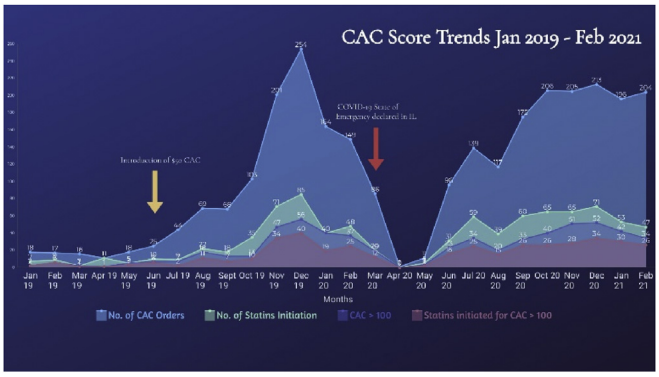
Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

was not affected by the COVID-19 pandemic (Fig 1- pink line). In fact, in February 2021, 76% of patients with CAC > 100 received a statin prescription. It is reassuring that despite the pandemic, the highest risk individuals based on CAC still received statin therapy.



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CORRELATION BETWEEN NON-CONTRAST CHEST CT FINDINGS AND CLINICAL OUTCOMES IN HOSPITALIZED PATIENTS WITH COVID-19 PNEUMONIA WITH POSITIVE PCR FOR SARS-COV-2 DURING THE FIRST WAVE

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Introduction: As the global Covid-19 pandemic continues, current efforts have shifted to determine early prognostic factors that may tailor the therapeutic options and subsequent mortality risk. Recent studies have shown a close relationship between cardiovascular (CV) risks and infected patients' evolution. Imaging biomarkers such as coronary artery calcium (CAC) score have an established role in long-term CV event risk stratification but might also provide prognostic information. The purpose of this study is to evaluate the relation between non-contrast chest CT findings and clinical outcomes on a representative sample of inpatients with Covid-19 during the first wave of the pandemic.
Methods: This IRB-approved clinical series included 326 cases with a mean age of 56.8 years +/-16.5, ranging from 17 to 93 years hospitalized between May 1 and June 31. CT images were retrospectively analyzed, and multiple CT variables registered, such as the RSNA-STR-ACR Consensus Statement pattern, presence of organizing pattern (OP), presence of CAC, total volume and average density of the pulmonary opacities (PO), lung injury extent, and average density of the liver, among others. On those with measurable CAC, Agatston Score (AS) from non-ECG gated chest CT was calculated using semi-automated software (SyngoVia). After a stepwise selection with a probability threshold of 10%, multivariable logistic regression was modeled to evaluate these variables' relationship, using patient outcomes as a dependent variable.
Results: Of the 326 cases, 103 had CAC, with a mean score of 486 UA (SD 965 range: 2 - 5648 UA). In multivariate regression, the findings related to a higher mortality odd were the absence of an OP, a high average density of PO, and CAC in the LM and the RCA (table). Mortality risk was directly associated with AS values; for every 100 AU increase, the risk of dying increased by 5% (p-value= 0.003). The discrimination capacity is 60%. Hepatic steatosis was related to a greater probability of climbing on the therapeutic scale (OR: 1.89 p: 0.043 95% CI: 1.02 - 3.52), but there was no relation with a greater probability of dying.
Conclusions: COVID-19 patients with CAC had a higher risk of dying, and the risk increased as AS value climb. The absence of OP, the higher average density of PO, and the presence of CAC in the LM and the RCA were associated with higher mortality risk.

Findings related to a higher probability of dead

	OR	p	)5% IC
Abscence of OP	4.44	0.03	1.12 - 17.18
Average density of PO (Per 100 HU)	1.8	0.01	1.19 - 2.48
RCA Calcium	4.7	0.01	1.34 - 16.68
LM Calcium	5.6	0.01	1.43 - 21.86

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INFLUENCE OF SLICE THICKNESS AND ITERATIVE RECONSTRUCTION ON CORONARY ARTERY CALCIFICATION QUANTIFICATION

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Introduction: Reconstruction parameters including iterative reconstruction algorithms and slice thickness influence the quantification of coronary calcification. Moreover, with modern scanner platforms and increasing use of iterative reconstruction algorithms, assessment of coronary calcium quantification will ultimately be affected. We sought to analyze the influence of slice thickness and iterative reconstruction on quantitative parameters of coronary calcification.
Methods: Consecutive patients referred for coronary CT angiography for suspected coronary artery disease were included in this analysis. All native CT data were acquired using a third-generation dual source CT system (Somatom Force, Siemens Healthineers, Forchheim, Germany). Besides the standard reconstruction (3.0 mm thickness), 5 additional reconstructions were rendered using 2 mm and 1 mm thickness as well as 3 mm, 2 mm and 1 mm thickness with iterative reconstruction (IR) level 2 (Admire®, Siemens Healthineers). Data sets were transferred to a dedicated workstation and calcium scoring was performed using commercially available software (Ziostation2, Ziosoft inc., Tokyo, Japan). All reconstructions were compared to the standard reconstruction of 3 mm without IR concerning Agatston score and calcium volume.
Results: 104 patients (624 reconstructions) were included (mean age 67±10 years, 62 males). Compared to standard 3 mm reconstructions, Agatston score and calcium volume showed a significant positive correlation using all other reconstruction parameters ($r \geq 0.96$, $p<0.00001$ for all). With decreasing slice thickness, median Agatston score was significantly higher compared to standard reconstruction (3 mm vs. 2 mm and 1 mm, $p< 0.0001$). With the use of iterative reconstruction level 2, a significant underestimation of Agatston score was observed compared to standard reconstruction (3 mm without IR, vs. 3 mm + IR, $p<0.0001$ and 1 mm + IR, $p=0.002$). Bland Altman analysis showed significant systematic overestimation of the Agatston score when thin slices were used for reconstruction (mean bias [95% limits of agreement]: -31 [-350 to 287] for 2 mm and mean bias -99 [-491 to 292] for 1 mm). Furthermore, significant underestimation of coronary calcification was noticed when IR was added (mean bias 80 AU [-235 to 296] for 3.0 mm + IR). This systematic underestimation was slightly compensated with thinner slices however with wide limits of agreement. Similar patterns were observed using the volume method.
Conclusions: Slice thickness and iterative reconstruction significantly influence the quantification of coronary calcification. Iterative reconstruction causes significant underestimation of calcified disease, this should be kept in consideration especially when assessing calcified disease burden using contrast enhanced data sets with iterative reconstruction.

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CORONARY ARTERY CALCIUM PROGRESSION AFTER CORONARY ARTERY BYPASS GRAFT SURGERY

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Introduction: Accelerated atherosclerosis is a well-established phenomenon after coronary artery bypass surgery (CABG). In this study we analyzed coronary artery calcium (CCS) progression after CABG.
Methods: We retrospectively measured the CCS Agatston score (AS), volume score (VS) and mass score (MS) of 39 patients before and after CABG. The annualized CCS change and annualized CCS percent change of each coronary artery, coronary artery segments proximal and distal to anastomosis were analyzed.
Results: Mean age at the time of the surgery was 59.8 ±8.5 years. Follow-up period between the first and second computed tomography scans was 6.7 ±2.8 (range, 1.1-12.8) years. Annualized CCS percent change (AS, VS and MS) of the coronary segments proximal-to-anastomosis did not differ from that of the non-grafted coronary arteries as follow: Segments proximal-to-anastomosis: median [Q1-Q3] 12.8 [5.0-37.4], 13.7 [6.1-41.1] and 14.9 [5.4- 53.7], LM 12.6 [7.4-43.8], 22.0 [8.1-44.4] and 18.2 [7.3-57.4], non-grafted LCx: 13.5 [4.4- 38.1],