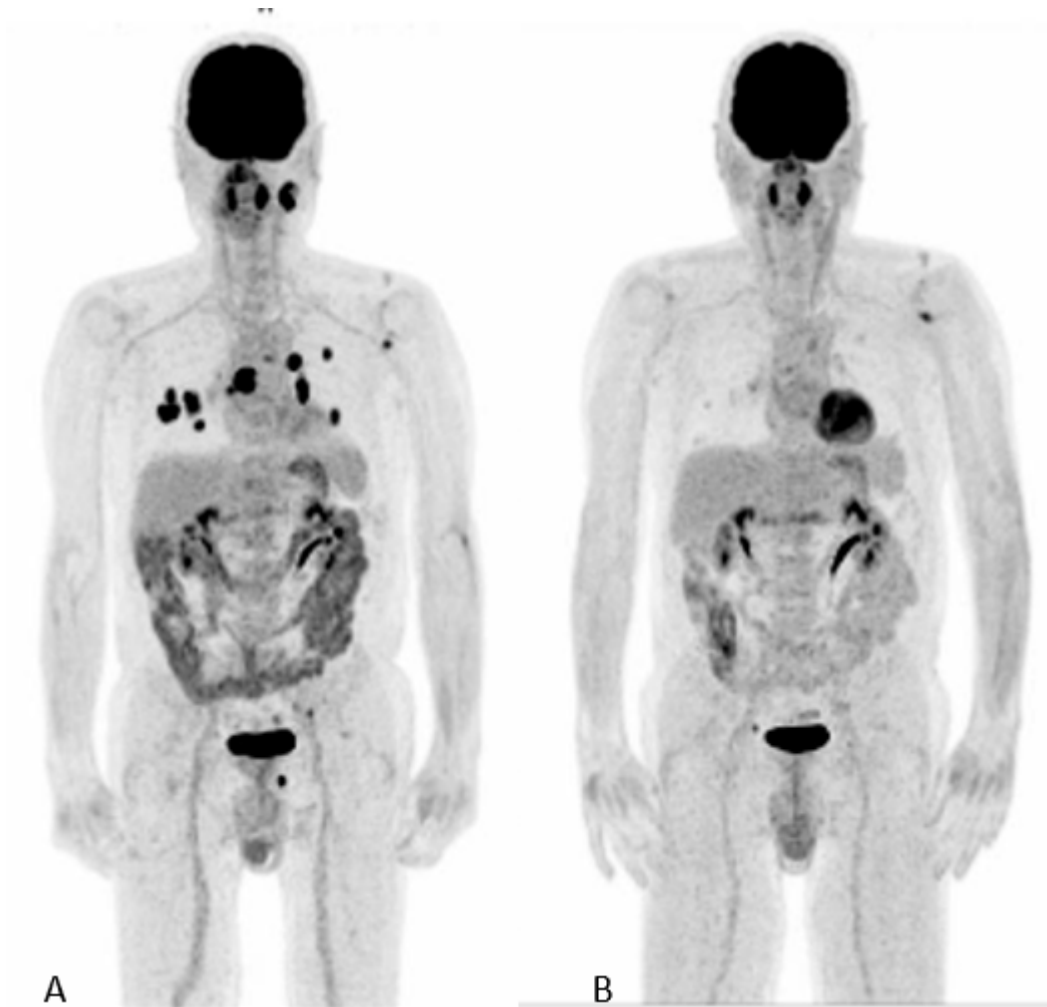


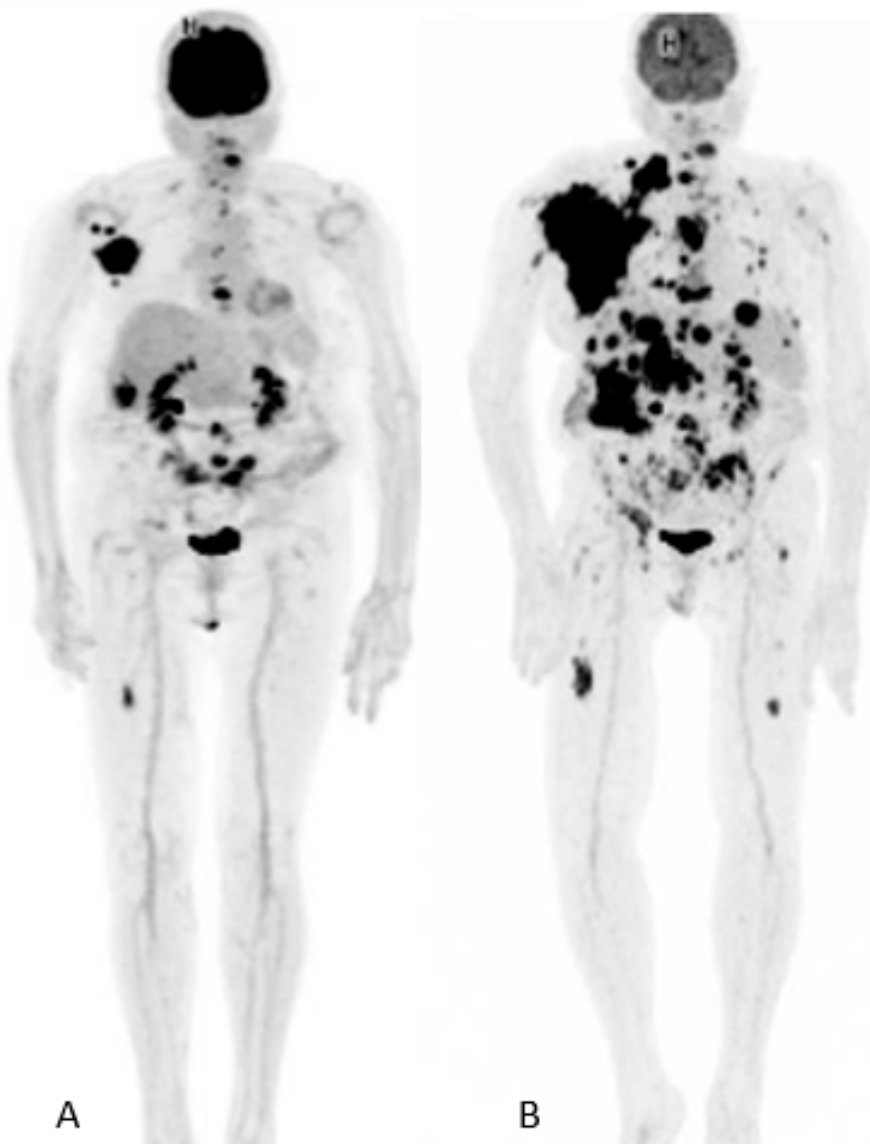
Supplementary Figure S1. Example of a partial response to ICI.

A: Maximum Intensity Projection at baseline showing multiple secondary lesions in lymph nodes (cervical, mediastinal, pararectal), and lungs; B: Maximum Intensity Projection at follow-up showing a major decrease in sum of SULpeak (-87%) and in TMTV (-76%).

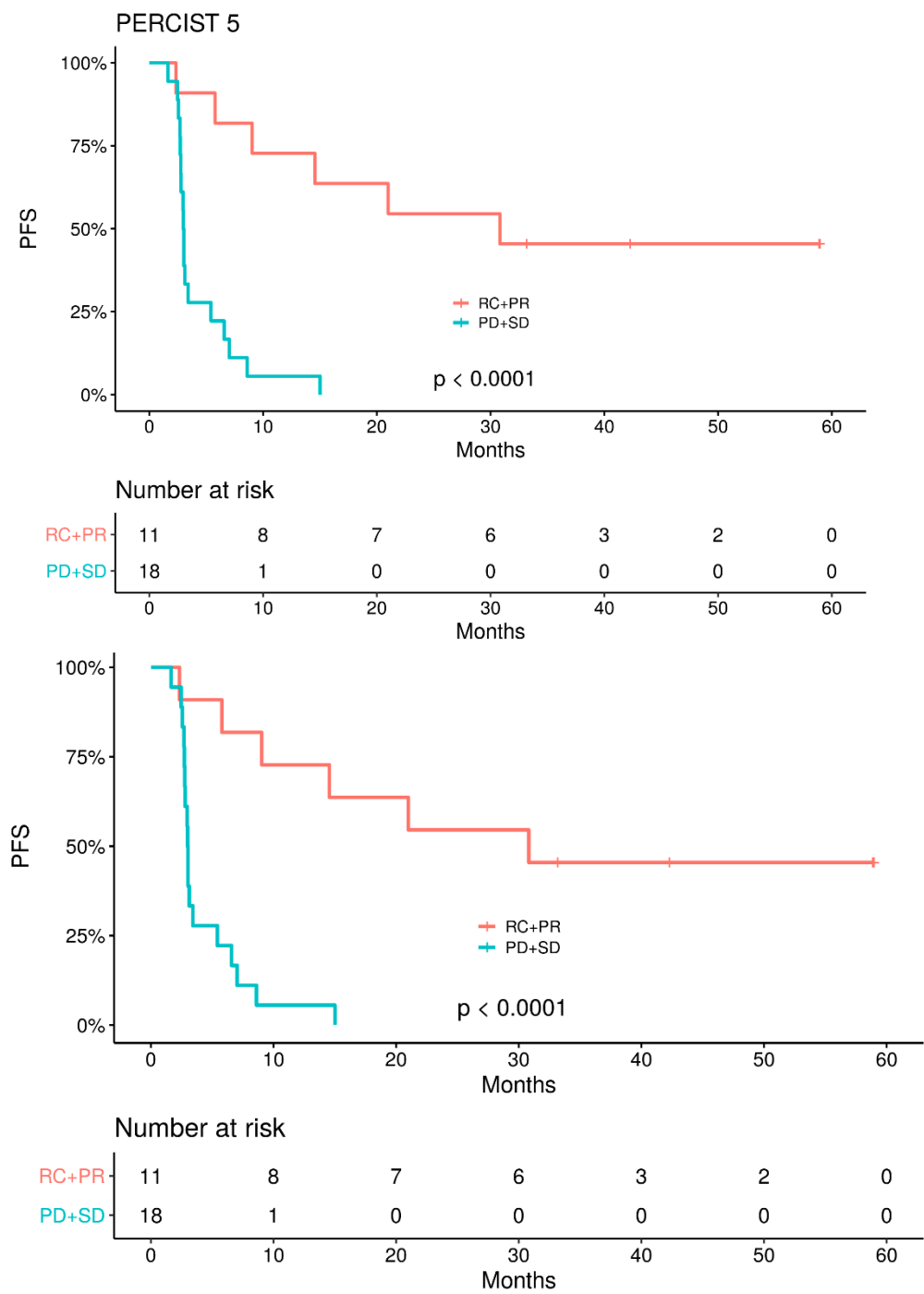


Supplementary Figure S2. Example of progression under ICI.

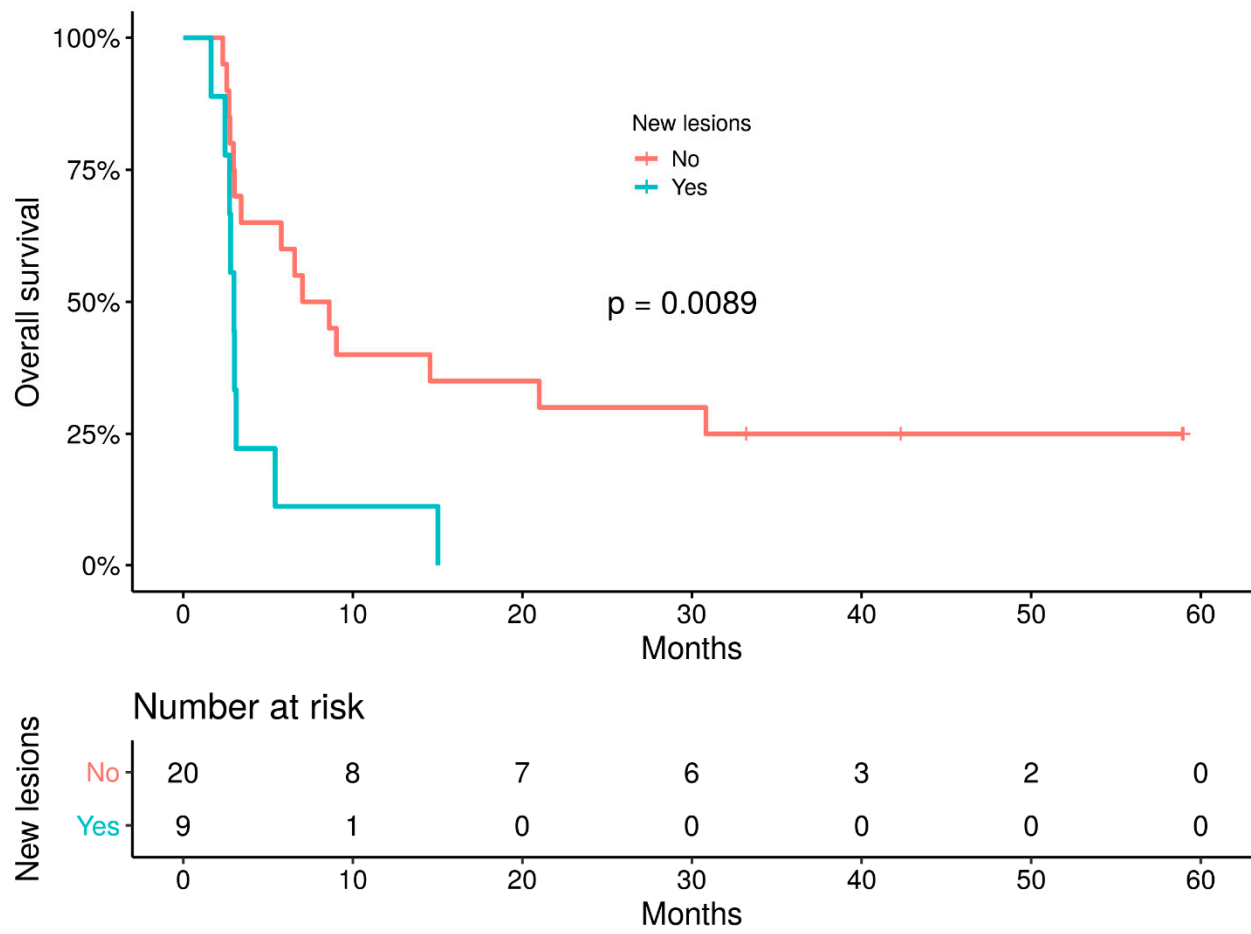
A: Maximum Intensity Projection at baseline showing multiple metastatic lesions with lymph node and bone involvement ; B: Maximum Intensity Projection at follow-up showing metabolic progression with PERCIST 5 with appearance of new lesions (in bone, lungs, liver and lymph nodes) and stability according to imPERCIST with an increase of  $\Delta$ SUL peak increase not reaching progression cut-off (+19%) and a major increase of TMTV (+494%)



Supplementary Figure S3. PFS between responder (CR+PR) vs non-responder (SD+PD) patients according to PERCIST5 (Figure A) and imPERCIST 5 (Figure B) criteria.



Supplementary Figure S4. PFS of patients with no new lesion versus patients with at least one new lesion.



Supplementary Figure S5. PFS of patients with  $\Delta$ TMTV less than -10.3% versus greater than -10.3% (Figure A) and those with  $\Delta$ TMTV less than +9.8% versus greater than +9.8%

