

New Precordial Leads and Regional Vectocardiograms

Nuevas derivaciones precordiales y VCGS regionales

PEDRO BRUGADA¹

A few months ago, I received an invitation from cardiologist Dr. Alejandro Bermejo to preface his book *Lógica Electrocardiográfica... desde casi cero* (Electrocardiographic logic... from almost zero). My initial reaction was very simple: a new book on electrocardiography? What could be written again, more than a hundred years after the development of the technique? My reaction changed immediately upon reading the manuscript. Alexander had broken all known rules and was bringing to the world a work with a totally unprecedented construction that blends the most intimate of cellular electrophysiology with micro- and macroscopic anatomical pathology and surface electrocardiogram to create a didactic product like I had rarely seen. How could my foreword contribute to the success of his creativity? Clearly, I wanted to show my appreciation for his efforts and the results obtained. And the only thing I could think of was to compare his work with that of cooks and musicians. Without repeating myself, I believe that these comparisons also apply to the work carried out by Drs. Mc Loughlin and Di Diego that is published today in this issue of the Argentine Journal of Cardiology. (1)

The kitchen of any restaurant has a wide variety of ingredients, but they are not infinite. When grouped according to their origin, a few key categories remain: vegetables, meat, fish, fruits and dairy products. Curiously, and despite this limitation of ingredients, every year dozens, if not hundreds, of cookbooks appear worldwide. Books with new ideas on how to cook, present, and mix different ingredients to create something new. And the result is, in general, indeed a new cuisine sometimes as different as the “molecular” cuisine of the famous Catalan Ferrán Adrià of “El Bulli”, indisputably the Picasso of 20th and 21st century cuisine. Why, then, was I surprised by a new book on electrocardiography?

Things get worse with music. The ingredients are even scarcer than in the kitchen: just seven notes, and that is all. How do musicians manage to make us enjoy new songs every week? Well, in cooking as in music, it's all in the details. A tomato sauce can be spicy, sweet, salty, bitter or a combination of these flavors. A glass of milk with coffee has dozens of varieties: *macchiato*, *cappuccino*, *cortado*, Americano with milk, among many more varieties. In addition to the seven basic notes, music also incorporates flats and sharps, note duration and rhythm. This is how genius chefs and musicians surprise us with new recipes and songs every day.

This occurs consistently in any area of science. Creative researchers are always searching for and finding new details in normal or abnormal phenomena, details that contribute to scientific progress to improve the welfare of mankind. The combination of knowledge, curiosity and entrepreneurial spirit is what distinguishes the scientist who discovers from the scientist who spends his or her life repeating the experiments of others. Mc Loughlin and Di Diego are discoverers, as evidenced by the numerous publications on the field of electrocardiography. Again, they show us their expertise today with their study of the precordial bipolar leads. As they explain, while their use is not new, their interpretation is, especially when combined with regional vectocardiography. And as they also suggest, the current possibilities of computation and use of artificial intelligence allow for the integration of these leads into a standard ECG. As with cooking and music, the details that the authors present to us today will drive progress in electrocardiography. In modern cardiology, automatic interpretation of tracings is a universal fact. Although algorithmic interpretation of the electrocardiogram has very clear advantages, its introduction has resulted in a decline in the interest

REV ARGENT CARDIOL 2024;92:324-325. <http://dx.doi.org/10.7775/rac.v92.i5.20826>

SEE RELATED ARTICLE: Rev Argent Cardiol 2024;92:359-366. <http://dx.doi.org/10.7775/rac.v92.i5.20824>

Correspondence: Pedro Brugada. E-mail: pedro@brugada.org



<https://creativecommons.org/licenses/by-nc-sa/4.0/>

©Revista Argentina de Cardiología

¹ Professor of Cardiology, Free University of Brussels (VUB). Brussels, Belgium.

among new physicians in interpreting the tracings by themselves. Serge Barold (unpublished data) has clearly stated his great concern about the growing lack of interest in electrocardiography among resident physicians. Perhaps the article by Mc Loughlin and Di Diego will not raise the curiosity of all physicians, but it will be an important contribution when their leads are routinely incorporated into the automatic interpretation of the electrocardiogram. I encourage all

cardiologists in an educational role to present this article to their residents to stimulate interest in electrocardiography. I will certainly do so with my residents.

REFERENCES

1. Mc Loughlin MJ, Di Diego JM. New electrocardiographic leads and regional vectorcardiograms. *Rev Argent Cardiol* 2024;92:359-66. <http://dx.doi.org/10.7775/rac.v92.i5.20824>.