

Prognostic value of FDG-PET in patients with ovarian carcinoma following surgical treatment

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Objective: To determine the prognostic value of FDG-PET after surgical resection in patients with ovarian carcinoma, we compared the results of FDG-PET and serum CA-125 level and prognosis of patients. **Methods:** Eighteen patients underwent a total of 32 FDG-PET examinations following surgery for ovarian carcinoma from October 2001 to December 2002 at our hospital (median follow-up period, 31 months). Age of the patients at the time of the initial FDG-PET examination ranged from 31 to 73 years (mean 52 years) and the period from surgery to the initial FDG-PET examination ranged from 5 to 109 months (mean 30 months). Serum CA-125 levels were determined on the occasion of each FDG-PET examination. Recurrent tumors were treated with surgery in 5 cases, radiotherapy in 2 cases, and chemotherapy in 9 cases. **Results:** The initial FDG-PET examinations revealed that 13 cases had positive and 5 cases had negative findings, which included 2 false positive cases. The survival rate for all patients at 1 year and 2 years after the initial examination was 82% and 63%, respectively. Two-year survival rates in patients with positive and negative FDG-PET findings were 51% and 83%, respectively, and the difference was not statistically significant ($p = 0.19$). Furthermore, 4 patients with normal CA-125 levels and 14 patients with elevated CA-125 levels showed 2-year survival rates of 100% and 51%, respectively, and they were not significantly different ($p = 0.11$). For all 32 examinations, the 2-year survival rates for patients with normal CA-125 levels (100%) were significantly higher ($p = 0.025$) than that for patients with elevated CA-125 levels (47%), however there was no significant difference ($p = 0.20$) between FDG-PET positive cases (53%) and negative cases (83%). **Conclusion:** The prognosis of patients with positive FDG-PET findings was less favorable than that of patients with negative findings. However, over the mean extended observation period of about 2.5 years, no significant difference in the prognosis of patients was observed between the two groups. The results of the present study indicate that elevated serum CA-125 levels may be more useful for evaluating the prognosis of ovarian cancer during the post-operative follow-up than FDG-PET findings.

Key words: ovarian carcinoma, FDG-PET, CA-125, survival