smoking.

Keywords: oral cancer, periodontitis, inflammation, smoking, epidemiology.