The AMPS Insider

An AMPS LLC Magazine

The AMPS Insider is a quarterly magazine dedicated to all AMPS' partners and customers.
Published by AMPS, it provides news and information about AMPS' products and initiatives.

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Executive Overview

Automatized quantitative electrocardiography from digitized paper electrocardiograms, Products News, AMPS People.

Editorial

We continue covering the AMPS tradition of research participation in this TAI issue, as we feature 1 new paper published this past quarter: *Automatized quantitative electrocardiography from digitized paper electrocardiograms: A new avenue for risk stratification in patients with Brugada syndrome*. The abstract follows.

Background. – Arrhythmic risk stratification is a major challenge in Brugada syndrome. Studies have evaluated risk stratification based on manually measured electrocardiogram (ECG) parameters at baseline and/or after drug challenge.

Aim. – To assess the predictive value of multiple ECG parameters measured automatically from digitized paper ECGs.

Methods. – During a prospective, multicentre cohort study that included patients with Brugada syndrome with type 1 ECG (spontaneously or drug-induced), paper ECGs were digitized and analyzed. Major events were sudden cardiac death, aborted cardiac arrest and appropriate implantable cardioverter-defibrillator (ICD) therapy in the ventricular fibrillation (VF) zone. The predictive value of clinical and ECG parameters was assessed using univariable and multivariable Cox models. Results. – ECGs from 301 patients (74% male, mean age 43.1 ± 13.3 years, mean follow-up 7.1 ± 5.6 years) were analyzed. Major events occurred in 6% of patients before diagnosis and 8% during follow-up. Two baseline ECG parameters were independently associated with major events: QRS prolongation in lead V1 > 113 ms (hazard ratio [HR] 3.49, 95% confidence interval [CI] 1.72–7.09; P < 0.001) and S duration on DI > 33.5 ms (HR 3.56, 95% CI 1.52–8.31; P < 0.01). In drug-induced patients, changes in the Tpeak-Tend interval on V2 were associated with major events (HR 4.69, 95% CI 1.21–18.17; P = 0.014).

Conclusion. – Paper ECG datasets could be used for automatic quantitative ECG measurements. We confirmed the association of previously described parameters with events and identified useful new parameters. Multi-parametric ECG quantification may be used to assess risk in patients with Brugada syndrome.

The full article can be found on the AMPS web site.

Products News

The team has made great progress, and we want to proudly acknowledge:

- The completion of the first official version of the AMPS Cloud Gateway, or **ACG v2.0.0** and initiation of v2.1.0 development. ACG v2 allows to merge and split continuous ECG recordings.
- The release of CER-S 4.6.1, 4.7.1, and 4.7.2, including minor bug fixes.
- The release of CER-S 4.8.0, including a new icons layout and minor tool modifications.
- A new version of CalECG 4.3.0, including API and command line usage improvements, and plug-ins, and library management.

AMPS People

Anita Ravera joined the AMPS team. She is finalizing her Biomedical Engineering studies at the University of Padua, a program allowing her to deepen her passion for scientific subjects while also fulfilling her interest in learning about biomedical instrumentation techniques and signal analysis. At AMPS she will be focusing on customers support and services. Welcome Anita!