ABSTRACT

TITLE:

# Evaluation of early response to chemotherapy in patients with non-small-cell lung cancer by comparison of PET-CT based EORTC and PERCIST criteria

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**MATERIAL AND METHODS:**

32 biopsy proven patients of non-small-cell lung cancer who underwent ^{18}F-FDG PET-CT scan at baseline and post 2-4 cycles of standard chemotherapy were included in this study. The chemotherapeutic responses were evaluated according to the EORTC and PERCIST 1.0 criteria. The patients with discordant results were followed up with further clinical/imaging (CT/MRI/PET-CT) results.

Concordance among these protocols was assessed using Cohen's $\kappa$ coefficient. Progression-free survival (PFS) was calculated using the Kaplan-Meier test.


**RESULTS:**.EORTC and PERCIST 1.0 classifications were discordant in only 3 patients (9.4 %), resulting in better concordance ($\kappa$=0.808, P = 0.00). Three patients with discordant results had PMR response on EORTC and SMD response on PERCIST1.0. On follow up of these patients with discordant results showed progressive disease after 7,10 and 14 months on follow up CT and PET-CT.

PERCIST _5 (five lesions) and PERCIST_1(one lesion)  classifications were discordant in only 3 patients (9.4 %), resulting in better concordance ($\kappa$=0.808, P = 0.00).

**CONCLUSION:**

PET based EORTC and PERCIST 1.0 criteria show concordant results with only few cases with discordant results which were not stastically significant. The percent changes of FDG uptake on PERCIST from baseline to after chemotherapy had a high correlation whether a single hottest lesion or 5 hottest lesions anywhere in the body were measured. The simple single lesion SULpeak of PERCIST quite accurately reflects behavior of all lesions in the body