

2022-RA-590-ESGO

### METABOLIC ACTIVITY DETERMINES SURVIVAL DEPENDING ON THE LEVEL OF LYMPH NODE INVOLVEMENT IN CERVICAL CANCER

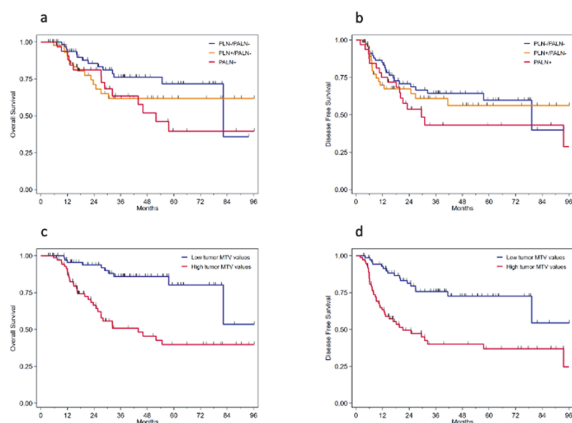
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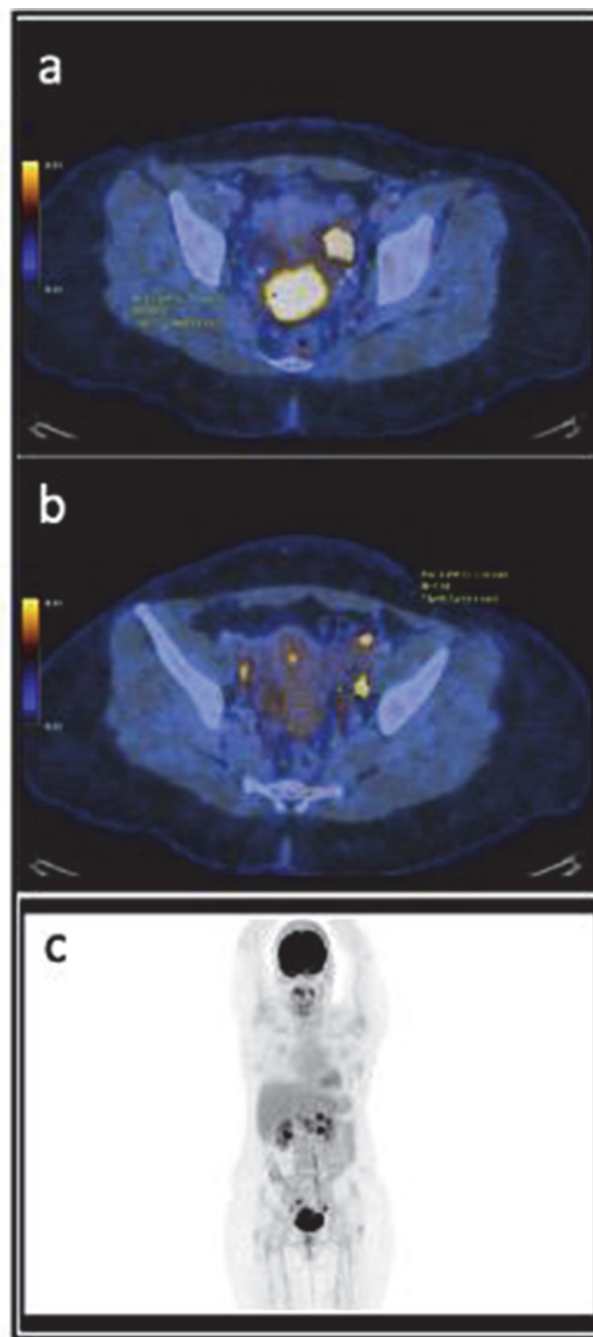
**Introduction/Background** To assess the impact of PET/CT functional parameters on survival, locoregional, and distant failure according to the most distant level of lymph node [<sup>18</sup>F]FDG uptake in patients with locally advanced cervical cancer (LACC).

**Methodology** Retrospective study including 148 patients with LACC treated with concurrent chemoradiotherapy after PET/CT and para-aortic lymph node (PALN) surgical staging. Two senior nuclear medicine physicians reviewed all PET/CT exams and retrieved tumor and lymph node metabolic parameters: SUVmax, MTV, TLG. Oncological outcomes according to metabolic parameters and level of lymph node spread on PET/CT were assessed.

**Results** In patients without lymph node uptake on PET/CT, high MTV values of the cervical tumor were associated with DFS (HR=5.14 95%CI=[2.15–12.31]), OS (HR=6.10 95%CI=[1.89–19.70]), and time to distant (HR=4.73 95%CI=[1.55–14.44]) and locoregional recurrence (HR=5.18 95%CI=[1.72–15.60]). In patients with pelvic lymph node (PLN) uptake but without PALN uptake on [<sup>18</sup>F]FDG-PET/CT, high MTV values of the cervical tumor were associated with DFS (HR=3.17 95%CI=[1.02–9.83]) and OS (HR=3.46 95%CI=[0.96–12.50]), and the number of PLN fixations was associated with DFS (HR=1.30 95%CI=[1.10–1.53]), OS (HR=1.35 95%CI=[1.11–1.64]), and time to distant (HR=1.35 95%CI=[1.08–1.67]) and locoregional recurrence (HR=1.31 95%CI=[1.08–1.59]). There was no significant association between cervical tumor metabolic or lymph node metrics and survival outcome in patients with PALN uptake.



**Abstract 2022-RA-590-ESGO Figure 1** a. Overall survival (OS) according to lymph node spread; b. Disease-free survival (DFS) according to lymph node spread; c. OS according to MTV values; d. DFS according to MTV values



**Abstract 2022-RA-590-ESGO Figure 2** PET images of a patient presenting with a cervical tumor with left pelvic lymph node involvement. a) cervical tumor contouring with semiautomatic tumor thresholding method at 40% of the SUVmax (SUVmax 22.8; TLG 372.9 g/ml\*cm<sup>3</sup>; MTV 37.16 cm<sup>3</sup>); b) the same procedure with a left pelvic involved lymph node with SUVmax 7.9; TLG 8.7 g/ml\*cm<sup>3</sup>; MTV 1.65 cm<sup>3</sup>; c) Maximum intensity projection showing the absence of distant metastasis

**Conclusion** Cervical MTV is more accurate than SUVmax to predict survival outcome in patients with locoregional disease confined to the pelvis and should be implemented in routine clinical practice. Prognostic value of metabolic metrics disappears with PALN uptake, which is associated with distant failure in nearly half of patients.