static feature, indicating potential additional information to existing features. All other dynamic features, including GLRLM, showed a high correlation with at least one static feature. Three out of 90 parametric features did not show a high correlation with corresponding static features, but showed a moderate correlation (ρ>0.61). **Conclusion:** This study suggests that, for NSCLC, certain dynamic GLCM radiomic features show additional information compared to static features. In extension to Tixier et al. (J Nucl Med 2016), equivalent features indicated no additional information in radiomics derived from parametric images; other features only gave a minimal suggestion of additional information. Future studies should assess whether there is a clinical benefit of dynamic radiomics over static radiomics. **References:** None.

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Dose distribution radiomics: a new paradigm for assessment of radioligand therapy

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Aim/Introduction: Personalized dosimetry in radioligand-therapy (RLT) is increasingly recognized as an important procedure for ensuring patient safety and improving treatment efficacy. Furthermore, radiomics has gained increasing acceptance as a powerful tool for assessment of radiological images. Here we propose a paradigm of dose-distribution radiomics towards improved assessment of RLT. It is known that radiomics features can be affected by image generation and processing methods. In this work, we applied radiomics to voxelized dose maps from RLT and investigate features' robustness when varying segmentation, discretization and dose calculation methods. **Materials and Methods:** Ten patient kidney datasets (the main organ-at-risk) from ^{177}Lu-DOTA-TATE therapy were analyzed. Three SPECT/CT scans, acquired at around 4h(D0), 23h(D1) and 70h(D3) after injection, were used for dose estimations. Four fixed-thresholds (20%-50%) were employed in kidney segmentations. Voxelized dose-maps were obtained using seven methods: (M1) from unfiltered images, and images processed with 3x3x3(M2) and 5x5x5(M3) box-filters with time-activity-curves (TACs) determined for each voxel; and (M4-M7) based on activity distributions from images on D0, D1, D3 and the mean of all images to scale the TACs obtained from the entire organs to individual voxels. In total, 280 dose-maps were used in radiomics analysis. Five discretization (bin=16/32/64/128/256) with 43 radiomics features (from histogram and GLCM, GLRLM, GLSZM, NGTDM matrices) were applied to each dose-map. Reproducibility of the radiomics features with respect to dose-map generation parameters was assessed using the intra-class correlation coefficient (ICC). **Results:** Varying dose calculation methods, among all the segmentation and discretization methods, the mean values of ICCs were >0.8 for 31/43 features; while, large variations were found in 1/13 GLRLM and 6/13 GLSZM features. When varying segmentations, features highly depended on the dose calculation methods. For M1-M3, only 5/43 features showed ICCs>0.8, but 24/43 features showed ICCs>0.8 for M4-M7. Poor ICCs were observed in all histogram, 5/9 GLCM, 4/13 GLRLM and 5/13 GLSZM features. Varying bin sizes of discretization, besides 2/3 histogram, 2/9 GLCM and 1/5 NGTDM non-robust features, ICCs for other features were >0.8 for any given segmentation and dose calculation methods. **Conclusion:** Radiomics features in dose-maps from RLT were investigated. Their robustness to segmentation highly depended on dose-map calculation methods. Features obtained from dose-maps based on organ-based TACs showed high and consistent reproducibility for most radiomics features. This analysis can serve for selection of reproducible dose-map radiomics features towards improved assessment of RLT and prediction of outcome in future efforts. **References:** None.

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Teaching Session 6 - Interactive Clinical Cases - Radiological Aspects of Abdominal Anatomy

Tuesday, October 15, 2019, 16:30 - 18:00 Lecture Hall 113

OP-671

Radiological Aspects of Abdominal Anatomy

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