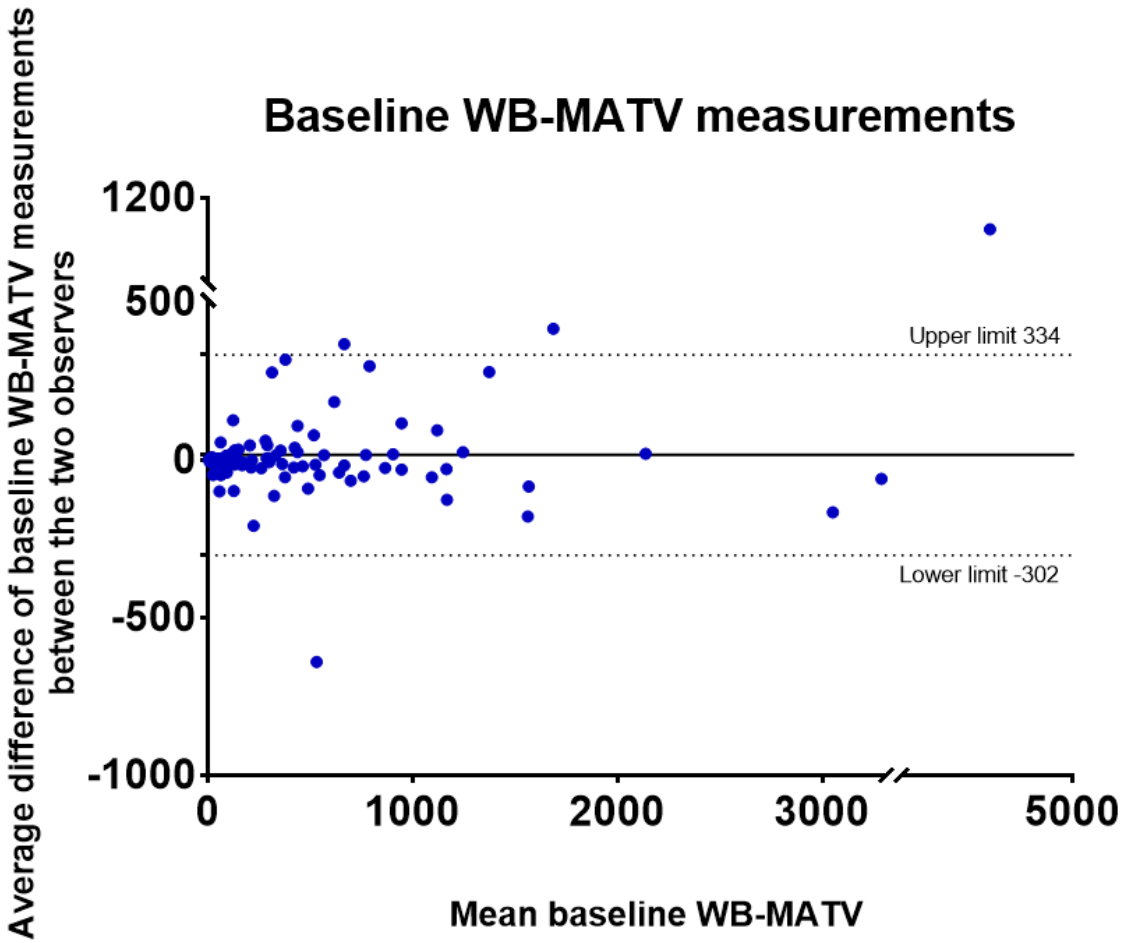
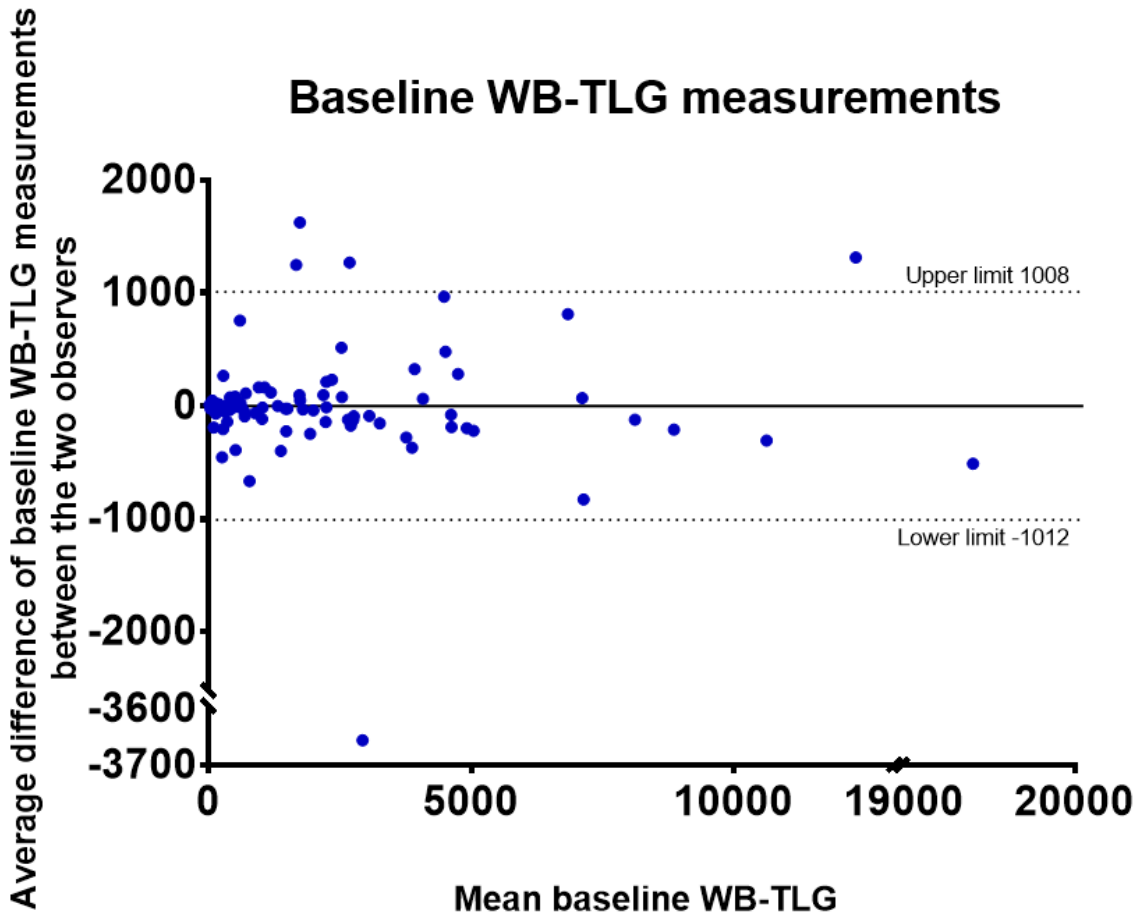


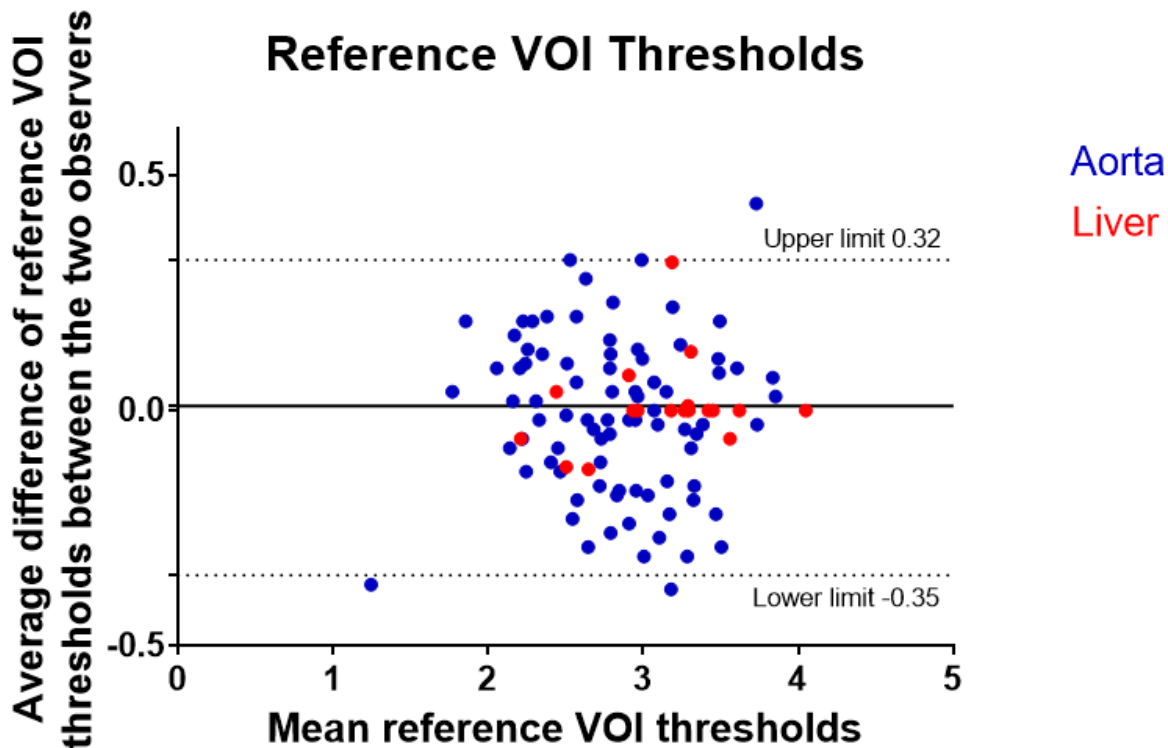
A



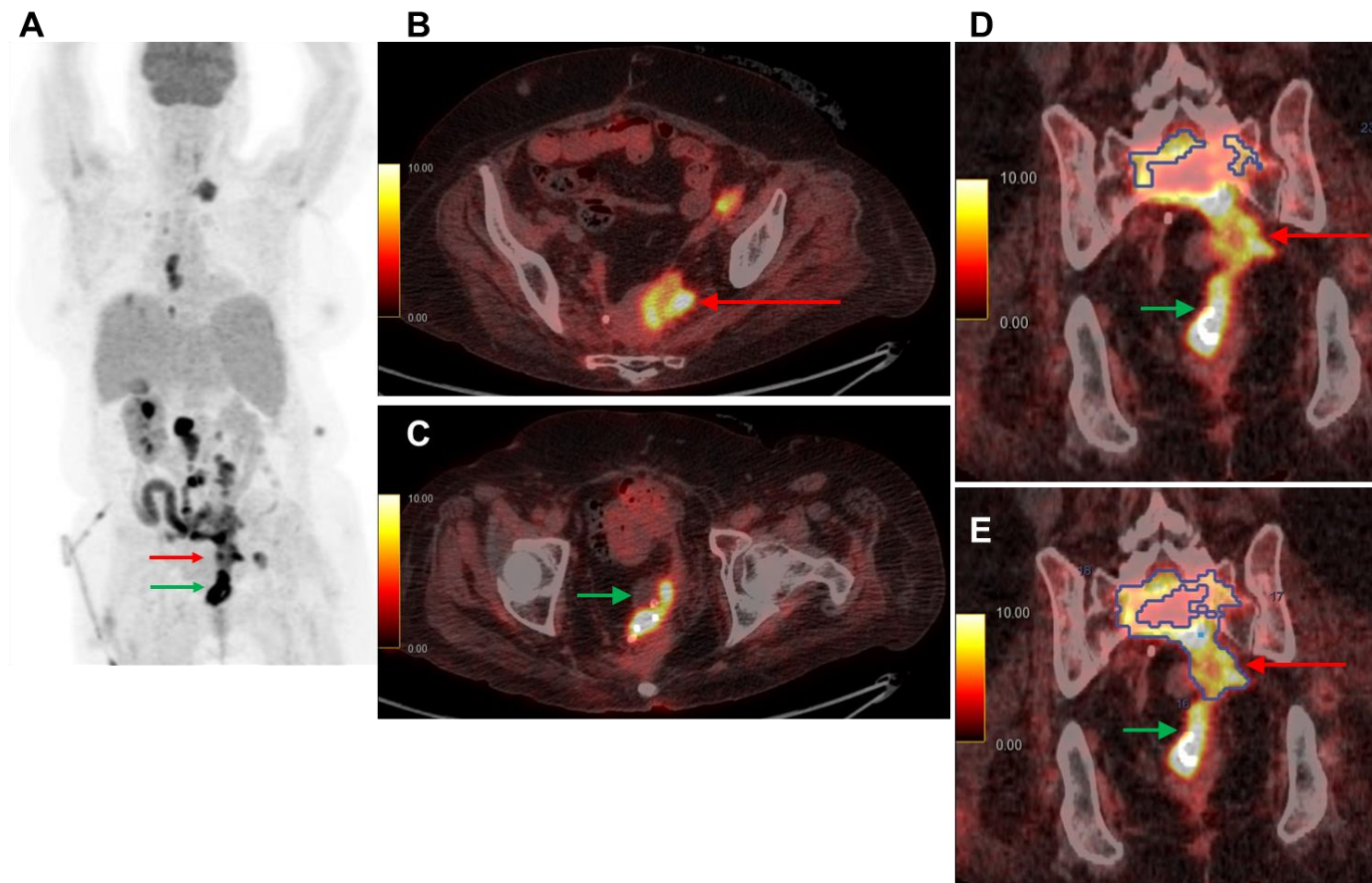
B



C



**Supplemental FIGURE 1.** Bland-Altman plots for baseline WB-MATV (A), WB-TLG (B), and reference VOI thresholds (C). Each dot represents a patient viewed by the two observers (total, 100 patients). x-axis represents the mean measurement of the two observers. y-axis represents average difference of the measurement between the two observers. Solid line represents average bias, and dashed lines represent corresponding bias  $\pm$  2 SDs.



**Supplemental FIGURE 2.** The main cause of variability between observers, who were completely unaware of clinical history for both WB-MATV and WB-TLG measurements, was the difference in selection of target lesions. PET maximum-intensity projection (A), axial fused PET/CT images (B, C), and coronal fused PET/CT images (D, E) of the example case. A metabolically active lesion located in the pelvic cavity (red arrow), with an equivocal origin (inflammatory/infectious or tumoral) and too close to urinary activity (green arrow), was not taken into consideration for WB-MATV/TLG measurements by observer 1 (D) (WB-MATV and TLG of observer 1: 78 cm<sup>3</sup> and 319 g; inferior to the cutoff values of MATV [100 cm<sup>3</sup>] and TLG [500 g]) but was measured by observer 2 (E) (WB-MATV and TLG of observer 2: 176 cm<sup>3</sup> and 712 g, respectively).

**Supplemental TABLE 1.** Survival characteristics of the pooled, development, and validation sets from SoMore-RegARd-C population.

|                                  | <b>Pooled population<br/>(n = 224)</b> | <b>Development set<br/>(n = 155)</b> | <b>Validation set<br/>(n = 69)</b> |
|----------------------------------|--|--------------------------------------|------------------------------------|
| <b>Median OS</b>                 |  |                                      |                                    |
| <i>Months</i>                    | 6.9                                    | 6.7                                  | 7.5                                |
| <i>95% CI</i>                    | 6.2–8.1                                | 5.4–8.1                              | 6.2–10.8                           |
| <b>No. of deaths</b>             | 217                                    | 151                                  | 66                                 |
| <b>Median PFS</b>                |  |                                      |                                    |
| <i>Months</i>                    | 3.3                                    | 3.2                                  | 3.3                                |
| <i>95% CI</i>                    | 2.2–3.7                                | 2.1–3.9                              | 2.0–3.8                            |
| <b>No. of progressive events</b> | 224                                    | 155                                  | 69                                 |

**Supplemental TABLE 2.** Agreement between the dichotomized WB-MATV and WB-TLG measurements for the development set.

|        | WB-MATV |       |       |
|--------|---------|-------|-------|
| WB-TLG | < 100   | ≥ 100 | Total |
| < 500  | 113     | 5     | 118   |
| ≥ 500  | 7       | 30    | 37    |
| Total  | 120     | 35    | 155   |

**Supplemental TABLE 3.** Contingency tables showing the agreement between the two observers of WB-MATV and WB-TLG measurements and discrepancy cases between categorization (cases assigned to a different category [low versus high tumor load] by the two observers) amongst the set of 100 patients measured by the two observers.

| WB-MATV    |       | Observer 1 |       | Total |
|------------|-------|------------|-------|-------|
|            |       | < 100      | ≥ 100 |       |
| Observer 2 | < 100 | 34         | 1     | 35    |
|            | ≥ 100 | 3          | 62    | 65    |
| Total      |       | 37         | 63    | 100   |

| WB-TLG     |       | Observer 1 |       | Total |
|------------|-------|------------|-------|-------|
|            |       | < 500      | ≥ 500 |       |
| Observer 2 | < 500 | 38         | 3     | 41    |
|            | ≥ 500 | 2          | 57    | 59    |
| Total      |       | 40         | 60    | 100   |