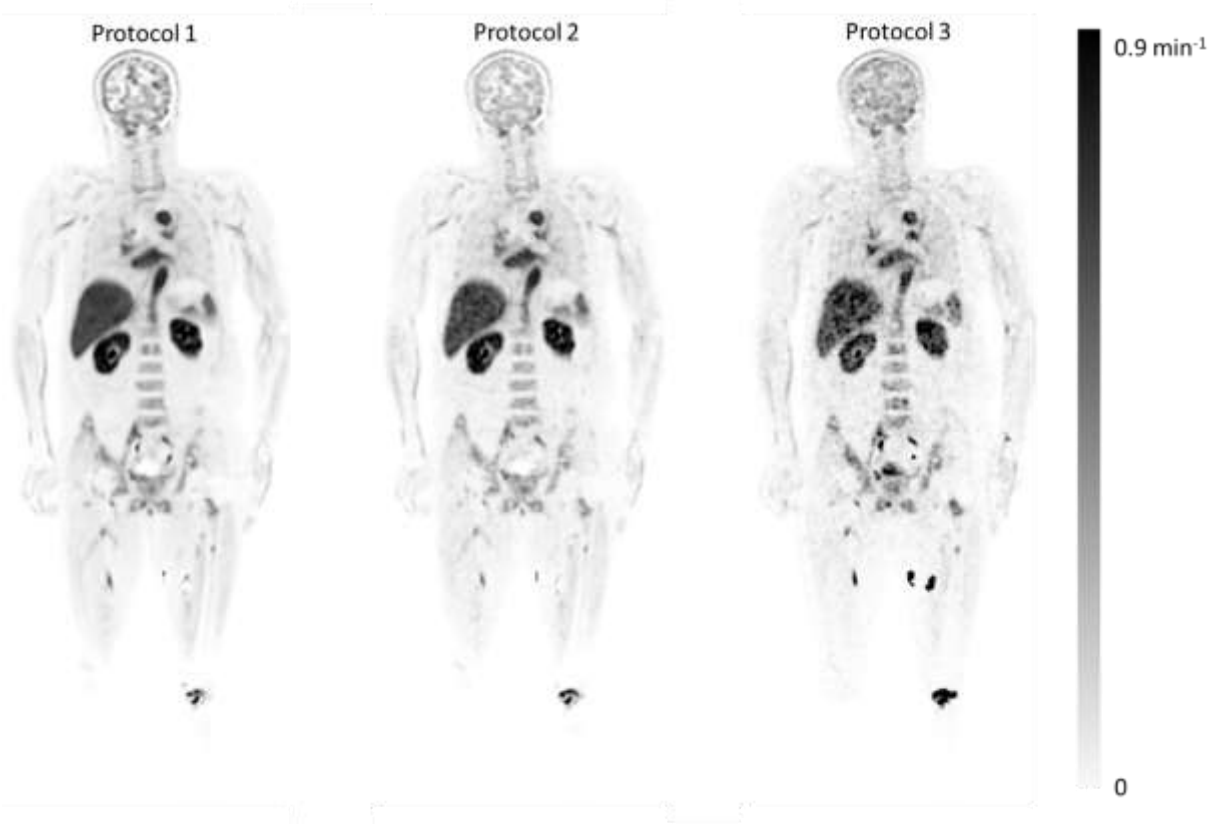
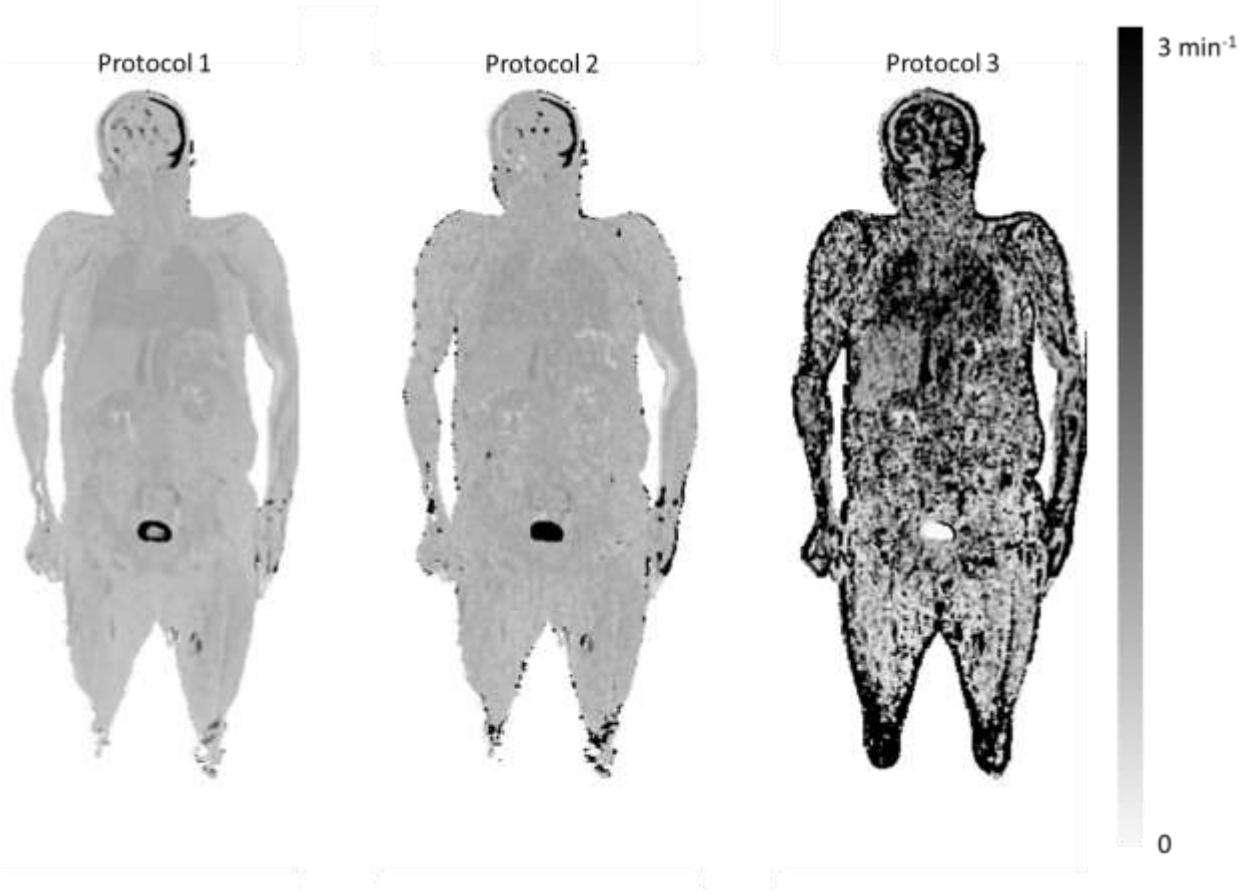
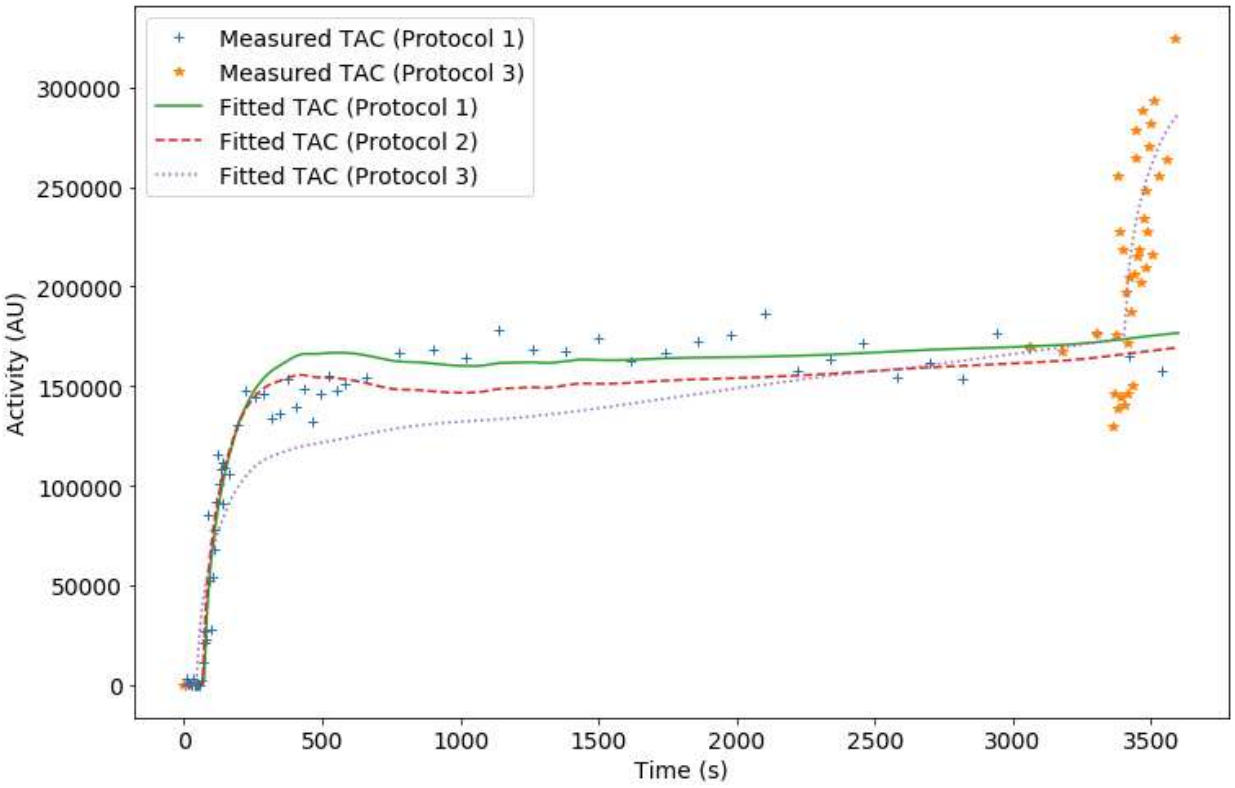


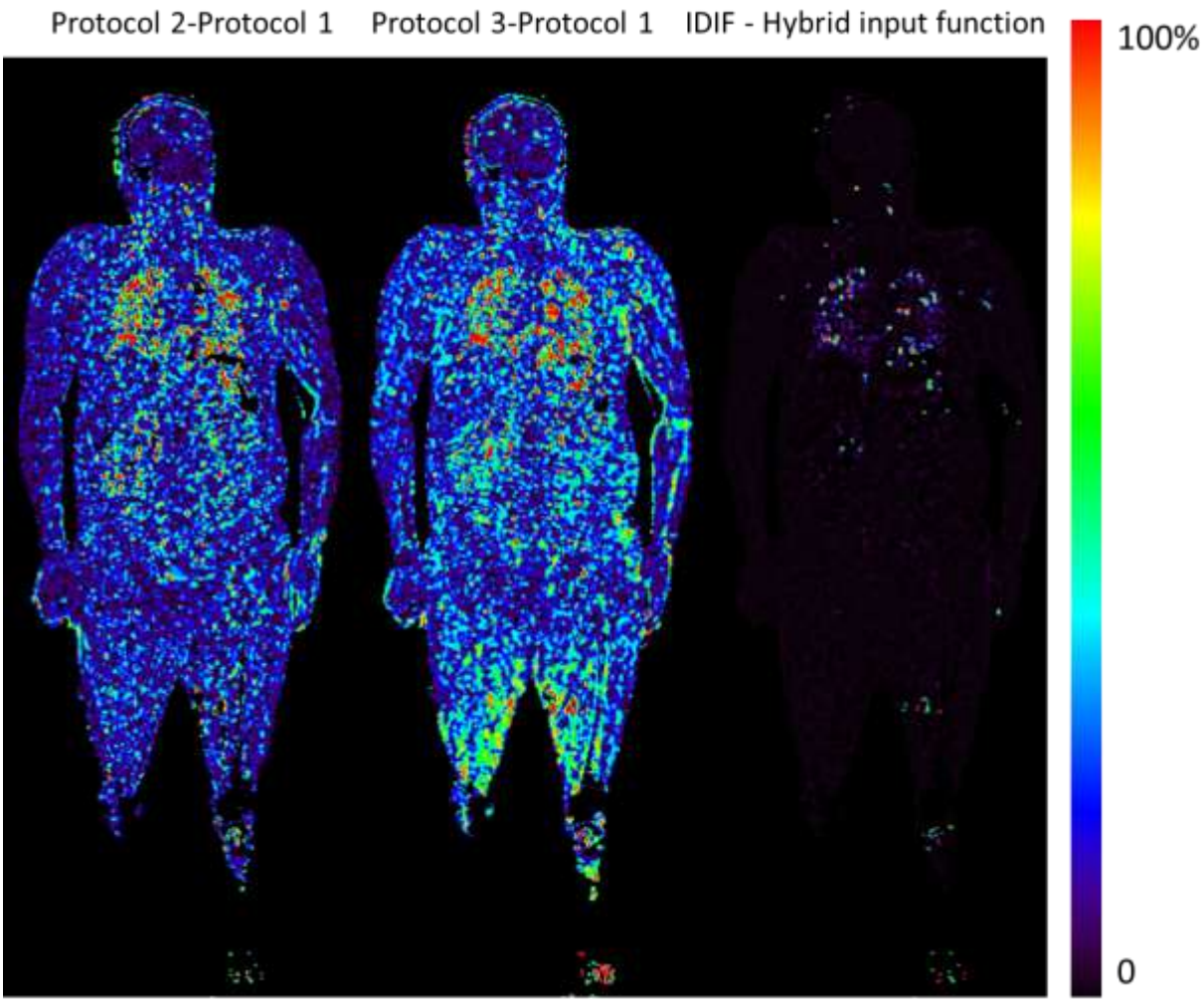
Supplemental Figure 1. K_1' images estimated using the three protocols. The three protocols in general shows similar K1' image. However, K_1' generated using Protocol 3 is significantly noisier. Some discrepancies around the bladder/urinary tract/leg vein regions.



Supplemental Figure 2. k_2' images estimated using the three protocols.
The k_2' images estimate from Protocol 2 is visually comparable to that from Protocol 1, suggesting the combination of the early and the late information was sufficient for k_2' estimation. However, much higher pepper noise was present in the image generated using Protocol 3. suggesting that by adding the early and the late phase information in the same time periods, the estimation accuracy degrades. On the other hand, since most of the incorrect k_2' estimation is present in boundary locations or regions with small K_1', the impact of k_2' on Ki images is small and was found to cause minimal image artifacts.



Supplemental Figure 3. Estimated TAC using the three Protocols for a lesion. For Protocol 2, only the early phase and the late phase of the measured TAC from Protocol 1 was used for fitting. For Protocol 3, only the data after 3000 seconds (orange stars) were used for fitting.



Supplemental Figure 4 The absolute percentage difference image of K_i between Protocol 2 and Protocol 1 (left). The absolute percentage difference image of K_i between Protocol 3 and Protocol 1 (middle). The absolute percentage difference image of K_i estimated using image-derived input function and the hybrid input function with Protocol 2 (right)

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