

## **Influence of the glucose concentration in blood on $^{18}\text{F}$ -Choline accumulation**

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### **Abstract**

Using an apparatus newly developed by NMCC for synthesis of choline, we made an investigation first time in Japan to clarify whether choline labeled with  $^{18}\text{F}$  could be used for PET test of cancer in the head and neck region. Subjects for  $^{18}\text{F}$ -Choline PET test consisted of 19 patients of oral cancer who visited our hospital (11 males and 8 females of  $69.0 \pm 12.2$  years of age). In addition, we performed  $^{18}\text{F}$ -FDG PET test to make comparison with  $^{18}\text{F}$ -Choline PET test in 19 patients of oral cancer (11 males and 8 females of  $65.8 \pm 13.3$  years of age). In  $^{18}\text{F}$ -Choline PET inspection, even if it sees by the whole tumor, there is no correlation between SUV and the blood sugar level ( $r = -0.152$ ). Correlation was not found by both by the case of  $T_2$ , either ( $r = -0.231$ ). Correlation is not found even if it sees by the whole tumor also by  $^{18}\text{F}$ -FDG PET inspection ( $r = 0.051$ ). Correlation was not found about  $T_2$  case, either ( $r = -0.115$ ). Although we considered SUV of a tumor and the relation of a fasting blood sugar level by  $^{18}\text{F}$ -Choline PET inspection this time, it was not concerned with diabetic existence, but  $^{18}\text{F}$ -Choline was satisfactorily accumulated on the tumor tissue, and the useful thing was suggested also to the oral cavity cancer patient who has diabetes as an underlying disease. However, in  $^{18}\text{F}$ -FDG PET inspection conducted this time, correlation was not accepted between SUV and the blood sugar level.