In Table S1 are shown the characteristics for all acquisition protocols for the Philips Gemini TF BigBore CT (CT-RT), Philips Gemini TF 64 PET/CT (PET/CT-NM), Toshiba Aquilion 64 CT (CT-DR-1), Philips Brilliance iCT 256 (CT-DR-2), Philips Brilliance 16 CT (CT-RT-F) and Philips Gemini TF PET/CT (PET/CT-NM-F). At Center 1, the protocols A to D are employed in RT clinical practice. In CT-DR-1 and CT-DR-2, QA protocols are used for quality assurance of the CT system and C' protocols stands for abdomen clinical protocols. In Center 2, C' is the protocol employed for prostate radiotherapy planning.

**Table S1**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CT** | **Protocol** | **Colim.** | **Rot.**  **Time (s)** | **Pitch** | **Filter** | **Slice**  **Thickness**  **(mm)** | **kV** | **mAs** |
| **CT-RT** | A | 16x0.75 | 0.75 | 0.563 | Brain-Smooth QA | 0.8 | 120 | 390 |
| B | 16x0.75 | 0.75 | 0.563 | Brain-Smooth QA | 1 | 120 | 350 |
| C | 16x1.5 | 0.75 | 0.813 | Standard – Standard B | 3 | 120 | 250 |
| D | 16x1.5 | 0.75 | 0.813 | Standard – Standard B | 5 | 120 | 300 |
| **PET/CT-NM** | A | 16x0.625 | 0.75 | 0.563 | Standard – Standard A | 0.8 | 120 | 390 |
| B | 16x0.625 | 0.75 | 0.563 | Standard – Standard A | 1 | 120 | 350 |
| C | 16x2.5 | 0.75 | 0.812 | Standard – Standard B | 3 | 120 | 250 |
| D | 16x2.5 | 0.75 | 0.812 | Standard – Standard B | 5 | 120 | 300 |
| **CT-DR-1** | QA | 16x1.5 | 0.5 | 0.828 | - | 0.5 | 120 | 202 |
| C’ | 16x1.5 | 0.75 | 0.828 | - | 2 | 120 | 61 |
| **CT-DR-2** | QA | 4x0.625 | 0.75 | 0.804 | B | 0.625 | 120 | 250 |
| C’ | 4x0.625 | 0.75 | 0.804 | YB | 2 | 120 | 93 |
| **CT-RT-F and**  **PET/CT-NM-F** | C’ | 16x1.5 | 1 | 0.813 | B (Standard) | 2 | 120 | 200 |

In Table S2 a list of all the radiomic features analyzed throughout this study is shown. It indicates whether each radiomic feature fit to a normal distribution and in case it does, if it was comparable with the result obtained in the other CT scanners implementing clinical protocols. Those who get to be comparable are the most robust radiomic features in this study, therefore the ones that would be chosen in the scenario of creating a model reliant in radiomic features.

**Table S2**

|  |  |  |
| --- | --- | --- |
| **Radiomics features** | **Fits a normal distribution** | **Comparable among all measurements** |
| **Skewness** | ✓ | ✓ |
| **Kurtosis** | ✓ | ✓ |
| **Entropy** | ✓ | ✓ |
| **Energy** | ✓ | ✓ |
| **Solidity** |  |  |
| **Eccentricity** | ✓ |  |
| **GLCM Energy** | ✓ |  |
| **GLCM Contrast** | ✓ | ✓ |
| **GLCM Entropy** | ✓ |  |
| **GLCM Homogeneity** | ✓ |  |
| **GLCM Correlation** | ✓ | ✓ |
| **GLCM Variance** | ✓ | ✓ |
| **GLCM Dissimilarity** | ✓ | ✓ |
| **GLCM Autocorrelation** |  |  |
| **GLSZM SAE** |  |  |
| **GLSZM LAE** | ✓ |  |
| **GLSZM GLN** | ✓ |  |
| **GLSZM SZN** | ✓ |  |
| **GLSZM ZP** | ✓ |  |
| **GLSZM LGLZE** |  |  |
| **GLSZM HGLZE** | ✓ | ✓ |
| **GLSZM SALGLE** | ✓ | ✓ |
| **GLSZM LALGLE** | ✓ | ✓ |
| **GLSZM LAHGLE** |  |  |
| **GLSZM GLV** | ✓ | ✓ |
| **GLSZM ZV** | ✓ | ✓ |
| **GLRLM SRE** | ✓ |  |
| **GLRLM LRE** | ✓ |  |
| **GLRLM GLN** | ✓ |  |
| **GLRLM RLN** | ✓ |  |
| **GLRLM RP** | ✓ |  |
| **GLRLM LGRE** |  |  |
| **GLRLM HGRE** |  |  |
| **GLRLM SRLGLE** |  |  |
| **GLRLM SRHGLE** | ✓ | ✓ |
| **GLRLM LRLGLE** | ✓ |  |
| **GLRLM LRHGLE** | ✓ | ✓ |
| **GLRLM GLV** | ✓ | ✓ |
| **GLRLM RLV** | ✓ |  |
| **NGTDM Coarseness** | ✓ | ✓ |
| **NGTDM Contrast** | ✓ | ✓ |
| **NGTDM Busyness** | ✓ | ✓ |
| **NGTDM Complexity** | ✓ |  |
| **NGTDM Strength** | ✓ | ✓ |