Creation of correlative cluster images of CBF and ^{11}C-flumazenil in PET

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Abstract

In positron emission tomography (PET), accumulation of ^{11}C-flumazenil (^{11}C-FMZ) reflects benzodiazepine receptors in the central nervous system. ^{11}C-FMZ is widely used clinically, *e.g.,* in examination of patients with cerebrovascular disease (CVD), epilepsy, and degenerative diseases. In addition to ^{11}C-FMZ, cerebral blood flow (CBF) is measured using ^{15}O-labeled gas or water. There have been a number of previous studies of the relationship between CBF and ^{11}C-FMZ.

We performed cluster analysis of the correlation map of CBF and ^{11}C-FMZ images in the same patient. We were able to create images that could be used for objective evaluation of the relationship between CBF and ^{11}C-FMZ.