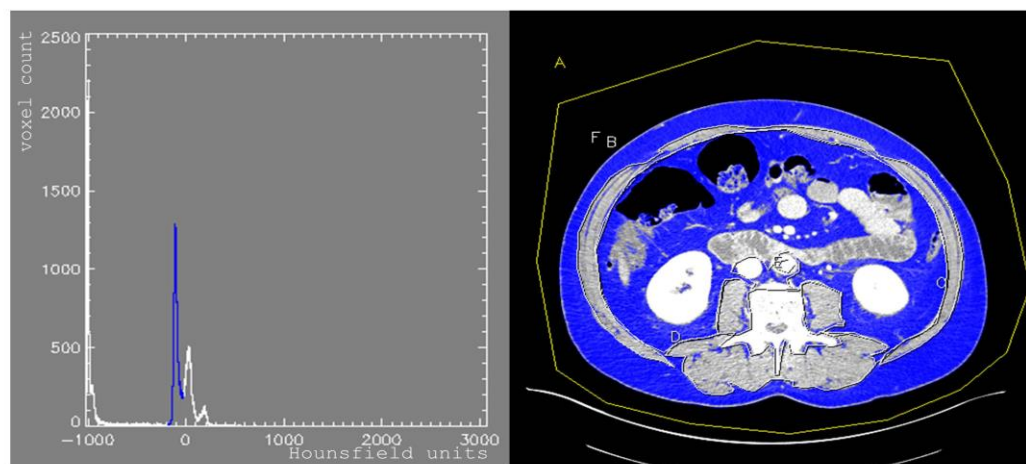
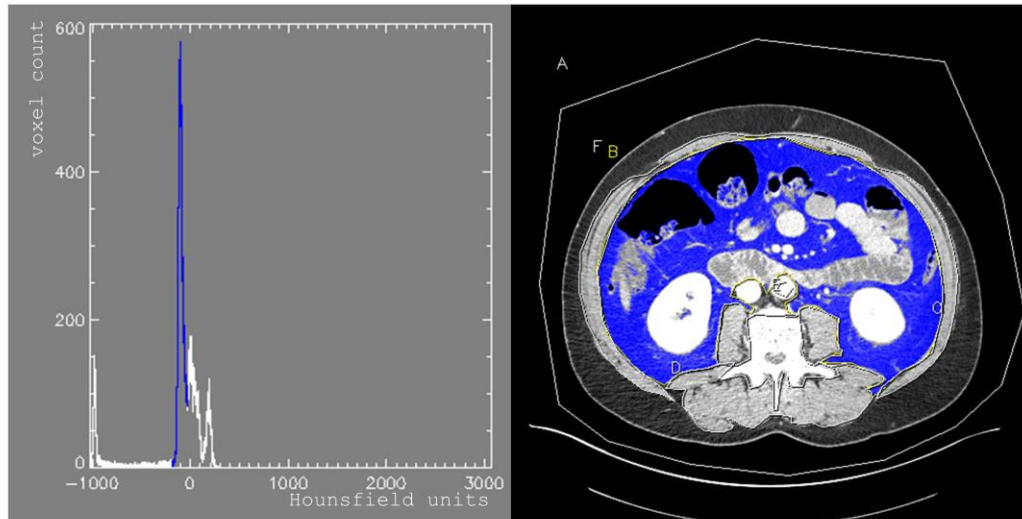


SUPPLEMENTARY MATERIAL

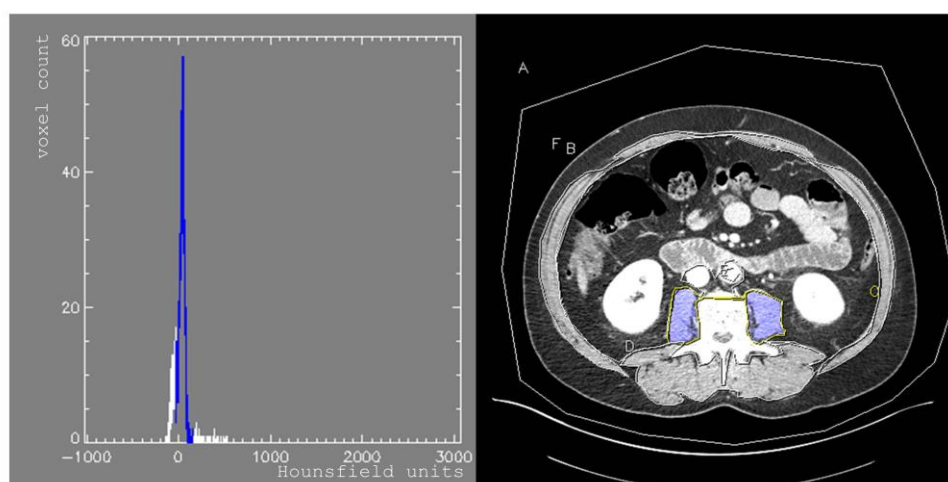
Supplementary Figure 1: Regions of interest (ROI) of the different body compartments analyzed with the DCMtool. The manually defined compartments were screened for voxels of defined Hounsfield units (HU), where -190 to -29 HU corresponded to fat and -30 and +150 to muscles. Thereafter, the area of the conforming voxels within the CT slice was used for the measurement of SAT, VAT and MM in cm². In each figure the ROI is marked in blue (CT slice on the right), while the other part (on the left) represents a histogram of the voxel count for the different HU, with the range of interest marked in blue. (A) represents the analyses of subcutaneous and visceral fat, (B) only the visceral fat compartment, (C-E) the analyses of muscular compartments. The mean muscle attenuation (MMA) was determined by the mean HU of the voxels counted within the three muscular compartments.



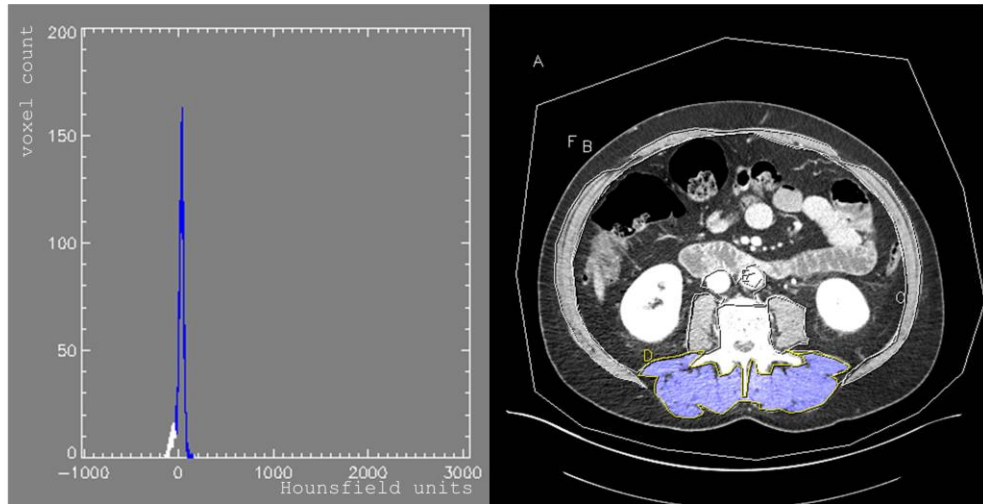
Supplementary Figure 1 A



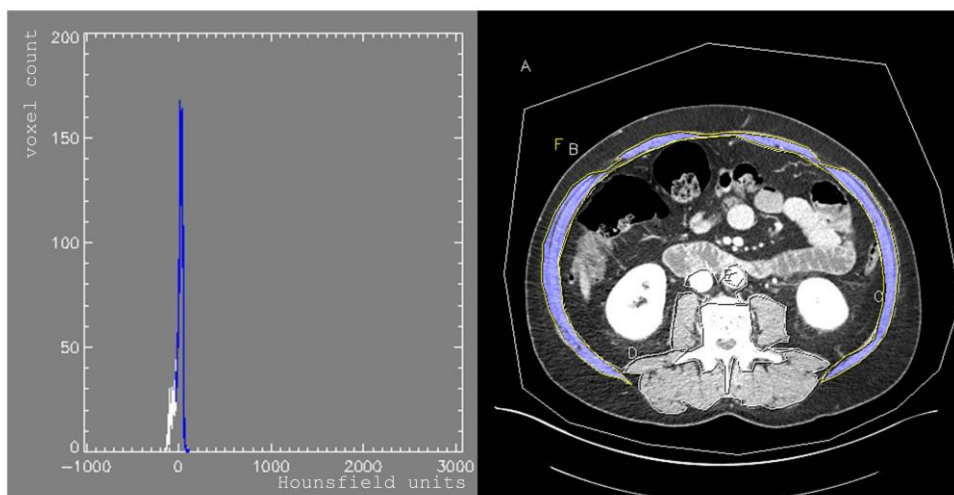
Supplementary Figure 1 B



Supplementary Figure 1 C

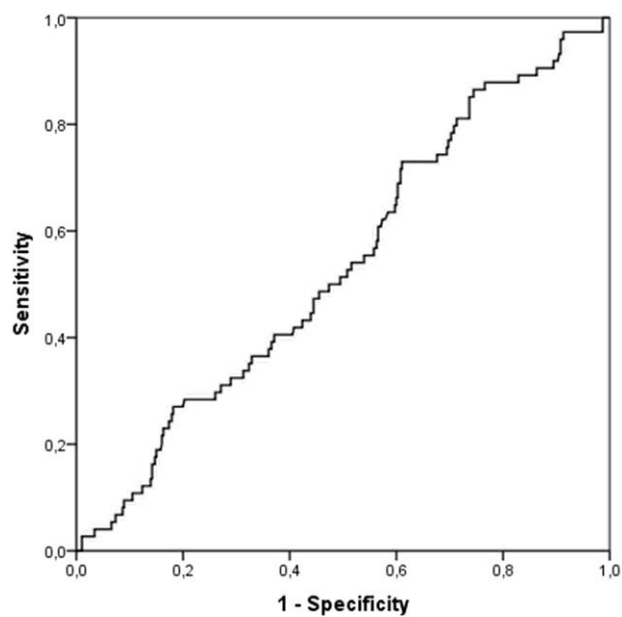


Supplementary Figure 1 D

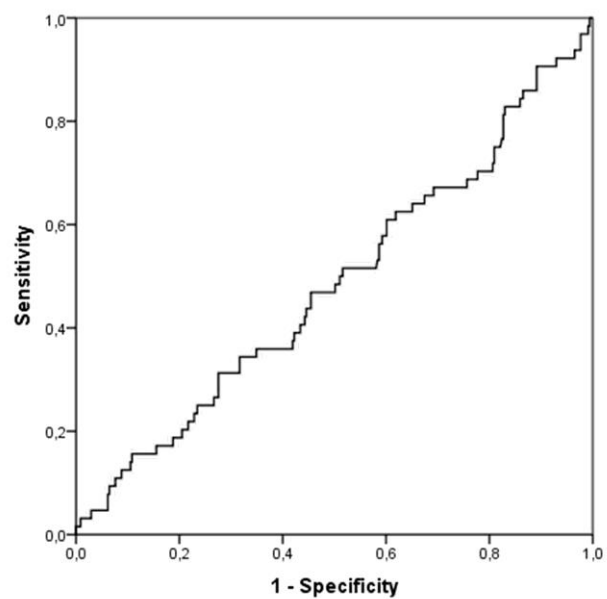


Supplementary Figure 1 E

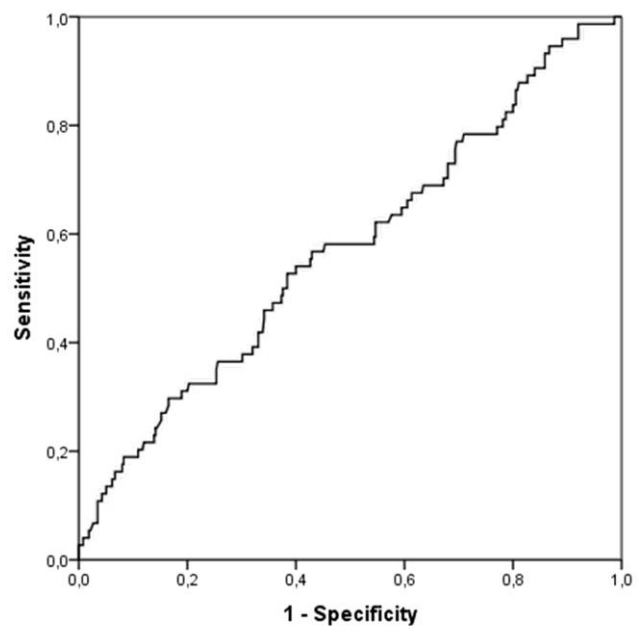
Supplementary Figure 2: Receiver Operating Characteristic (ROC) curves with corresponding Areas Under the Curves for CT-derived body composition and muscle parameters to predict severity of AP. (A) represents the ROC curve of VAT with an area under the curve of 0.536, (B) SAT with 0.484, (C) MM with 0.571, and (D) MMA with 0.424, and (E) VMR with 0.503. All areas under the curves were small and no cut-off value for severe AP could be retrieved (in all analysis a p-value of ≤ 0.05 was considered statistically significant).



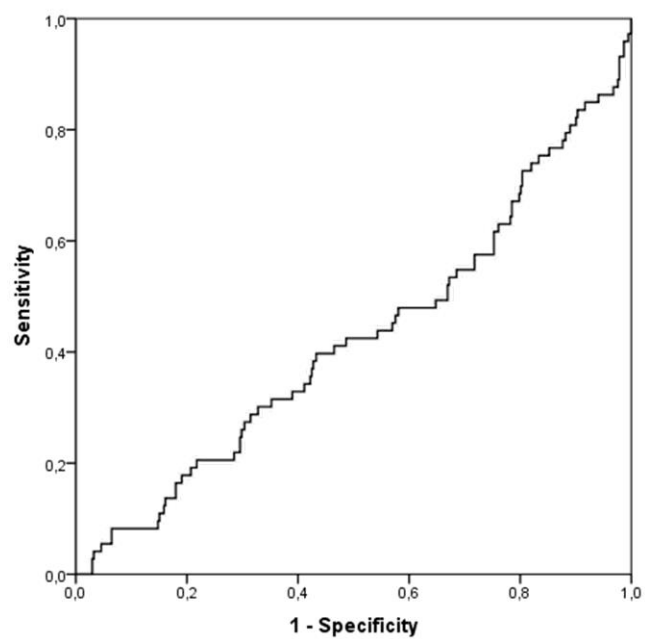
Supplementary Figure 2 A



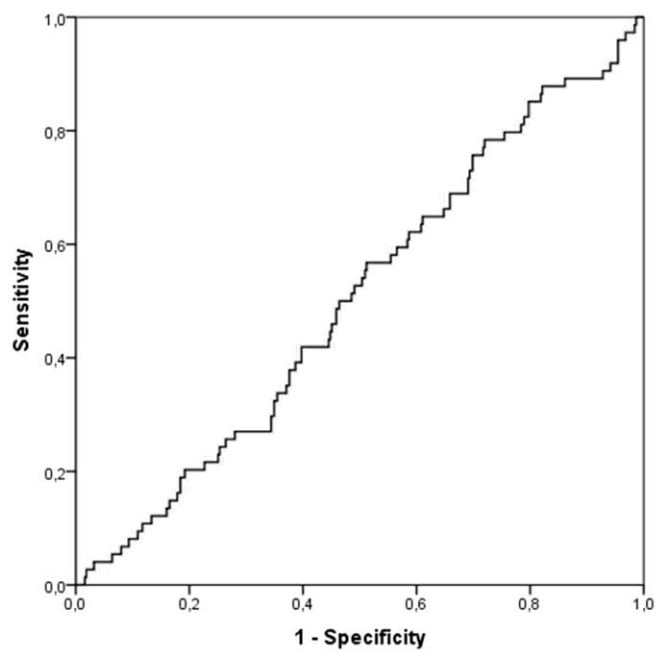
Supplementary Figure 2 B



Supplementary Figure 2 C



Supplementary Figure 2 D

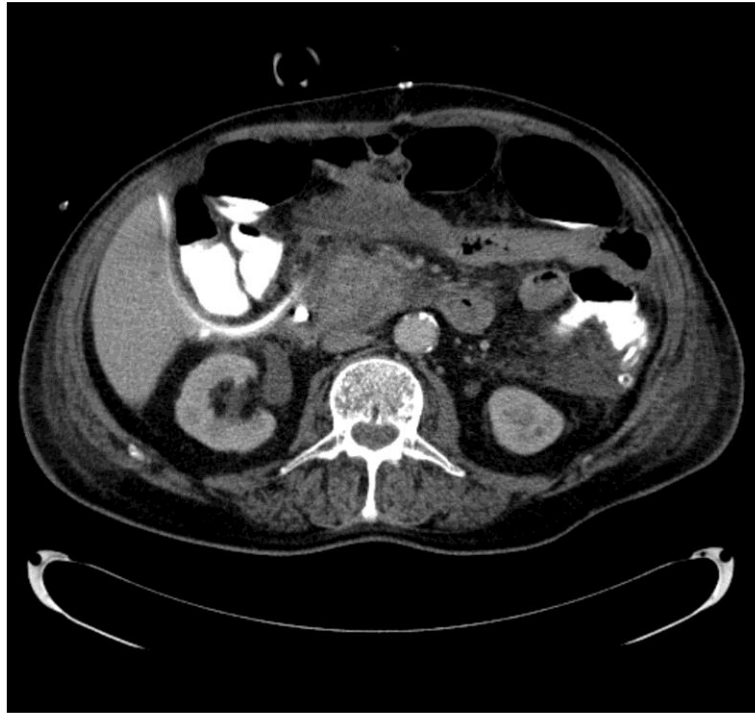


Supplementary Figure 2 E

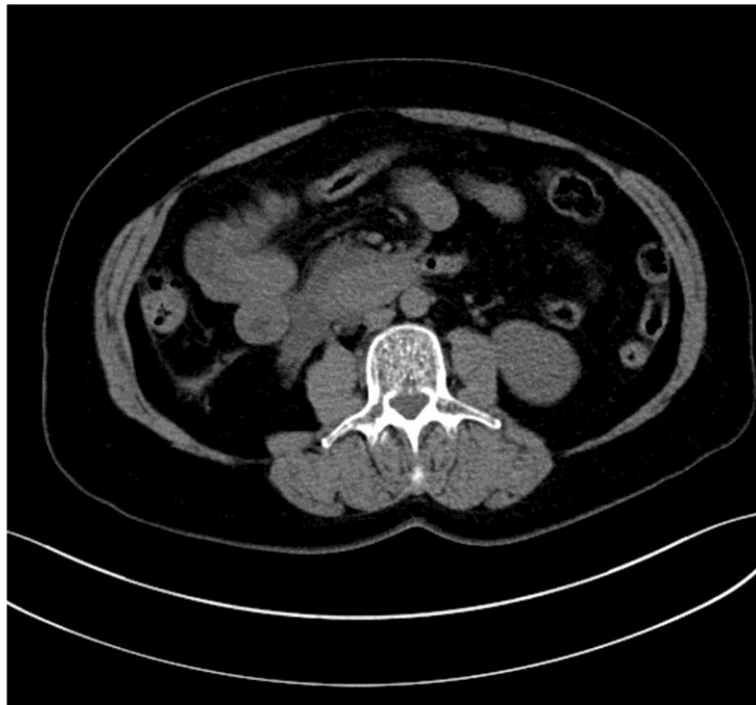
Supplementary Figure 3: Two examples of consecutive CTs demonstrating that VAT measurement is influenced by factors like the volume of the thoracic cavity, bowel distension and partly by fluid collections and as such by AP itself. In A and C the first CT of one patient is shown, whereas B and D are the consecutive CTs of these patients. VAT in A 190.3 cm² and C 129.8 cm², VAT in B 129.1 cm² and D 166.8 cm².



Supplementary Figure 3 A



Supplementary Figure 3 B



Supplementary Figure 3 C



Supplementary Figure 3 D

Supplementary Tables:

Supplementary Table 1: Comparison of measured body parameters in 41 consecutive CTs.

Severity	No. of cases	Timing of CT _{median} (Range)	VAT cm ² _{mean} (median)	SAT _{mean} (median)	MM _{mean} (median)	MMA _{mean} (median)	VMR _{mean} (median)
Mild	7	2 (1-3)	223.9 (219.8)	309.7 (318.6) *	112.6 (113.0)	23.2 (22.2)	2.11 (1.83) *
		12 (7-16)	231.6 (233.2)	288.0 (277.5) *	103.9 (98.29)	24.9 (24.7)	2.33 (1.88) *
Moderately severe	23	3 (1-7)	240.1 (228.8) *	240.8 (226.6)	131.2 (121.7) *	27.6 (29.6)	1.83 (1.66)
		12 (8-16)	220.5 (191.7) *	237.9 (235.0)	123.8 (121.2) *	28.0 (28.2)	1.76 (1.66)
Severe	11	2 (1-6)	231.1 (196.7)	218.4 (184.8)	157.9 (142.8)	27.6 (25.6)	1.58 (1.36)
		13 (9-17)	220 (178)	215.9 (220.1)	152.1 (144.1)	22.8 (22.0)	1.52 (1.29)
Overall	41	2 (1-6)	234.9 (220.9) *	246.6 (229.5)	135.2 (123.6) *	26.9 (29.0)	1.81 (1.72)
		12 (7-17)	222.3 (204.1) *	240.6 (235.0)	128.0 (121.2) *	26.3 (26.8)	1.79 (1.66)

To determine whether measured body parameters are altered during the course of AP we compared consecutive CTs where available. Timing of the CTs represents the day after admission when the CT has been performed. For the comparison the Wilcoxon T-test was applied. Overall VAT (p=0.0083) and MM (p=0.0003) was significantly altered by the disease course, whereas MMA did not differ (p=0.215). For VAT and MM a significant difference was observed for the moderately severe cases (p=0.0022; p=0.0288). SAT and VMR differed significantly in mild cases during the disease course (p=0.018 for SAT and VMR). * Significant differences (p<0.05).

Supplementary Table 2: Multivariate regression analysis of corporal parameters

Adjusted for age, gender, aetiology, time of CT (days)

	Multivariate aOR (95% CI)	p-value
VAT		
Highest tertile	2.220 (0.941 – 5.238)	0.069
Mid tertile	1.619 (0.764 – 3.428)	0.208
Lowest tertile	1 (REF)	
SAT		
Highest tertile	1.077 (0.530 – 2.188)	0.826
Mid tertile	1.106 (0.451 – 2.711)	0.837
Lowest tertile	1 (REF)	
MM		
Highest tertile	1 (REF)	
Mid tertile	0.523 (0.193 – 1.008)	0.051
Lowest tertile	0.587 (0.291 – 1.092)	0.091
MMA		
Highest tertile	1 (REF)	
Mid tertile	1.056 (0.496 – 2.248)	0.887
Lowest tertile	3.245 (1.568 – 7.042)	0.013
VMR		
Highest tertile	1 (REF)	
Mid tertile	1.065 (0.540 – 2.10)	0.857
Lowest tertile	0.548 (0.229 – 1.313)	0.177