HEADLINE:
Increase in Cetuximab-induced skin rash and hypomagnesemia in patients receiving concomitant treatment with Proton-Pump Inhibitors (PPIs): A possible drug interaction?

BACKGROUND:
Proton pump inhibitors (PPIs) may interact with several orally administered drugs, by possibly raising gastric pH levels, leading to altered dissolution and absorption. In a previous study, we found that co-administration of PPIs with cetuximab was associated with increased skin toxicity. To further confirm this preliminary observation, we tested retrospectively whether co-administration of PPIs with cetuximab is associated with an increased skin toxicity. Furthermore, since both these drugs can induce hypomagnesemia, the possibility of synergism between these drugs in causing hypomagnesemia was also tested.

MATERIALS AND METHODS:
The files of patients with metastatic colorectal carcinoma (mCRC) or head and neck (H&N) carcinoma treated at our center with cetuximab as a single agent or in combination with chemotherapy or radiotherapy were surveyed. All eligible patients treated with cetuximab during 2015 were included in the study. Concomitant use of PPIs was defined if a drug belonging to that class was included in the chronic medications list of the patient.

RESULTS:
Seventy-five patients (41 with H&N carcinoma and 34 with mCRC) included in the study. Median follow up from the onset of cetuximab was 10.4 months [0.8-60.2]. Thirty-seven patients took PPIs concomitantly with cetuximab. Skin toxicity of any grade was reported in 20/37 (54.1%) patients taking PPIs compared with 13/38 (34.2%) patients not treated with PPIs (p=0.33). Grade 3-4 skin toxicity was reported in 11/37 (29.7%) patients taking PPIs compared with only one out of 38 patients (2.6%) not treated with PPIs (p=0.017). Median time to detection of severe skin toxicity was 0.9 months [0.2-11.0]. Hypomagnesemia (Mg serum level below 1.3 mg/dL) was reported in 11/36 (30.6%) PPIs treated patients compared with 5/29 (17.2%) patients not taking PPIs as chronic medication (p=0.41). Median time to the detection of hypomagnesemia was 2.8 months [0.4-52.8]. Grade 3-4 skin toxicity or hypomagnesemia were reported in 15/37 (40.5%) patients with concomitant treatment with PPIs compared with 1 out of the other 38 (2.6%) patients (p=0.01).

CONCLUSIONS:
Both the rate and the severity of cetuximab-induced skin toxicity and hypomagnesemia were increased by chronic concomitant administration of PPIs. A prospective study is needed to confirm such possible interaction between cetuximab and PPIs.
ABSTRACT PRESENTER:
Mrs Orit Arsenault

LIST OF CONTRIBUTORS:
Aron Popovtzer MD  aronpopovtzer@yahoo.com  Dimitri Bragilovski  dimitribr@clalit.org.il

CURRENT SUBMISSION:
New Submission

PLEASE MARK THE RELEVANT FIELDS THAT APPLY FOR YOUR ABSTRACT::
RADIOTHERAPY, Head and neck

HEADLINE:
Comparison between 3 different techniques for Larynx treatment planning

BACKGROUND:
Conventional parallel-opposed radiotherapy (PORT) is the considered the standard technique for early-stage glottic carcinoma. However it has been suggested that the implementation of more modern methods such as intensity-modulated radiotherapy (IMRT) and volumetric-modulated arc therapy (VMAT) may allow the sparing of organs at risk (OAR) including the carotid artery, thyroid gland, submandibular gland, and the remaining functional larynx. Others suggest that the field is small and in contrast may have a negative effect on the spinal cord dosage. In this study we sought to evaluate this dilemma.

MATERIALS AND METHODS:
Ten patients with early stage glottic cancer(T1,T2) were evaluated. All were planned in 3 methods, PORT, IMRT & VMAT. In all cases the coverages was planned to 95% coverage of the 95% of the PTV. All plans were planned by Varian's Eclipse treatment planning system, 6MV for Truebeam with HD-MLC.

RESULTS:
The Dose volume histogram (DVH) of all OAR was calculated and a comparison of the mean dosage was performed. We compared the conformity of treatment and average expected treatment time. Results: The mean dose of the carotid artery was 20x for the VMAT & for IMRT and 40 for the PORT. The conformity was superior in the VMAT. The treatment time was shortest for PORT and longest for IMRT.

CONCLUSIONS:
In this study we demonstrated the potential advantage in the implementation of modern treatment planning for early stage glottic carcinoma, including improvement in the DVH of OARS as well as improvement of the conformity. However, long-term clinical data are lacking, and there still exists a significant chance of geographical miss due to setup error or swallowing motion. Therefore further clinical studies are necessary before reaching final conclusions.
ABSTRACT PRESENTER:
Adham Hijab

LIST OF CONTRIBUTORS:
S. Billan, I. Turgeman

CURRENT SUBMISSION:
New Submission

PLEASE MARK THE RELEVANT FIELDS THAT APPLY FOR YOUR ABSTRACT::
Head and neck

HEADLINE:
Negative predictive value (NPV) of post-treatment FDG PET-CT (PET-CT) scan in nasopharyngeal carcinoma (NPC).

BACKGROUND:
Accurate assessment of response to treatment in NPC is important for early administration of salvage therapy and to avoid futile invasive diagnostic investigations. This study assesses the value of the NPV of the post-therapy FDG-PET/CT scan throughout a prolonged follow-up period.

MATERIALS AND METHODS:
A cohort of 46 NPC patients who had an initial post treatment negative PET-CT scan was identified. A scan was considered negative if no non-physiological uptake was seen. Follow-up data was retrospectively analyzed. Median follow-up was 44.1 months.

RESULTS:
6/46 patients (13%) had disease recurrence (NPV 87%); mean time of recurrence was 20.6 months (calculated from the day of obtaining baseline post-treatment PET-CT scan) ranging from 7 to 37.5 months. Mean age at diagnosis of patients who had recurrence was 65.17 years, compared to 44.65 years who were disease free. Three patients developed local recurrence, one loco-regional, and the other two had a recurrent metastatic disease. Based on COX regression analysis, Patients older than 65 years had a significant risk for disease recurrence (Hazard ratio [HR] 10.67, 95% confidence interval [CI] 1.95 to 58.4, P.value= 0.006) compared to younger patients. The NPV of patients under 65 was 94% compared to 50% for patients older than 65. 4 out of 6 patients who had relapse had T4 disease, and the remaining two had T3. There were no recurrences in the group of T1-2 (NPV 100%). The NPV values were calculated based on events that have occurred during a 36 months period. Patients were categorized into subgroups based on age at diagnosis and T stage. Patients under the age of 65 with T3-4 had a higher rate of 3-year disease free survival compared to patients older than 65 with the same T stage (86.5% vs. 40%, HR 7.06, 95% CI 1.29 to 38.74, P.value= 0.024). Other univariate analysis, based on N-stage, radiotherapy technique, and induction chemotherapy were not statistically significant for prediction of disease recurrence.

CONCLUSIONS:
The NPV of PET-CT scan is high in NPC patients younger than 65 years and with T1-2 disease. Larger studies are warranted to validate our findings.
ABSTRACT PRESENTER:
Aron Popovtzer

LIST OF CONTRIBUTORS:
Inbal Hazkani, Itzhak Haviv, Irit Ben-Aharon, Leon Lubimov, Dimitri Bragilovski, Menachem Motiei, Rachela Popovtzer, Aron Popovtzer

CURRENT SUBMISSION:
New Submission

PLEASE MARK THE RELEVANT FIELDS THAT APPLY FOR YOUR ABSTRACT::
TRANSLATIONAL RESEARCH, RADIOTHERAPY, Head and neck

HEADLINE:
The impact of molecular profiling guided targeted gold nanoparticles on radiosensitivity of metastatic salivary gland Adenoid Cystic Carcinoma

BACKGROUND:
Molecular Profiling has an established role in selection of treatment for metastatic disease, however its role in improving radiosensitivity and improving functional imaging has not been evaluated. The main goal of this study was to evaluate the role of molecular profiling as a method to target gold nanoparticles (GNP) in order to enhance radiosensitivity. A second goal was to evaluate the role of molecular profiling as a tool to improve our functional imaging abilities. We have chosen a metastatic Adenoid Cystic Carcinoma (ACC) tumor as a model.

MATERIALS AND METHODS:
16 nude mice were implanted with human parotid ACC found to have an Anaplastic Lymphoma Kinase (ALK) receptor mutation. The mice were treated with radiation, Crizotinib, GNP and radiation, and GNP conjugated to Crizotinib with radiation, and followed for four weeks.

RESULTS:
We demonstrated that ALK targeted GNP enhanced the radiation effect and had a significant impact on tumor growth (P

CONCLUSIONS:
Molecular profiling for targeting GNP can serve as a method to enhance radiosensitivity and improve imaging in salivary gland ACC