PET/CT in RT Planning for Lung Cancer

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In Radiotherapy, the use of PET/CT scans for dose planning is increasing. On the PET images, the viable tumour can be delineated as a support for the delineation performed on the corresponding CT. For lung cancer, the PET information added can discriminate tumour tissue from atelectasis often found periferal of the tumour. This discrimination is often impossible to do on CT alone meaning that the atelectasis is included in the radiation field. Also, metastatic spreading to lymph nodes can be included in the Gross Tumour Volume (GTV). Sometimes, unknown distant metastases are found resulting in change of therapy.

PET/CT for Radiotherapy planning demands that the patient is prepared for therapy planning with use of fixation equipment for correct positioning and that the personnel is educated for working with these patients, but the patient also has to be prepared for a PET/CT scan with fasting, stable blood glucose levels, a serum creatinin measurement for iv contrast, etc.

The technical issues with patient fixation devices, the tumour delineation process and the clinical impact are discussed regarding lung cancer in particular.

References:


