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Does Cetuximab Reduce the Risk of Anemia in Patients Undergoing Radiation Therapy for Head and Neck Cancers?

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chemoradiotherapy, while 32% had primary surgery. 30% were current tobacco users and 70% had ever used tobacco (mean = 43.33 PY). 15% of patients reported marijuana use at time of initial diagnosis and 34% reported a history of marijuana use. Older patients and males were more likely to be currently using marijuana (p=.005 & p=.04, respectively). Current marijuana users were more likely to require narcotic pain medications and require a greater number of types of pain medications during treatment (p=0.002 and p=0.007, respectively). There were no differences between current and historical/never users on self-reported worst pain, weight loss or enteral feeding tube use during treatment, or objective measures of treatment toxicity. Additionally, there were no other significant differences between current or historical/never users were found on cancer variables or primary treatment type.

Conclusion: Marijuana use in patients with HNSCCa is common and little is known about patient and oncological outcomes. There were no significant differences between current and past marijuana users and non-users on clinicopathological variables, adherence, or oncologic outcomes. Marijuana use in HNC may result in more difficulty managing pain during treatment. Further research is needed to better understand marijuana use during cancer treatment, particularly frequency and method of use (i.e., smoking vs. edibles/oils), outcomes, and quality of life.

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Health Insurance Literacy in Head and Neck Cancer Patients

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Purpose/Objective(s): Cancer is the second most costly medical condition in the U.S., putting many patients at risk for financial hardship. Cancer patients spend more on healthcare, have greater productivity losses, and are more likely to declare bankruptcy than people without cancer. Financial hardship has devastating consequences for cancer patients including lower quality of life, treatment delay or discontinuation, and increased mortality. Understanding what types of services are covered and how to select an insurance plan may be beneficial for cancer patients and help reduce financial hardship. The purpose of this study was to assess health insurance literacy in patients with head and neck cancer.

Materials/Methods: Newly diagnosed Head and Neck Cancer Patients were prospectively recruited prior to starting their treatment. Health Insurance Literacy Measure (HILM) scale was administered to patients at the time of enrollment. HIL comprises of 4 different sections — choosing insurance plan, comparing insurance plan, understanding insurance plan, and using insurance plan. The scale is rated from 1 (not at all confident) to 4 (very confident).

Results: A total of 42 patients completed HILM questionnaire. When patients were asked about their ability to: choose an insurance plan — 40.08% (26.19% — 66.67%) responded as not confident or slightly confident; compare insurance plans — 31.75% (26.19% - 38.10%) responded as not confident or slightly confident; understand insurance plans — 47.14% (40.48% - 50.0%) responded as not confident or slightly confident; and use their insurance plan — 40.47% (33.33% - 57.14%) responded as not

confident or slightly confident. From each category, top question which patients did not feel confident or slightly confident included: "You know where to go for help if you were having trouble affording health insurance outside of an employer?" (choosing insurance plan); "Understand what you would have to pay for specialist visits?" (comparing insurance plans); You know how to find out what is and is not covered before you receive a health care service? (understanding insurance plans); and "Look into what your health plan will and will not cover before you get health care services?" (using insurance plans).

Conclusion: A significant portion of patients demonstrate limited understanding in their ability in choosing, comparing, understanding, and using their insurance plans. Educating patients and their caregivers to improve their health insurance literacy may help patients with their financial toxicity and alleviate anxiety associated with financial distress.

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Does Cetuximab Reduce the Risk of Anemia in Patients Undergoing Radiation Therapy for Head and Neck Cancers?

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Purpose/Objective(s): Epidermal growth factor receptor (EGFR) activation is associated with increased production of interleukin 6 (IL6), which is intensified by radiotherapy (RT) induced inflammatory response. Elevated IL6 levels promote RT-induced anemia by upregulating hepcidin causing functional iron deficiency. Cetuximab, an EGFR inhibitor, resulted in significantly lower rates of RT induced anemia for locally advanced head and neck squamous cell carcinoma (HNSCC) patients receiving definitive RT vs RT-alone according to Bonner et al; and other studies compared to concomitant chemotherapy. However, little is known for cases receiving cetuximab with RT in the adjuvant setting.

Materials/Methods: We queried our institutional HNSCC database for surgically staged non-metastatic cases that received adjuvant RT with or without concomitant cetuximab between 2006-2018. Cetuximab was administered for some high-risk cases medically unfit for platinum agents per multidisciplinary team evaluation. All included patients need to have at least one complete blood count pre- and post-RT end. We compared RT-cetuximab vs RT-alone for prevalence of baseline and post-RT anemia, defined as Hb below 12g/dL in females and 13g/dL in males, and mean hemoglobin (Hb) levels. We also assessed the improvement in Hb level post-RT (resolution of baseline anemia or Hb increase of at least 1g/dL above baseline), in addition to overall survival (OS) in relation to anemia/Hb dynamics.

Results: We were able to identify 66 patients who fit our inclusion criteria, of which 27 (41%) received RT-cetuximab, with the remaining receiving RT-alone (n=39, 59%). Median age was 62.5 years (range, 34-88 years), males 80%, black 29%, and 85% had a smoking history. The majority of cases (73%) were locally advanced. Oral cavity and oropharynx were the most common subsites (37.5% each), with HPV+ve cases representing 52% of the later. The study groups were well-balanced, except for higher rates of positive final surgical margins, and extracapsular space invasion and median RT dose (*p<0.05*). Baseline anemia was diagnosed in 70.4% in RT-cetuximab vs 76.9% in the RT-alone, p=0.76; with similar mean Hb level (11.7g/dL in both). Meanwhile, baseline iron, vitamin-B12 and folate deficiencies, and chronic kidney disease were non-different. After completion

of RT, mean Hb was significantly higher in the RT-alone (12.9±1.4 g/dL) compared to RT-Cetuximab (11.9±2.1 g/dL), p=0.02. Nevertheless, higher anemia levels (70% vs 51%) and lower improvement of Hb post-RT (81.5% vs 92.3%) were both non-significant for RT-cetuximab vs RT-alone respectively, p>0.05 for both. On multivariate analysis, baseline anemia was associated with worse OS (p=0.0052), unlike improvement of Hb post-RT (p=0.14) with a corresponding better improvement of Hb (56.4% vs. 25.9%, p=0.014), albeit lower anemia levels (70% vs. 51%), was not significant (p=0.195). On multivariate analysis, lack of baseline anemia was associated with better OS (p=0.0052), whereas improvement of Hb post-RT was only marginal (p=0.068).

Conclusion: In a homogenous cohort of HNSCC patients treated postoperatively, concomitant cetuximab was not associated with lower RT-induced anemia, in contrast to previous studies.

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Predictive Value of Health-Related Quality of Life on Radiotherapy Related Toxicities in Patients with Head and Neck Cancer

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Purpose/Objective(s): aims to assess the association between baseline HRQOL and occurrence of major toxicities in patients with head and neck cancer (HNC).

Materials/Methods: The present study analyzed data from randomized study investigating the utility of HRQoL assessment. Patients with HNC treated by radiotherapy were included from May 2009 to September 2014 in 4 centers in France. At baseline and during follow-up patients were completed QLQ-C30 questionnaire. According to NCI-CTCAE classification, we defined major toxicities as adverse events of grade ≥3 including skin, digestive, general, hematological head/neck toxicities and death related to an adverse event. Cox proportional-hazards regression analyses were performed in two step to assess association between baseline HRQoL score and major toxicities. Firstly Manual backward selection was performed to determine clinical and sociodemographic factors associated with major toxicities with a p-value <0.05 by multivariable analysis. Secondly each baseline HRQOL dimension selected in univariable have been adjusted on variables included in multivariable model based on clinical and sociodemographic data to determine predictive value of HRQOL on major toxicities and value of p <0.05 was considered as statistically significant. The HRQOL scores were included as continuous variables and hazard ratios were calculated for each increase of 10 points in HRQOL.

Results: Out of 200 patients included, the median age was 59.6 years, 79.5% had comorbidities, 55.6% received adjuvant chemotherapy and 90.4% underwent surgery. At baseline, global health status mean score was 67.03 (SD=19.28), the best functioning score was physical functioning (FP) with means of 87.92 (24.35) and the worst symptom score was insomnia with mean score of 31.67 (32.06). The median follow-up was 24 months (range 1.91 to 28.5 months). During follow up, 41 patients (20.5%) developed at least one major toxicity. In multivariable analyses, for each significant HRQoL scales adjusted on model based on clinical and sociodemographic data (age, Center with at least 30 patients included, cancer site, cancer stage, chemotherapy and surgery), a 10-point increase score in the FP (HR: 0.76, 95% CI [0.62 to 0.94], p=0.009), role functioning (HR: 0.87, 95% CI [0.77 to 0.98], p=0.032) and social functioning (HR: 0.88, 95% CI [0.77 to 0.99], p=0.047) were associated with a lower risk of occurrence of major toxicities, while a 10-point increase score in dyspnea (HR: 1.15, 95% CI [1.03 to 1.30], p=0.014), and loss of appetite (HR: 1.16, 95% CI [1.03 to 1.32], p=0.013) were associated with an increased risk of occurrence of major toxicities

Conclusion: Some baseline HRQoL scores were predictive factors of major toxicities and HRQOL should be assessed before treatment to identify patients at risk to develop radiotherapy related toxicities in patients with HNC.

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Impact of a Head and Neck Cancer Chemoradiation (HNC CRT) Nurse Practitioner (NP) on Patient Outcomes

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Purpose/Objective(s): In addition to chemotherapy toxicities, most HNC patients receiving CRT experience moderate to severe radiation-induced pharyngitis. Management includes escalating analgesics, dietary modification, supplemental hydration, and feeding tubes for nutritional support as needed. Uncontrolled symptoms can interrupt or truncate curative intent treatment, impacting both quality of life and cancer outcomes. In 2014, a fulltime NP role dedicated to symptom management during and immediately post-CRT was initiated at our center. We assessed the impact on patient Emergency Department (ER) visits, hospitalizations and deaths.

Materials/Methods: Patients receiving definitive primary CRT with curative intent were identified during 12 month periods prior to (April 2012-March 2013) and three years after (April 2017-March 2018) initiation of the NP from records of H&N MDT case conferences. We hypothesized that ER visits and hospitalizations would be reduced with NP care. Effects on treatment delivery were secondary outcomes. Patient demographic, tumor, treatment, ER visit, hospital admission, and mortality data were extracted retrospectively from the electronic medical record. Unadjusted comparisons were done using the chi-square test for categorical variables and t-test for continuous variables with p<0.05 considered of significance. This project was approved by the institutional REB.

Results: 105 and 120 patients were identified in the pre-NP and post-NP cohorts, respectively. Post-NP patients were younger (mean age 63.2 vs 67.3 years), more often had oropharyngeal cancer (81.5% vs 56.2%), did not receive weekly carboplatin (0.0% vs 8.6%), and received cisplatin scheduled q3weekly less often (45.0% vs 71.4%) and weekly more often (48.3% vs 16.2%). Patients received a mean of 3.6 visits and 4.3 phone calls with the NP. There was no difference in ER visits within 42 days of treatment between cohorts (55.2% vs 55.8%). However, hospital admissions were reduced (60.0% vs 45.8%, p=0.034). Length of stay was similar, and there was no difference in 90-day mortality (2.9% vs 2.5%).

Conclusion: This before-and-after study showed a 23.7% reduction in hospitalizations after introduction of the NP role, consistent with the findings of others (Terzo 2017). Over 50% of patients visited the ER at least once