A591 - P wave indices in critically unwell patients with new-onset atrial fibrillation (noaf)

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Introduction:
Previous studies have demonstrated the potential of P wave characteristics to predict Atrial Fibrillation (AF). However, data on p-wave measurements in critically unwell patients are lacking. This study aimed to determine whether P wave indices in our sample diverged from previously established reference values in healthy subjects.

Methods:
Digital ECG recordings of 49 critically ill patients admitted to the Royal Liverpool University Hospital were collected from the Clinical Information System. 19 patients were excluded due to absent or inadequate data. ECGs of 30 patients were converted to images and analysed with a new technique in ImageJ to allow measurement of P wave indices. P wave indices included P wave axis, PR interval, mean, maximum and minimum durations, dispersion, and P wave terminal force in V1 (PTFV1). Results were compared to reference values described in previous studies [1-3].

Results:
Maximum P wave duration (137.4ms ± 19.6) and dispersion (79.5ms ± 16.5) were increased compared to reported values in the literature (103ms and 34ms, respectively) [1]. Mean PR interval (155.4ms ± 26.4) was also decreased [1]. Mean P wave duration (100.6ms ± 17.3) was greatly lower than values recorded in previous studies (66 (59, 72), 123 ± 12, 111.4 ± 14.7) [1,2,3]. Measurements in 6 patients demonstrated abnormal PTFV1 values of ≥4000µVms. Abnormal P wave axis was found in 5 patients. 1 patient displayed both abnormal PTFV1 and P wave axis.

Conclusion:
Our preliminary results demonstrate that mean maximum P wave duration, dispersion, and PR interval were altered in patients with NOAF compared to healthy subjects. 37% of patients had abnormalities in PTFV1 or P wave axis. Further research is warranted to investigate differences of p-wave characteristics in critically ill patients who do and those who do not develop NOAF.

References: