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Role of 18FDG-PET/CT in pre and post-treatment assessment of locally advanced cervical cancer

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Background / Aims: To evaluate the clinical impact of ^{18}FDG-PET/CT in the staging of locally advanced cervical cancer (LACC) and treatment response assessment.

Methods: This is an observational, prospective study. Between 2009 and 2013, 70 patients with LACC were staged by International Federation of Gynecology and Obstetrics (FIGO) recommendations and ^{18}FDG-PET/CT scans were added in the initial work up. Whenever technically feasible, histological confirmation was performed. Patients were treated with standard chemo-radiation therapy to the pelvic field plus brachytherapy. Locoregional response was evaluated clinically and with a second ^{18}FDG-PET/CT scan three months after treatment was completed.

Results: In 51/70 (72,8%) of the patients, extrauterine hypermetabolic lesions were detected by ^{18}FDG-PET/CT, resulting in changes in FIGO's staging. 26 extrapelvic locations were found in 19/70 (27.1%) patients, and in all of them the initial proposed therapeutic approach was modified (extended lumbo-aortic, and/or inguinal radiation therapy field, and/or chemotherapy). A second ^{18}FDG-PET/CT after treatment was performed in 56/70 patients. Metabolic response in local cervical compromise was observed in 51/56 (91.07%) patients, with complete response in 36 patients (64.2%) and partial response in 15 patients (26.7%). In 5 (8.9%) patients there was no metabolic response or progression. In patients with pelvic lymph nodes compromise, the ^{18}FDG-PET/CT complete response rate was 71.4%. ^{18}FDG-PET/CT sensitivity, specificity, PPV and NPV to evaluate locoregional complete response were 69%, 79%, 53% and 88% respectively.

Conclusion: ^{18}FDG-PET/CT compensates the FIGO's classification limitations in LACC and its routine inclusion should be considered for initial staging. The low PPV of 18FDG-PET/CT in locoregional response assessment, mainly due to the local inflammatory process after 3 months, makes it unsuitable to evaluate persistent disease so a later time point for the follow-up scan should be considered. Quantitative treatment response assessment could also be of value in addition to qualitative evaluation. Further validation is required with higher number of patients.

Disclosure of Interest: None Declared