Purpose: To evaluate the sensitivity, specificity and accuracy of 18F-FDG, PET and CT were used for T and N stage for esophageal carcinoma, and explore the SUV value evaluating prognosis of esophageal carcinoma.

Methods: PET and CT scan as well as T and N stage were carried out for 29 cases of preoperative esophageal carcinoma patients, those results were analyzed and compared with postoperative pathological TNM stage.

Results: CT scan diagnosis the T stage was obviously higher than PET in term of determining T staging, while PET scan diagnosis the N stage was higher than CT, but there was no significantly difference. It was clear that only the Kappa value of preoperative PET scan in T stage was poor (Kappa value, 0.4), the Kappa values for PET scan in N stage, as well as preoperative CT scan in T and N stage were good (Kappa value, 0.4). The SUV values were increasing with the lesion volume and length of PET\textsubscript{Suv2.5} becoming bigger. The survival was better when patients with SUV value, 9.0 than those with SUV value=9.0.

Conclusions: CT was better than PET in term of determining clinical T stage of esophageal carcinoma, while PET diagnosis the N stage was good the same as CT. SUV 9.0 may be regarded as a practical indexes to determine prognosis in esophageal carcinoma.