CLINICAL STUDIES WITH MEDICAL CYCLOTRON

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Positron emission tomography was performed with 20 volunteers and 31 patients with various disease in central nervous system. The used radiopharmaceuticals for this study were 11-CO_2 and 11-C-glucose which was prepared by photosynthesis. Cerebral activity distribution in these patients showed characteristic patterns respectively. Recently, a technique has been developed to measure regional values of cerebral radio-activity using positron emission and transmission tomography. We measured the regional distribution of glycogenic metabolites in brain by next formula.

$$Dv = \frac{Se}{Ke.\ Cg} - Sg$$

Dv= mass of glycogenic metabolites.
Se= counts of nine pixels in image.
Ke= calibration factor.
Cg= counts of 1 ml blood.
Sg= values of blood sugar per ml.

This is not satisfactory quantitative method, but it will help to give a better understanding of regional function in brain.