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Interesting Images

^{18}F-FDG PET/CT in Relapsed Endometrial Cancer Treated with Preoperative PD-1 Inhibitor Dostarlimab

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Abstract: Dostarlimab is an immune checkpoint inhibitor (ICI) targeting the Programmed-Death-1 (PD-1) co-receptor, recently approved by the European Medicines Agency (EMA) and the Food and Drug Administration (FDA) as a novel therapy for recurrent or advanced endometrial cancer. We report the case of a 64-year-old woman, experiencing vaginal recurrence with microsatellite instability high/hypermutated of a FIGO stage IA grade 2 endometrial endometrioid adenocarcinoma. She received preoperative chemotherapy with four cycles of carboplatin plus paclitaxel, with stable disease on pelvic magnetic resonance imaging (MRI) and fluorine-18 fluorodeoxyglucose positron emission tomography (^{18}F-FDG PET/CT). Dostarlimab (500 mg intravenously every 3 weeks) was then introduced. The subsequent evaluation after three perfusions demonstrated a complete metabolic response on ^{18}F-FDG PET/CT according to immunotherapy-modified PET response criteria in solid tumors (imPERCIST) criteria, then confirmed by MRI according to immune response evaluation criteria in solid tumors (iRECIST). This clinical description suggests that ^{18}F-FDG PET/CT might take place among available tools for guiding the preoperative management for recurrent endometrial cancer patients receiving dostarlimab immunotherapy that should be further explored through clinical trials.

Keywords: ^{18}F-FDG PET/CT; endometrial adenocarcinoma; dostarlimab; immunotherapy; tumor response; microsatellite instability high/hypermutated

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In this case (Figure 1), ^{18}F-FDG PET/CT highlighted the tumor resistance to platinum-based chemotherapy and it also revealed its remarkable sensitivity to immunotherapy with dostarlimab. This rare description highlights the utility of ^{18}F-FDG PET/CT for guiding the preoperative management for recurrent endometrial cancer patients using PET-based immune-related response criteria [1,2].

The very recent literature reports that dostarlimab monotherapy (TSR-042) is associated with significant antitumor activity and promising response rates for relapsed endometrial cancer patients [3,4], especially those with deficient mismatch mutation repair (MMR) [5] or MSI-H [6].

Given this update on the evolving role of immunotherapy as treatment of patients with recurrent endometrial cancer [7,8], we strongly believe that ^{18}F-FDG PET/CT might take a place among available tools for a reliable strategy to manage preoperative therapy and should be further explored through clinical trials evaluating the clinical benefit with dostarlimab.

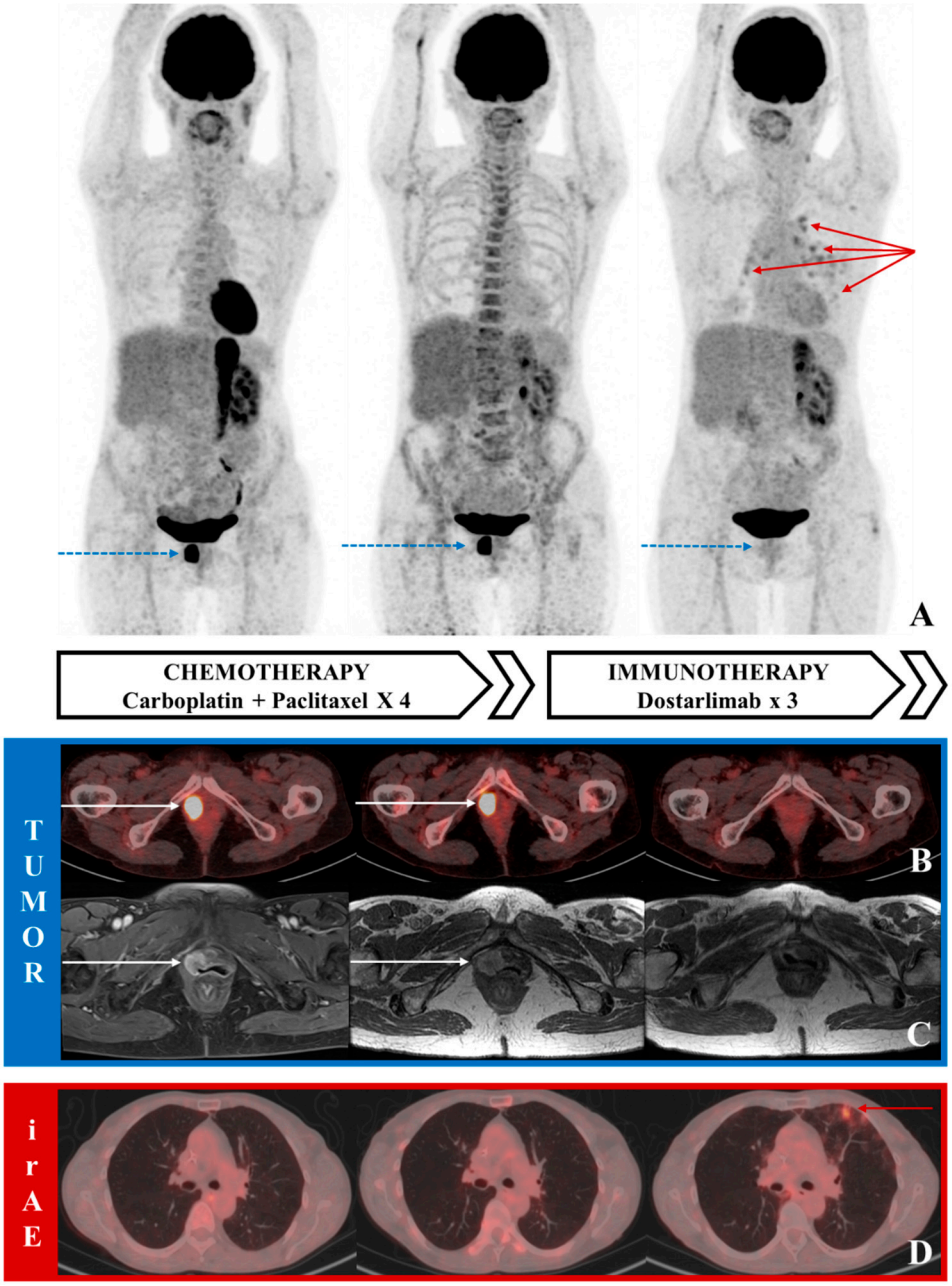

Figure 1. ^{18}F-FDG PET/CT images and axial T1 gadolinium-enhanced pelvic MRI (with fat-saturation for the left image and without for the two others, because fat-saturation technique was not available/performed) at recurrence and follow-up during chemotherapy and immunotherapy showing pathological FDG uptake (**A**: maximum intensity projection-MIP PET images; **B**: fused axial PET/CT images) and contrast enhancement (**C**) corresponding to the tumor lesion in the vagina (blue arrows on the MIP, white arrows on ^{18}F-FDG PET/CT and MRI images), without any metabolic or morphologic changes under chemotherapy. After three injections of dostarlimab, a complete response was observed both on pelvic MRI and ^{18}F-FDG PET/CT, associated with irAE (immune-related adverse event) pneumonitis, suggested by hypermetabolic peripheral reticular markings (red arrows on the MIP and ^{18}F-FDG PET/CT images) and small ground-glass opacities (**D**), then confirmed by bronchoalveolar lavage.

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Data Availability Statement: The data presented in this study are available on request from the corresponding author.

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