Editorial

Surface Electrocardiogram Remains Alive in the XXI Century

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All around the globe, the surface electrocardiogram (ECG) remains one of the most frequently used diagnostic tools in clinical practice. It provides useful information to guide initial treatment (e.g. in the emergency), it contributes to the diagnosis of acute and chronic diseases, and it also allows establishment of the prognosis and response to treatment in a large and varied amount of clinical conditions [1].

The ECG is not only useful for the cardiologist, but also for the internist, the family medicine practitioner, the neurologist and the emergency medicine doctor; naming just a few of the health care providers that are daily associated with the responsibility of reading and interpreting ECGs. This is why, when Bentham Science Publishers offered me (AB) the opportunity to coordinate a special issue on electrocardiography, I did not hesitate to accept the challenge.

The first task was to create an editorial team of experts with experience in publishing on electrocardiography. In this regards I was able to enlist a fantastic group of collaborators, full of ideas and ready to work hard.

From Argentina, Prof. Dr. Pablo Chiale from the “Buenos Aires School of Electrocardiography” accepted the challenge immediately. Pablo has made major contributions to the specialty of electrocardiology over a wide variety of topics including the mechanisms and pharmacologic treatment of arrhythmias, arrhythmias and auto-immune conditions, cardiac memory and physiopathology of the Brugada syndrome [2, 3]. Pablo has published extensively, and the topics mentioned represent a mere fragment of his expansive portfolio.

As part of the team I wanted a “true educator”. To this end I was delighted that Prof. Dr. Martin Green from Canada kindly agreed to join us. Martin is considered one of the “fathers” of modern electrophysiology in Canada and his contributions to medical education are recognized nationally and internationally [4, 5]. I met Martin for the first time during one of his ECG workshops and his interactive way of teaching had a tremendous impact on me. He is currently leading a group of educators that are working on having Electrophysiology recognized as a sub-specialty by the Royal College of Physicians and Surgeons of Canada.

Finally, the group needed a younger and energetic participant but with vast experience in electrophysiology and ECG. Dr. Jane Caldwell from the UK joined the team and did a splendid job helping me to review the vast majority of the papers included in this special issue. Whilst Jane's initial research revolved around ventricular fibrillation and optical mapping [6], during her Clinical EP Fellowship here at Queen's, she was involved in several clinical research projects, completing all of them and getting many of them published in high impact factor journals [7]. Her skills in ECG interpretation are of the highest possible level with some of her contributions on this field are currently being cited by many investigators.

The next step was to create a list of topics where we felt a new piece would provide an important contribution to the current available literature. At the end of this process, we had a list of 12 lead authors who accepted the challenge, and worked very hard to give us these impressive manuscripts that you are about to enjoy.

The first paper belongs to Bayés de Luna and García-Niebla [8]. It is a timely review on the new methodologies to distinguish a Brugada ECG pattern from other clinical entities, which are usually less serious and require no or minimal intervention. The authors are world-wide leaders on this topic with recent publications that validated their algorithms. After reading this material, the reader will feel comfortable identifying a true Brugada ECG.

The following paper belongs to Dr. Chhabra and Dr. Spodick and reviews a “hot” topic in electrocardiology: Interatrial block [9]. This group has made major contributions to the understanding of this condition and this summary allows the reader to become familiarized with all the information that the surface P-wave can provide. The third manuscript was written by Prof. Chiale and is a masterpiece on cardiac memory [10]. This complex topic is often neglected with little available in the current literature. The author navigates through his personal experience and publications and delights us with previously unpublished images that I am sure will enhance everybody's collection. The next paper belongs to one of the “ECG masters of the World”; Prof. Dr. Marcelo Elizari again from the “Buenos Aires School of electrocardiography” and a direct disciple of Mauricio Rosenbaum. Along with him, Prof. Elizari was one of the first to describe “supernormality of conduction” [11]. Here, the author brings us a complete review on this complex topic, that I am sure it will become a cornerstone paper. The fifth manuscript was written by a young and highly productive Polish ECG researcher, Dr. Kukla. Piotr is a very talented cardiologist with a passion for electrocardiology. In this paper, Dr. Kukla describes, and beautifully illustrates, new ECG features that could help in the diagnosis of the rare congenital disease Andersen-Tawil Syndrome [12]. Next is a contribution from one of the leaders on ECG in ischemic conditions, Dr. Nikus from Finland. This author brought an international group of experts together to teach us the latest classification of acute coronary syndromes [13]. This is a fundamental piece, as several changes to the traditional way of classifying coronary syndromes have occurred, and we all need to be updated. The seventh paper is an amazing review on the value and role of the ECG in patients with arrhythmogenic right ventricular dysplasia (ARVD) [14]. Under the lead of Prof. Dr. Zhang from Philadelphia, USA, a group of experts on the topic bring us the best review that I could find on ARVD and ECG. Prof. Dr. Fontaine is a co-author of this paper and his contribution, as the discoverer of this condition, is priceless.

The next manuscript belongs to a young invasive EP doctor from Catalunya, Spain; Dr. Berruezo [15]. His extensive experience on identifying and treating ventricular arrhythmias that originate from the epicardium is clearly reflected in this amazing manuscript. We believe that this piece will help lots of physicians to recognize the epicardial origin of ventricular tachycardias and allow them to plan their preferred ablation approach. Prof. Dr. Bacharova from Slovakia is a world-wide authority in left ventricular hypertrophy and surface ECG. Her provocative manuscript is highly informative and will help us to understand how much information the surface ECG can provide [16]. Next, Dr. Vereckei from Hungary, explains in detail the algorithm to distinguish VT from SVT with aberrancy which is now famously known as the "Vereckei algorithm" [17]. The figures are self-explanatory and a real gem to understand how to clinically apply this useful approach. Dr. Das from Indianapolis, USA, is considered the father of ECG fragmentation as a predictor of arrhythmic events. His amazing review on the topic is one of the pearls of this special issue [18]. It will allow the reader to use the surface ECG to predict arrhythmic events in a large series of clinical conditions.

Finally, Prof. Dr. Postema, along with Prof. Dr. Wilde from the Netherlands, absolute masters in the art of measuring the QT interval, give us a great review on the value of the QT interval and the importance of measuring it appropriately [19]. This invaluable lesson will become, I am sure, one of the most downloaded manuscripts from this series.

We had a lot of joy imagining and creating this special issue for CCR. It was a major editorial effort that involved several members of Bentham. My special thanks to Nadia that helped us bringing this project to the finish line.

Medicine continues to evolve and new technologies became part of our daily practice. However, the ECG, a simple and inexpensive tool, is irreplaceable and as such we must continue to learn from the Masters. To this end this special issue is intended for all those that want to improve their ECG interpretation skills and to understand more on the mysteries of cardiac electricity.

We dedicate this volume to our students, residents and fellows; who are the true inspiration for our work.

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