

AB005. OS01.05. Early prediction of response to target therapy by FDG-PET in thymic epithelial tumors: a monocentric experience

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Background: Recently several data regarding the role of ¹⁸F-Fluorodeoxyglucose positron emission tomography (¹⁸F-FDG PET) imaging in management of patients with thymic epithelial tumors (TET) have been published. The primary objective of this study was to demonstrate the role of early ¹⁸F-FDG-PET in patients with TETs treated with target therapy as surrogate of 12-month progression free survival (PFS) according to Response Evaluation Criteria in Solid Tumors (RECIST).

Methods: Data from 50 patients with TETs treated with target therapy at the Rare Tumours Reference Center of Campania Region, were retrospectively analysed and those that underwent FDG-PET before and after the first 4-8 weeks of treatment were included in the study. Treatment response was expressed as the percent change in maximal standardized uptake values (SUV) of the most ¹⁸F-FDG avid lesion in each patient. Based

on previous literature data, the patients were stratified as metabolic highly responders, metabolically partial responders and metabolically low/no responders using 25% and 25% thresholds for SUV variations from baseline. Tumor response was assessed by contrast-enhanced computed tomography (CE-CT) using RECIST criteria. Overall PFS and correlation between 12-month PFS and early metabolic response were assessed.

Results: Thirty-two patients (10 with thymic carcinoma and 22 with thymoma) with unresectable Masaoka stage III or IV TETs were included. Median PFS rates were 28, 14, and 4 weeks, respectively for metabolic highly, partial, low/no responders. Metabolic highly responders had significantly longer progression-free survival (P=0.0008). Twelve-month PFS was significantly correlated with early FDG-PET metabolic response (P=0.0349). No correlation has been found with overall survival (P=0.3008), stage disease (P=0.7658) and histotype (P=0.8088).

Conclusions: Early metabolic response assessed by FDG-PET can be used as surrogate of 12-month PFS in patients with TETs treated with target therapy. In the real life clinical practice, metabolic response is useful for the prediction of clinical outcome and therefore for the optimization of treatment.

Keywords: Target therapy; early metabolic response; fluorodeoxyglucose positron emission tomography (FDG-PET); 12-month progression free survival (PFS)

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