

Effect of Dexamethasone injection on ^{18}F -FDG intracellular uptake in rat ascites hepatoma AH109A and rat erythrocyte

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Abstract

This study was undertaken to compare the intracellular uptake of ^{18}F -FDG into rat ascites hepatoma cell (AH109A) and erythrocyte under the effect of dexamethasone (DEX) injection in rat. The ascites hepatoma cells (3×10^7 cells/2ml) were intraperitoneally injected to rats (Donryu, 5wk, n=28) 8 days prior to the study. ^{18}F -FDG (5MBq) was intravenously injected after the DEX (1mg/kg, ip) or saline injection. Then 30, 60, 90 min after the ^{18}F -FDG injection, peritoneal fluid and blood was taken for the evaluation of intracellular ^{18}F -FDG. There was significant accumulation of ^{18}F -FDG in AH109A which was 260 times of the extracellular ^{18}F -FDG concentration in peritoneal fluid. On the other hand, there was only 1.4 times of accumulation of ^{18}F -FDG in the rat erythrocytes. However there was no effect of *in vivo* DEX injection on ^{18}F -FDG accumulation. Therefore there was discrepancy of ^{18}F -FDG accumulation between in the ascites AH109A and its tumor nodule in relation to the effect of DEX. In this study, it was supported the idea that since there were little inflammatory cells in the ascites, this result supported the idea that the ^{18}F -FDG accumulation will be affected by DEX only if there is inflammatory process in this tumor.