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.

ms). In the prospectively enrolled, GHD-enriched pediatric dataset, strong agreement was observed between core lab over-read and DNN-predicted QTc values (4 ± 16 ms; r = 0.76), as well as between core lab over-read and mECG DNN-derived QTc values (7 ± 28 ms; r =0.93). When applied to mECG tracings, a DNN-derived QTc value ≥ 500ms yielded an area under the curve, sensitivity, and specificity of 0.98, 86%, and 94%, respectively.
Conclusion: The AI/DNN accurately predicted the QTc of a standard 12-lead ECG or that derived from a smartphone enabled mobile device. This AI/DNN-based QTc meter may facilitate screening for potentially lethal QT prolongation in settings where standard 12-lead ECG evaluation is not accessible or is cost-prohibitive.

B-PO01-081

MACHINE LEARNING OF THE ELECTROCARDIOGRAM IDENTIFIES CARDIAC WALL MOTION ABNORMALITIES BEYOND THE Q WAVE

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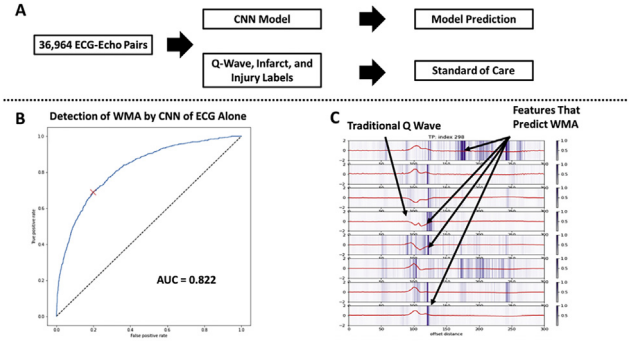
Background: Ventricular wall motion abnormalities (WMA) and desynchrony strongly predict sudden arrhythmic and cardiac death. Q-waves on the 12 lead ECG can aide localization and detection of WMA, but have modest predictive accuracy. We hypothesized that deep learning of the ECG can better identify WMA.
Objective: To develop a deep convolutional network using the ECG to accurately predict the presence of WMA on the echocardiogram gold standard.
Methods: We collected ECGs in 36,964 unique patients with echocardiography within 60 days. We identified WMA using a novel scalable approach of natural language processing (NLP) of clinical reports. We developed a convolutional neural network (CNN) matching input ECG digital waveforms to outputs of WMA on NLP-processed echo reports (Fig A). We used 70%, 10%, and 20% for training, validation, and testing cohorts, respectively. We then probed CNN to identify ECG regions that most contributed to identifying WMA.
Results: CNN of the ECG detected echocardiographic WMA with a C-statistic of 0.822 (CI 0.806 - 0.837). Conversely, Q waves provided c-statistic of 0.599 (CI: 0.577-0.621; p<0.0001; Fig B). CNN accuracy did not improve with inclusion of demographic data. We probed CNN and found that ECG regions outside the Q-wave, throughout the QRS and Twave (Fig C) were used to identify WMA.
Conclusion: Deep learning of the ECG outperforms traditional Q-wave analysis to detect WMA on echocardiography. These data suggest novel digital ECG signatures of normal and abnormal contraction. Further studies could be directed to reveal regional desynchrony or response to resynchronization therapy.



B-PO01-082

ARTIFICIAL INTELLIGENCE-ASSISTED QRS AMPLITUDE ANALYSIS OF THE PRESENTING ELECTROCARDIOGRAM PREDICTS MORTALITY IN COVID-19

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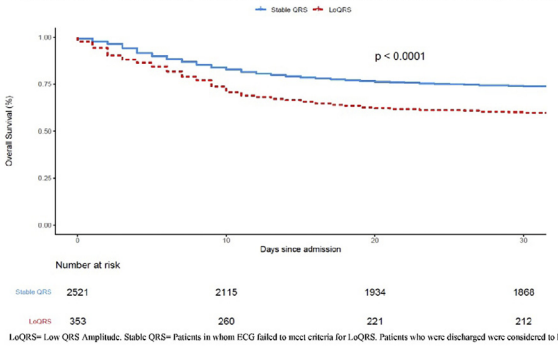
Background: Artificial Intelligence (AI) has shown promise in aug menting ECG analysis. We previously identified QRS amplitude dimi nution as a predictor of mortality in COVID-19 on follow-up ECG; but ECG data would be most useful clinically if predictive upon admission.
Objective: To assess whether QRS amplitude on the *admission* ECG predicts mortality in COVID-19 utilizing AI processing techniques.
Methods: We performed a retrospective analysis of patients admitted with laboratory confirmed SARS-CoV-2 between March 5 and July 7, 2020 (n=4,709). Patients were excluded if the ECG was not acquired within 72 hrs of admission (n=1,692). Low QRS Amplitude (LoQRS) was defined by a composite of QRS amplitude <5mm in the limb leads AND/OR <10mm in the precordial leads (a composite of V1-V3 and V4-V6).
Results: Among 3,012 patients, 373 (14.1%) met criteria for LoQRS (**Figure**). Compared to patients *without* LoQRS, these patients had a higher risk of in-hospital mortality (17.4% vs. 10.6%, p<0.001), ICU admission (31.9% vs 22.2%, p<0.001), and mechanical ventilation (26.3% vs 17.5%). Low QRS amplitudes were noted in both limb and precordial leads. In multivariable models, LoQRS was independently associated with mortality (OR 1.55, 95% CI 1.2-2.00, p<0.001) as were age (OR 1.05, 95% CI 1.04-1.06), BMI (OR 1.02, 95% CI 1.01-1.03), and CKD (OR 1.49, 95% CI 1.06-2.12). LoQRS also independently predicted ICU admission (OR 1.7, 95% CI 1.32-2.18) and mechanical ventilation (OR 1.6, 95% CI 1.23-2.00).
Conclusion: QRS amplitude on the presenting ECG independently predicts mortality, ICU admission, and mechanical ventilation in hospitalized patients with COVID-19, and may allow initial risk stratification.

Figure. COVID-19 Survival by Presence of Low QRS Amplitude on Presenting Electrocardiogram



LoQRS= Low QRS Amplitude. Stable QRS= Patients in whom ECG failed to meet criteria for LoQRS. Patients who were discharged were considered to have survived.

B-PO01-083

DIETARY INFLAMMATORY POTENTIAL, INFLAMMATORY BIOMARKERS, AND THE RISK OF ATRIAL FIBRILLATION: THE ATHEROSCLEROSIS RISK IN COMMUNITIES STUDY

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Background: Inflammation has been implicated in the pathogenesis of atrial fibrillation (AF). A novel measure of dietary inflammatory potential, the empirical dietary inflammatory pattern