

Summary

Visualization of Normal Organs in Whole-Body FDG-PET Imaging

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It is important to know FDG accumulation in the normal distributions for interpreting whole-body PET imaging for tumor detection. Twenty-eight normal subjects were studied with whole-body PET imaging and were examined the intensity of FDG uptake in major organs and the factors which caused its variety. Emission images were acquired and images were reconstructed without attenuation correction. The intensity of FDG uptake was classified into 4 grades visually. No accumulation was found in the thyroid, the esophagus, and the spleen. The oral cavity, the liver, the stomach, and the colon were visualized in all subjects. The laryngeal muscle, the cervical muscle, and the heart accumulated FDG with various grade from 1 to 4 grades. No association was found between the in-

tensity of uptake in the organs and volunteer's age. The fasting time was shorter in volunteers whose heart showed "high" grade than those showed less accumulation ($p < 0.05$). Serum concentration of free fatty acid was significantly lower in them, too ($p < 0.05$). Various FDG uptake was observed in many organs, especially the laryngeal muscle, the cervical muscle, and the heart. In our study, there was no factor which caused FDG uptake in organs except for the fasting time and the value of free fatty acid in the heart. Such analysis of whole-body FDG distributions in the normal subjects is valuable for tumor detection with FDG-PET.

Key words: Positron emission tomography, FDG, Tumor detection, Normal subjects.