Abstract: S227

Title: SERUM TARC COMBINED WITH FDG-PET IMAGING IMPROVES INTERIM RESPONSE EVALUATION IN CLASSIC HODGKIN LYMPHOMA: A RETROSPECTIVE ANALYSIS OF GERMAN HODGKIN STUDY GROUP HD16 AND HD18 TRIALS

Abstract Type: Oral Presentation

Session Title: Hodgkin lymphoma

Background:

Treatment guidance based on interim response assessment as determined by FDG-PET imaging has become standard of care in patients treated for classic Hodgkin lymphoma (cHL). However, the positive predictive value of interim FDG-PET (iPET) imaging is limited resulting in a significant proportion of patients being overtreated. More tumor cell specific biomarkers like serum Thymus and Activation Regulated Chemokine (TARC) might aid in early response assessment. Previous single center studies demonstrated high potential of interim serum TARC assessment to improve on interim response assessment.

Aims:

The aim of the current study is to investigate the additive prognostic value of interim serum TARC to iPET imaging in patients treated in the German Hodgkin Study Group (GHSG) HD16 and HD18 trials.

Methods:

Patients with cHL and available serum samples from HD16 and HD18 trials that were treated in the standard arm in which treatment that was not guided based on iPET and patients from the experimental arm that were iPET positive were included. HD16 was a trial of PET-based de-escalation of radiotherapy in early stage favourable HL. HD18 was a trial of PET-based de-escalation of BEACOPPesc chemotherapy in advanced stage HL. Serum TARC was measured by commercially available ELISA at baseline (TARC-0) and after two cycles of treatment (TARC-2) in all patients with available samples. TARC-positivity was predefined based on previous studies as a serum level > 1000 pg/ml. PFS, measured from enrolment to progression, relapse or death, or censored at the date of last information on tumor status, was analysed according to Kaplan-Meier. Hazard Ratios were obtained by Cox regression adjusted for age, sex, and trial if applicable. This study was performed on behalf of the consortium for minimal residual disease in cHL.

Results:

A total of 278 patients were included for this analysis of which 76 patients with measurable disease at baseline from the HD16 trial and 202 patients from the HD18 trial. The baseline characteristics between patients with available serum samples and the entire cohorts from the HD16 and HD18 trial were similar. At baseline 51 (67%) of early favourable patients and 176 (87%) of advanced stage patients were TARC-positive. After 2 cycles, 3 (4%) and 31 (15%) of patients in the HD16 and HD 18 trial remained TARC-positive, respectively. TARC-2 had prognostic relevance on PFS in the total cohort from both trials (5y-PFS 89.7% vs. 75.1% for TARC-2 negative vs. positive, HR ([95% CI]: 2.75 [1.19-6.37]). Prognostic relevance could also be observed for the HD16 trial patients (5y-PFS 85.0% vs. 0% for TARC-2 negative vs. positive, HR ([95% CI]: 6.85 [1.53-30.71]) with a trend observable for HD18 trial patients (5y-PFS 91.3% vs. 84.4% for TARC-2 negative vs. positive, HR ([95% CI]: 1.99 [0.71-5.60]) when analysed separately. Finally, we combined PET-2 and TARC-2 for response assessment. Strikingly, among PET-2 positive patients, TARC-2 was able to differentiate a group of patients that did as good as PET-2 negative patients. PET-2 positive / TARC-2 negative patients (n=44) had a 5-year PFS of 90.9% (95%-CI: 82.4%-99.4%), not different from the PET-2 negative patients (n=169) with a 5-year PFS of 89.1% (95%-CI: 84.2%-94.0%). PET-2 positive / TARC-2 positive patients (n=14) though, had a 5-year PFS of only 61.4% (95%-CI: 34.5%-88.2%) (Figure 1).

Summary/Conclusion:

In this study of serum TARC as a response biomarker in two large clinical trials of cHL patients using a predefined cutoff to determine TARC-positivity, we found TARC to be prognostic after 2 cycles of chemotherapy. Remarkably, TARC was able to identify two groups having a different prognosis among PET-2 positive patients. Considering the fact that the majority of PET-2 positive patients will not relapse, TARC-2 could help identify a prognostically bad subgroup while at the same time identifying most PET-2 positive patients as having an equal outcome compared to PET-2 negative patients.

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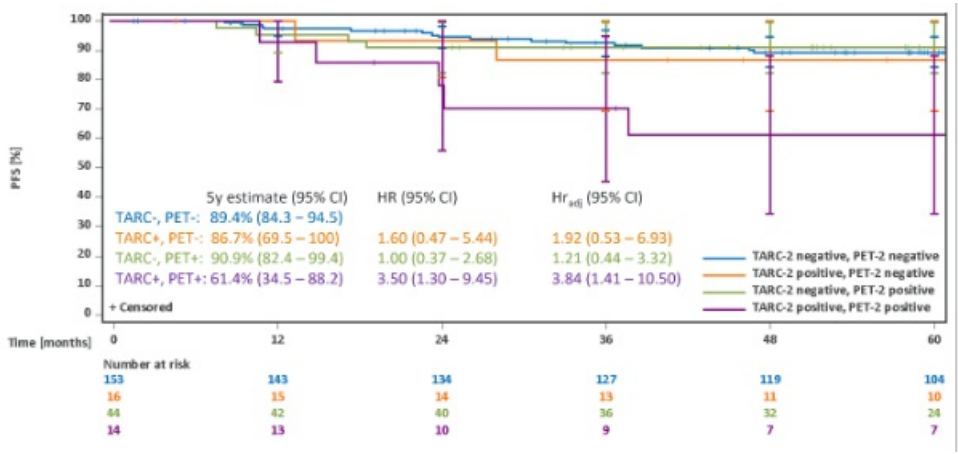
Figure 1. Progression free survival (PFS) for patients with cHL based on interim PET and interim TARC results.



Keywords: Hodgkin’s lymphoma, Prognostic groups, FDG-PET, Hodgkin’s disease