Correlation of Oral Cavity Dose, Acute Mucositis and PEG Dependency for Head and Neck IMRT

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Purpose/ Objective:
► Radiation induced toxicities, as a consequence of normal tissue complication, have a strong correlation to delivered dose.
► Quantitative Analysis of Normal Tissue Effects in the Clinic (QUANTEC) report generated an increased knowledge of dose/volume/outcome (DVO) to normal tissue.
► Dose to the oral mucosa and its contribution to both acute mucositis and late swallowing impediment, is a DVO relationship recommended for further investigation by QUANTEC.
► A correlative study was undertaken to determine the relationship of oral cavity dose and acute mucositis as a predictor of enteral feeding dependence at two months post treatment.

Materials/Methods:
► 68 patients (n=68) with locally advanced SCC of H&N were retrospectively analysed.
► Oral Cavity Dmean, V50Gy, V45Gy, V35Gy & V25Gy were recorded.
► Weekly CTCAEv3 Mucositis (Weeks 1-7) recorded.
► At 2/12 FU, patients were divided into PEG Utilization (PY) and No PEG Utilization (PN).
► Oral Cavity dose & acute mucositis incidence was analyzed within these respective groups (PY & PN).

Results:

![Figure 1. Incidence of on-treatment acute mucositis in patients +/- PEG @ 2/12 follow up (FU)](image1)

![Figure 3. V50Gy, V45Gy, V35Gy, V25Gy & Dose Mean (Dmean) to Oral Cavity (OC) in patients +/- PEG @ 2/12 follow up (FU)](image2)

Conclusions:
► This study has demonstrated a relationship between oral mucosal dose (across multiple parameters) and PEG dependence post radiotherapy.
► The relationship between acute mucositis and PEG dependence warrants further investigation (No statistically significant difference at any treatment week).
► Continued follow-up and increased patient population may provide definitive verification of the trend in this study.
► With such follow up, there lies an opportunity to contribute to future dose/volume/outcome recommendations.