

Table S1 Patients without contrast agent

	Patient death	Patient survival	P	Intubation needed	No intubation	P	Intensive care unit necessary	No intensive care	P
COVID-19 Probability	0.49±0.46	0.83±0.34	0.078	0.97±0.04	0.78±0.37	0.702	0.81±0.36	0.78±0.38	0.865
LSS	7±6	6±4	0.869	14±5	5±3	<0.004*	8±5	5±3	<0.005*
Volume of opacity (mL)	847.59±1,098.13	595.13±542.22	0.985	1,982.72±717.46	522.62±480.51	<0.001*	1,095.89±712.32	371.95±373.21	<0.001*
Percentage of opacity (%)	23.06±29.98	17.34±16.33	0.985	58.45±22.56	14.97±13.69	<0.004*	30.94±21.34	11.07±11.18	<0.002*
Volume of high opacity (mL)	200.21±305.65	139.63±162.52	0.985	426.03±304.72	125.72± 154.40	<0.033*	271.9±218.35	79.58±111.96	<0.001*
Percentage of high opacity (%)	5.68±8.23	4.39±5.69	0.985	12.73±7.74	3.92±5.33	0.044*	8.14±7.21	2.61±4.07	<0.003*
HU total	-697.38±177.10	-677.40±98.23	0.646	-525.16±141.61	-691.31±97.02	0.805	-615.16±106.43	-714.31±92.23	<0.007*
HU of opacity	-538.15±121.38	-480.82±129.31	0.427	-479.48±111.91	-488.09±130.77	0.736	-423.00±125.06	-522.04±118.24	<0.005*

Data are presented as mean ± standard deviation. *, significant.

Table S2 Patients with contrast agent

	Patient death	Patient survival	P	Intubation needed	No intubation	P	Intensive care unit necessary	No intensive care	P
COVID-19 probability	0.98±0.02	0.80±0.40	0.731	0.74±0.41	0.87± 0.33	0.001*	0.77±0.39	0.90±0.30	0.211
LSS	14±3	7±4	0.001*	14±3	7±4	<0.001*	13±4	5±3	<0.001*
Volume of opacity (mL)	2,224.81±823.36	871.86±781.28	0.002*	2248.90±747.45	912.17±793.16	<0.001*	1941.77±947.98	639.62±432.82	<0.001*
Percentage of opacity (%)	58.02±12.25	20.46±19.11	0.001*	60.14±13.35	22.41±19.73	<0.001*	52.88±19.72	13.16±7.15	<0.001*
Volume of high opacity (mL)	427.43±238.68	160.41±174.60	0.011*	430.67±239.53	188.27±203.16	0.022*	415.42±234.98	94.72±72.03	<0.001*
Percentage of high opacity (%)	13.31±9.87	4.14±5.08	0.011*	13.13±8.47	5.51±7.89	0.022*	13.09±9.14	2.09±1.80	<0.001*
HU total	-534.21±98.07	-681.65±100.66	0.298	-525.35±105.83	-666.74±115.54	0.376	-528.54±100.40	-727.53±51.68	<0.001*
HU of opacity	-457.99± 147.64	-511.32±106.02	0.447	-464.95±113.89	-495.83±122.32	0.452	-439.31±124.23	-537.84±103.91	<0.023*

Data are presented as mean ± standard deviation. *, significant

Table S3 Lobe-specific analysis of COVID – 19 pneumonia

	COVID-19 overall	Patient died	Patient survival	Intubation	No intubation	ICU	No ICU
Left upper lobe							
Mean LSS $\pm$ SD	1 $\pm$ 1	2 $\pm$ 1	1 $\pm$ 1	4 $\pm$ 1	1 $\pm$ 1	2 $\pm$ 1	1 $\pm$ 1
Mean PO $\pm$ SD in %	23.64 $\pm$ 25.03	43.12 $\pm$ 30.08	18.39 $\pm$ 20.93	62.48 $\pm$ 14.86	16.61 $\pm$ 19.36	42.67 $\pm$ 24.99	9.82 $\pm$ 12.82
Mean PHO $\pm$ SD in %	4.83 $\pm$ 7.93	7.31 $\pm$ 9.26	4.00 $\pm$ 7.37	6.36 $\pm$ 3.45	4.33 $\pm$ 8.26	8.46 $\pm$ 8.69	2.04 $\pm$ 5.95
Left lower lobe							
Mean LSS $\pm$ SD	2 $\pm$ 1	2 $\pm$ 1	1 $\pm$ 1	3 $\pm$ 1	1 $\pm$ 1	2 $\pm$ 1	1 $\pm$ 1
Mean PO $\pm$ SD in %	26.69 $\pm$ 25.35	46.46 $\pm$ 26.83	21.32 $\pm$ 22.11	59.16 $\pm$ 17.96	20.63 $\pm$ 21.50	45.05 $\pm$ 24.92	13.24 $\pm$ 14.69
Mean PHO $\pm$ SD in %	8.75 $\pm$ 12.34	15.86 $\pm$ 14.87	6.70 $\pm$ 10.82	20.38 $\pm$ 16.76	6.46 $\pm$ 10.08	15.64 $\pm$ 14.18	3.55 $\pm$ 7.32
Right upper lobe							
Mean LSS $\pm$ SD	1 $\pm$ 1	2 $\pm$ 1	1 $\pm$ 1	3 $\pm$ 1	1 $\pm$ 1	2 $\pm$ 1	1 $\pm$ 1
Mean PO $\pm$ SD in %	23.28 $\pm$ 24.64	42.70 $\pm$ 27.96	18.14 $\pm$ 21.20	59.04 $\pm$ 16.69	16.83 $\pm$ 19.92	37.84 $\pm$ 27.13	12.56 $\pm$ 15.81
Mean PHO $\pm$ SD in %	4.89 $\pm$ 9.12	9.16 $\pm$ 15.20	3.64 $\pm$ 6.71	7.95 $\pm$ 5.07	4.13 $\pm$ 9.40	8.07 $\pm$ 11.43	2.39 $\pm$ 6.09
Right middle lobe							
Mean LSS $\pm$ SD	1 $\pm$ 1	2 $\pm$ 1	1 $\pm$ 1	3 $\pm$ 1	1 $\pm$ 1	2 $\pm$ 1	1 $\pm$ 1
Mean PO $\pm$ SD in %	18.08 $\pm$ 22.49	39.00 $\pm$ 29.36	12.95 $\pm$ 17.72	50.99 $\pm$ 21.37	12.42 $\pm$ 17.72	30.45 $\pm$ 24.94	9.30 $\pm$ 16.16
Mean PHO $\pm$ SD in %	2.68 $\pm$ 5.22	4.14 $\pm$ 3.32	2.27 $\pm$ 5.55	6.36 $\pm$ 6.31	2.02 $\pm$ 4.84	4.28 $\pm$ 4.90	1.51 $\pm$ 5.22
Right lower lobe							
Mean LSS $\pm$ SD	2 $\pm$ 1	2 $\pm$ 2	1 $\pm$ 1	3 $\pm$ 1	1 $\pm$ 1	2 $\pm$ 1	1 $\pm$ 1
Mean PO $\pm$ SD in %	26.94 $\pm$ 24.60	44.77 $\pm$ 33.68	22.17 $\pm$ 19.63	61.31 $\pm$ 24.73	20.21 $\pm$ 18.27	41.07 $\pm$ 27.74	16.12 $\pm$ 14.42
Mean PHO $\pm$ SD in %	8.58 $\pm$ 12.03	14.88 $\pm$ 15.68	6.67 $\pm$ 10.09	21.68 $\pm$ 18.41	5.83 $\pm$ 8.23	14.48 $\pm$ 15.44	3.84 $\pm$ 4.57

Table S4 Correlation of different parameters and laboratory values

	R	P
Cycle threshold value and days in hospital	0.288	0.019*
Cycle threshold value and days at intensive care unit	0.016	0.901
Cycle threshold value and days of intubation	0.028	0.824
Cycle threshold value and age	0.003	0.984
Cycle threshold value and Creatinkinase	0.133	0.325
Cycle threshold value and LDH	0.130	0.305
Cycle threshold value and AST	0.139	0.280
Cycle threshold value and ALT	0.040	0.753
Cycle threshold value and CRP	0.119	0.347
Cycle threshold value and Leukocysts	0.391	0.877
Cycle threshold value and Lymph	0.391	0.002*
Cycle threshold value and D-Dimere	0.161	0.214
Cycle threshold value and Ferritin	0.204	0.254
Cycle threshold value and Procalcitonin	0.304	0.19
Cycle threshold value and Interleukin	0.241	0.269
Cycle threshold value and Lactat	0.203	0.123
Cycle threshold value and Mean COVID-19 Probability	0.317	0.010*
Cycle threshold value and Mean LSS	0.183	0.142
Cycle threshold value and volume of opacity	0.096	0.443
Cycle threshold value and Mean Percantage of opacity	0.105	0.402
Cycle threshold value and volume of high opacity	−0.040	0.972
Cycle threshold value and Mean Percentage of high opacity	0.430	0.732
Cycle threshold value and Mean HU total	0.048	0.704
Cycle threshold value and Mean HU of opacity	−0.830	0.509
Lung volume (ml) and and CRP	0.076	0.550
Lung volume (ml) and leukocysts	0.089	0.435
Lung volume (ml) and lymphocysts	−0.031	0.812
Lung volume (ml) and D-Dimer	0.148	0.256
Lung volume (ml) and Ferritin	0.105	0.560
Lung volume (ml) and Procalcitonin	0.103	0.436
Lung volume (ml) and Interleukin 6	0.052	0.815
Lung volume (ml) and Lactat	0.361	0.005*
Volume of opacity (ml) and CRP	0.478	<0.001*
Volume of opacity (ml) and leukocysts	0.140	0.262
Volume of opacity (ml) and lymphocysts	−0.043	0.739
Volume of opacity (ml) and D-Dimer	0.532	<0.001*
Volume of opacity (ml) and Ferritin	0.185	0.303
Volume of opacity (ml) and Procalcitonin	0.293	0.024*
Volume of opacity (ml) and Interleukin 6	0.406	0.055
Volume of opacity (ml) and Lactat	0.307	0.018*
Percentage of opacity and CRP	0.470	<0.001*
Percentage of opacity and leukocysts	0.088	0.482
Percentage of opacity and lymphocysts	−0.099	0.442
Percentage of opacity and D-Dimer	0.380	0.003*
Percentage of opacity and Ferritin	0.175	0.330
Percentage of opacity and Procalcitonin	0.292	0.025*
Percentage of opacity and Interleukin 6	0.362	0.090
Percentage of opacity and Lactat	0.150	0.257
Volume of high opacity and CRP	0.619	<0.001*
Volume of high opacity and leukocysts	0.101	0.421
Volume of high opacity and lymphocysts	−0.159	0.212
Volume of high opacity and D-Dimer	0.186	0.151
Volume of high opacity and Ferritin	0.087	0.632
Volume of high opacity and Procalcitonin	0.444	<0.001*
Volume of high opacity and Interleukin 6	0.609	0.002*
Volume of high opacity and Lactat	−0.038	0.776
Percentage of high opacity and CRP	0.524	<0.001*
Percentage of high opacity and leukocytes	0.061	0.627
Percentage of high opacity and lymphocysts	−0.172	0.179
Percentage of high opacity and D-Dimer	0.128	0.326
Percentage of high opacity and Ferritin	0.121	0.503
Percentage of high opacity and Procalcitonin	0.326	0.012*
Percentage of high opacity and Interleukin 6	0.462	0.027*
Percentage of high opacity and Lactat	−0.077	0.562
Mean HU total and CRP	0.430	<0.001*
Mean HU total and leukocysts	−0.050	0.688
Mean HU total and lymphocysts	−0.100	0.434
Mean HU total and D-Dimer	0.115	0.376
Mean HU total and Ferritin	0.019	0.915
Mean HU total and Procalcitonin	0.254	0.052
Mean HU total and Interleukin 6	0.391	0.065
Mean HU total and Lactat	−0.127	0.336
Mean HU of opacity and CRP	0.430	<0.001*
Mean HU of opacity and leukocysts	−0.197	0.113
Mean HU of opacity and lmyphocysts	−0.157	0.220
Mean HU of opacity and D-Dimer	−0.147	0.258
Mean HU of opacity and Ferritin	−0.044	0.809
Mean HU of opacity and Procalcitonin	0.212	0.107
Mean HU of opacity and Interleukin 6	0.374	0.079
Mean HU of opacity and Lactat	−0.397	0.002*
Lung volume (ml) and days of intubation	−0.125	0.316
Lung volume (ml) and days in hospital	−0.014	0.911
Lung volume (ml) and days with intensive care medicine	−0.079	0.533
Lung volume (ml) and age	0.079	0.533
Volume of opacity (ml) and days of intubation	0.554	<0.001*
Volume of opacity (ml) and day in hospital	0.075	0.551
Volume of opacity (ml) and days with intensive care medicine	0.544	<0.001*
Volume of opacity (ml) nad age	0.088	0.487
Percentage of opacity and days of intubation	0.640	<0.001*
Percentage of opacity and days in hospital	0.142	0.254
Percentage of opacity and days with intensive care medicine	0.627	<0.001*
Percentage of opacity and age	−0.009	0.946
Volume of high opacity and days with intubation	0.542	<0.001*
Volume of high opacity and days in hospital	0.161	0.196
Volume of high opacity and days with intensive care medicine	0.562	<0.001*
Volume of high opacity and age	−0.024	0.847
Percentage of high and and days of intubation	0.522	0.001*
Percentage of high opacity and days in hospital	0.169	0.176
Percentage of high opacity and days with intensive care	0.521	<0.001*
Percentage of high opacity and age	−0.088	0.485
Mean HU total and days of intubation	0.522	<0.001*
Mean HU total and days in hospital	0.108	0.389
Mean HU total and days with intensive care medicine	0.536	<0.001*
Mean HU total and age	−0.065	0.605
Mean HU of opacity and days of intubation	0.164	0.189
Mean HU of opacity and days in hospital	0.046	0.712
Mean HU of opacity and days with intensive care medicine	0.230	0.065
Mean HU of opacity and age	−0.054	0.669

*, significant.