

AbstractID: 14588 Title: PET/CT Technology Update, Quality Assurance and Applications

In the past few years, positron emission tomography/computed tomography (PET/CT) imaging has increasingly been used for the diagnosis, staging, and restaging of malignant diseases. The success of this emerging modality has primarily been due to its ability to combine the advantages of both PET and CT imaging while minimizing their separate weaknesses. One of the main advantages of PET/CT imaging is its ability to generate functional images depicting the biodistribution of radioactive compounds that are correlated with anatomical landmarks thereby increasing the physicians' confidence in image interpretation and improving patient management.

The aim of this lecture is to provide an overview of the basic physics principles of PET/CT imaging as well as the advantages and drawbacks of using CT for attenuation correction of PET data. In addition, the lecture will cover the latest in design specifics of commercially available PET/CT scanners from different manufacturers as well as review PET/CT quality control and assurance techniques.

Educational objectives:

1. To learn the basic physics principles of PET/CT imaging
2. To understand the advantages and drawbacks of using CT for attenuation correction of PET images.
3. Become familiar with design specifics of commercially available PET/CT scanners.
4. Learn quality control and assurance techniques for PET/CT imaging