CAN WE INCREASE THE ACCURACY OF PET/CT WITH A NON-CLASSICAL PARAMETER FOR LIPID-POOR ADRENAL LESIONS IN CANCER PATIENTS?

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Introduction: If adrenal lesion's unenhanced CT attenuation value is >10 HU, which is determined lipid poor, imaging methods are not successful enough for characterization. In PET/CT with lesion characterization, mostly a cutoff is determined for SUVmax or higher lesion activity compared to liver is considered as malignant. However, most of the studies have focused on all lesions, not only on lipid poor ones. Our aim is to establish a clinically useful practical parameter in the characterization of lipid poor adrenal lesions.

Materials & Methods: Images of 82 patients and 98 lesions were reviewed in cancer patients and if CT attenuation value <10 HU, these lesions excluded. The first scanning was taken before chemotherapy and second after 4-6 cycles of treatment. If adrenal lesion was disappeared after the chemotherapy scan, it accepted as malignant. If lesion's SUVmax had ≥30% decreasing or ≥20% increasing, these accepted as malignant, too. If there is no change in adrenal lesion's SUVmax between first and second scanning, third PET/CT were re-examined. If there was no significant change in both the primary tumor and adrenal lesion in all three PET/CT, they are considered as stable malignant lesion. Others accepted as benign.

Results: Sensitivity, specificity, PPV, NPV, accuracy were 64.7%, 73.0%, 76.7%, 60.0%, 68.2% respectively, when the cut-off was 2.5 for SUVmax. Sensitivity, specificity, PPV, NPV, accuracy were 43.9%, 83.9%, 83.3%, 44.8% and 58.0%, respectively, when the cut-off was 3.5. Sensitivity, specificity, PPV, NPV, accuracy were 42.1%, 87.1%, 85.7%, 45.0%, 58.0%, respectively, when the cut-off was 4.5. If SUVmax/liver SUVmean >2.0 was taken as cut-off sensitivity, specificity, PPV, NPV and accuracy were 74.5%, 89.2%, 90.5%, 71.7% and 82.7% respectively.

Conclusion: SUVmax/liver SUVmean>2.0 is a more reliable characterization parameters for adrenal lesions with >10 HU in cancer patients than SUVmax. If we use this parameter for patient management, it can be facilitating the management.

Biography

Simsek FS has completed his PhD from Eskisehir Osmangazi University School of Medicine and Postdoctoral studies from Eskisehir Osmangazi University School of Medicine. He is an Assistant Professor in Firat University School of Medicine. He has published more than 30 papers in reputed journals and has been serving as an Editorial Board Member of repute.

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