P397 PROGNOSTIC VALUE OF CORONARY CALCIUM IN PATIENTS WITH COVID-19 AND SUSPECTED INTERSTITIAL PNEUMONIA: A CASE-CONTROL STUDY

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Background: Short-term prognosis of SARS-CoV2 infection is mainly conditioned by the extent and severity of COVID-19 interstitial pneumonia. Coexistence of cardiac disease is however important and independently associated with an adverse outcome. Coronary calcium (CAC), detected at the time of chest computed tomography, can be a useful prognostic tool, as suggested by some cohort studies.
Material and Methods: We performed a retrospective, multi-centre, case-control (1:2) study in 195 COVID-19 patients admitted from 01-03-2020 to 30-04-2020. Cases

were consecutive patients died within 30 days or admitted to the Intensive Care Units for invasive ventilation during the hospitalization (primary outcome measure). Controls were age- and sex-matched patients surviving until 30 days without need for invasive ventilation. For each case, we selected two controls, matched by age and sex dividing cases in age strata of 10 years, assuring within each age stratum twice the number of controls with an identical gender proportion. CAC estimation was performed with a with a semi-quantitative score (0 to 30) based on 10 segments and 4 degrees of severity of the calcification. Estimation of interstitial pneumonia, was similarly performed with a semi-quantitative score (from 0 to 20), based on 5 lobes and 5 degrees of severity of interstitial involvement. CT scans were acquired according to a standard protocol for non-cardio-synchronized chest CT, always on a multi-detector scanner with at least 16 layers.

Results: The mean CAC value in cases was significantly higher ($p = 0.001$) compared to controls: 5,52±1,38 vs 3,28±0,54 (mean value ± 95% CI). The percentage of cases with moderate-severe CAC was significantly higher ($p = 0.013$) compared to controls (41.5% vs 22.8%, OR 2.27 95% CI 1.20-4.29; primary end-point of the study). In multivariate analysis, independent predictors of outcome were (in descending order): interstitial pneumonia severity score (Wald 8.143, $p = 0.004$), CC score (Wald 5.569, $p = 0.018$), and the LDH value on admission (Wald 3.335, $p = 0.034$).

Conclusions: In our case-control study, the severity and extent of CAC is the main prognostic factor for the occurrence of adverse clinical outcome, beside the severity of interstitial pneumonia. These data suggest that a semi-quantitative estimation of CAC, feasible on any CT detector without the need of dedicated software, is clinically useful for the prognostic assessment of patients with COVID-19 interstitial pneumonia.