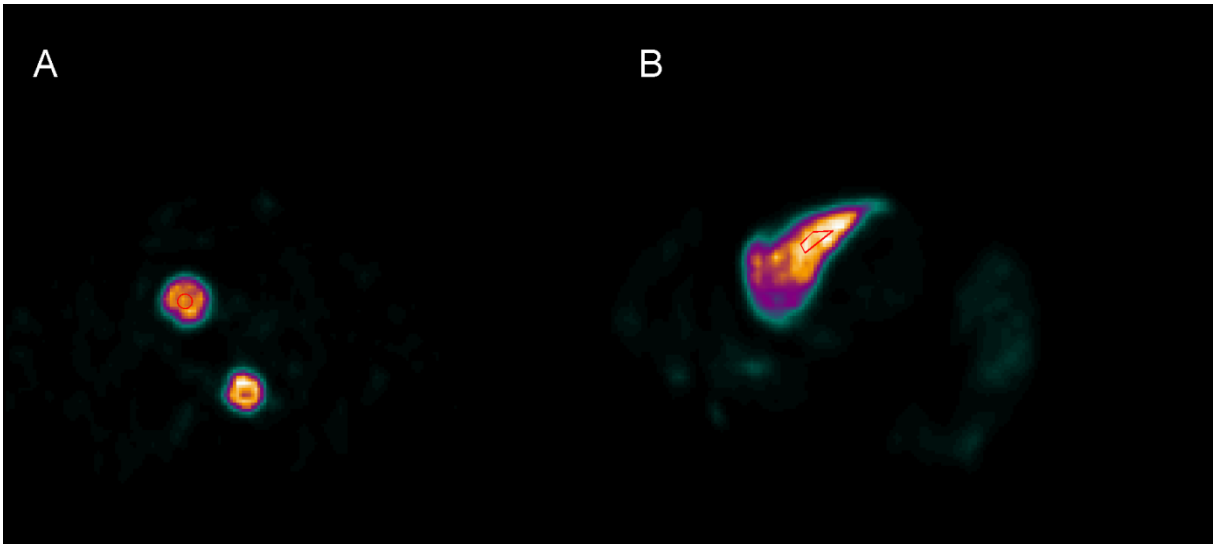
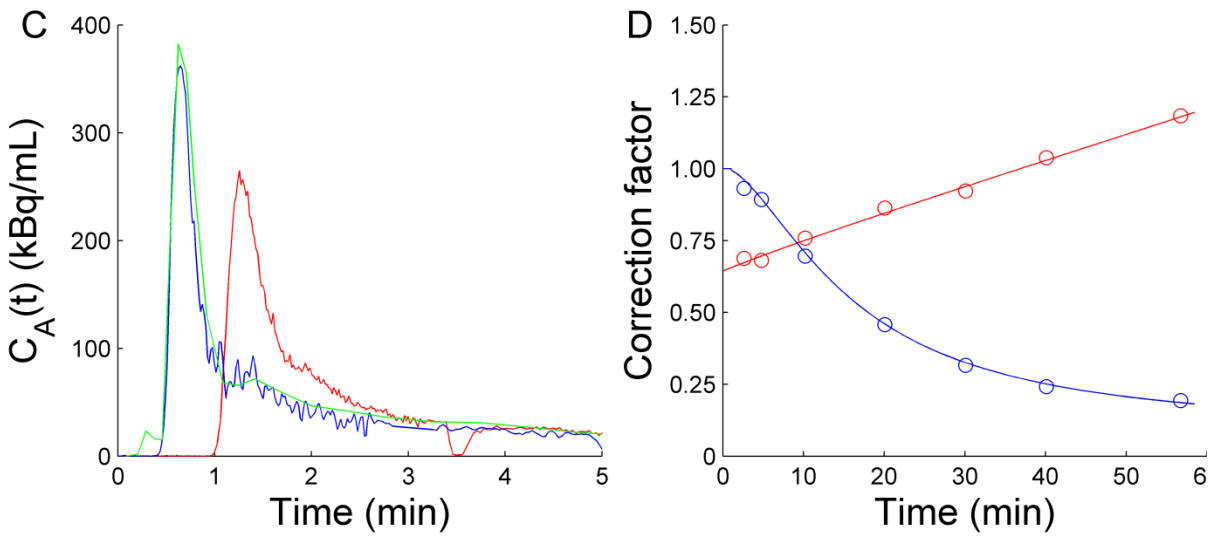
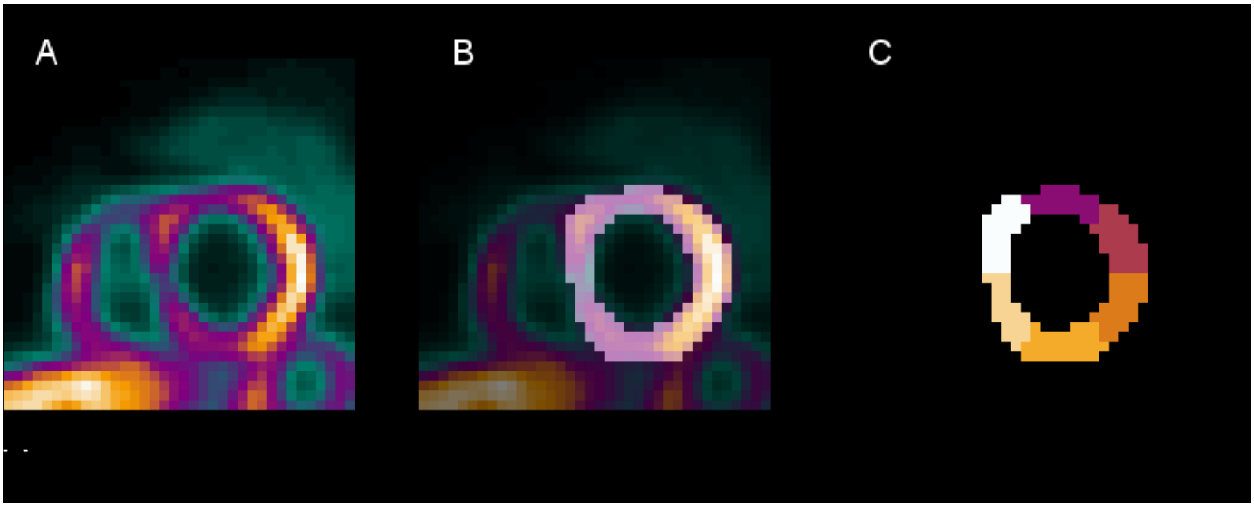
How the AA TAC was obtained.

This curve was obtained by drawing 1 cm diameter circular regions of interest (ROIs) over the ascending aorta in 5 transaxial images of an early frame of the dynamic scan, i.e. the frame in which the first-pass of the bolus through the AA was best visible (see Supplemental Figure 1 and 2 for an illustration of the method) (22). ROIs were placed in the centre of the ascending aorta to limit partial volume effects. In addition, to avoid spill-over from the myocardium, ROIs were drawn in planes >2cm from the myocardium, leaving out the top 5 planes of the FOV to avoid low counting statistics. Obtained ROIs were combined into a single AA VOI, which was used to extract the AA TAC.





Supplemental Figure 1: Typical example of processing steps required for obtaining an arterial input function. (A) Placement of a 1 cm diameter aorta ROI in a frame showing the first-pass of the activity through the ascending aorta and (B) a RV ROI in an earlier frame showing the first-pass of activity through the right-ventricle. Image-derived input data are obtained from resulting volumes of interest. (C) Processing of the blood sampler curve (red). Raw blood sampler data (red) are calibrated using the blood concentrations from manual arterial samples and flushes are removed. Using an image-derived input function (green), blood sampler data are calibrated and corrected for both delay and dispersion, resulting in a usable blood sampler input function (blue). (D) Typical example of plasma-to-blood ratios (red) and parent fractions (blue) as measured using arterial blood samples (circles). Using a sigmoid function, curves of plasma-to-blood ratio and parent fraction are obtained and both curves are applied to the blood sampler or image derived input function to obtain a plasma input function.



Supplemental Figure 2: Example of a mid-ventricular short-axis late uptake image (A), short-axis image fused with total volume of interest (B) and the regions of interest (C) used for regional analysis with each segment indicated by its own color.