

Consideration of using HWS filter for improving PET quantitative value and the image quality

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Abstract

Background and purpose: Many different types of filters are used in PET imaging to improve the image quality by reducing the noise. HWS filter is one of those filters which remove noiselike minute dots from the image. We considered whether the PET image quality was improved or not by using HWS. **Method:** Image quality and PET counts were compared by using NEMA, IEC BODY phantom images. The visual examination was also held for clinically obtained PET images. **Results:** By using the filter, PET counts decreased slightly, but the background counts in body phantom increased slightly, and the PET image quality did not improve. In the visual examination, the images obtained with the HWS filter were slightly worsened for some artifacts were seen in the images with the filter. Comparing sinogram imaging, the noise was certainly reduced by using the HWS filter. **Conclusion:** As of now, we have yet to ascertain the effectiveness of the HWS filter to improve the PET image quality. If we use the HWS filter for clinical PET study, we need to change the image construction methods and the acquisition time.