setting remains still controversial, despite the large consensus as a promising candidate to become a biomarker that could further improve application and efficacy of radiation therapy (RT) in head and neck squamous cell carcinoma (HNSCC). Moreover, most of the studies refer to series of patients who underwent RT alone or in combination with Cetuximab. We performed a retrospective analysis on the prognostic value of EGFR expression in HNSCC treated with surgery and postoperative RT.

Material and Methods: We analyzed 69 patients with an histological diagnosis of HNSCC who underwent adjuvant RT after surgery in our Institute from 1997 to 2003. A 3D conformal RT was delivered with a 6MV accelerator using a conventional fractionation (median 60 Gy, range 34.2-70 Gy) Median follow-up was 3.73 years (range 0.17-12.25 ys). None of these patients were treated with postoperative concomitant chemotherapy. Tumor samples used for the determination of EGFR were obtained from surgical specimens. Membrane features (intensity, extension, distribution) and percentage of EGFR expression were evaluated and a statistical analysis (univariate) was conducted to correlate these parameters with Overall Survival (OS) and Disease Free survival (DFS).

Results: EGFR was overexpressed in 45.5% of our patients (median value used as threshold). No significant correlation (p value=0.90) has been found between patients with an overexpression of EGFR and OS or DFS. Among patients with laryngeal carcinoma, those with overexpressed EGFR have overexpression of EGFR and OS or DFS. Among patients with a three-point score system could be useful to select patients with worse prognosis that might benefit from more aggressive treatments.

Conclusion: Based on our results it is still reasonable that the analysis of EGFR expression, especially referring to membrane features, might be a prognostic value for OS and DFS in locally advanced HNSCC treated with adjuvant RT. A clinical validation in prospective trials of the suggested three-point score system could be useful to select patients with worse prognosis that might benefit from more aggressive treatments.

EP-1086 Finding the right threshold for determining hypoxic subvolumes in F-MISO-PET/CTs for HNSCC
H. Kertl1, L. Majerus1, A. Bunea1, N. Wiedenmann1, M. Mix2, C. Stoykov3, M. Meyer4, A. Geros1
1University Hospital Freiburg, Department of Radiation Oncology, Freiburg, Germany
2University Hospital Freiburg, Department of Nuclear Medicine, Freiburg, Germany

Purpose or Objective: Tumor hypoxia is a common feature of locally advanced head and neck cancer (HNSCC) that is associated with higher malignancy and increased radioresistance. Tumor-to-blood ratios:1.2 are generally thought to indicate hypoxia. Nevertheless, previous studies use various thresholds to define tumor hypoxia. The following analysis tries to elucidate which threshold may be the most appropriate to determine hypoxic volume in respect to treatment success.

Material and Methods: A prospective study was performed to determine changes in tumor hypoxia during primary chemoradiation (pRCTx) of HNSCC at our institution. Tumor hypoxia was non-invasively assessed by [18F]-Fluoro-Misonidazole (F-MISO) PET/CT 2.5 h p.i. at baseline (week 0) and in week 2 and 5 of treatment, respectively. Hypoxic volumes (HV) were generated using thresholding at different levels of 1.2, 1.3, 1.4, 1.5 multiplied with the background-uptake, which was defined as SUVmean within the ipsilateral trapezium muscle, as advised by a nuclear-medicine specialist. Δ-values of decrease of HV (ΔHV) during treatment were obtained in weeks 0, 2 and 5 and correlated with local failure. As four patients showed local failure (LF), two groups of four patients each were made: four showing LF, four patients showing complete remission (CR). Before t-test analysis normal sample distribution was confirmed with Shapiro-Wilk test. Significance-level was defined as p<0.005.

Results: We analysed 4 patients without local failure in comparison to 4 patients with LF to show differences ΔHV in weeks 0 to 2, 2 to 5 and 0 to 5 of the HV. All patients primarily treated for HNSCC with dRCTx were included. Each patient received a total dose of 70Gy in 35 fractions. Concomitant cisplatin chemotherapy was administered in weeks 1, 4 and 7. The mean follow-up time was 16.9 months (range: 10-22 months). Mean time to LF was 9.5 months (range: 6-15 months). For patients in CR allΔHV (mean) show proportional decrease in weeks 0 to 5. This is true for every threshold factor from 1.2 to 1.5. In those patients showing LF ΔHV (mean) demonstrates not only a decrease in HV but also some increase at each of the time increments. There is a general decrease (p=0.0073) between week 0 and 5, while between week 0 and 2 and 2 and 5, a rise in ΔHV(mean) can be shown (p=0.2339, p=0.0649, respectively).

Conclusion: A decrease inΔHV (mean) was shown at any time point, for any factor the tumor-to-background-ratio was multiplied with, in patients with CR. In patients with LF, the hypoxic volume showed inconsistency over time, at least at one time of measurement there was an increase in hypoxic volume. The choice of the threshold for determination of hypoxic volume in FMISO-PET/CT remains a crucial question that could not be answered at this point. To elucidate this larger patient numbers are needed.

EP-1087 Screening for symptoms in HNC: Italian translation and validation of a patient-reported outcome
M. Maddalo1, M. Buglione1, L. Costa1, N. Pasinetti1, S. Tonoli2, M. Urriti1, L. Pegurri1, S. Ciccarella1, F. Foscarini1, F. Frassine1, D. Tomasini1, S.M. Magrini1
1University and Spedali Civili- Brescia - Italy, Radiation Oncology, Brescia, Italy

Conclusion: A decrease in ΔHV (mean) was shown at any time point, for any factor the tumor-to-background-ratio was multiplied with, in patients with CR. In patients with LF, the hypoxic volume showed inconsistency over time, at least at one time of measurement there was an increase in hypoxic volume. The choice of the threshold for determination of hypoxic volume in FMISO-PET/CT remains a crucial question that could not be answered at this point. To elucidate this larger patient numbers are needed.