

LETTER TO THE EDITOR

<https://doi.org/10.1093/europace/euad048>

In memory of Francesco Furlanello: a great advocate for dedicated commitment to effective, up-to-date, and expert management of cardiac arrhythmias and sports cardiology

Professor Francesco Furlanello passed away in mid-January 2023, at the age of 93. He was born in the Veneto region of Italy, studied at the University of Padova, and graduated in Medicine in 1954. From the start, he was interested in electrocardiography and cardiac arrhythmias and one of his first scientific reports, in 1962, was focused on the changes in ventricular repolarization after prolonged pauses in atrial fibrillation.¹ He was deeply involved in cardiology practice and became Chief of Cardiology in one small town in Veneto before moving to Trento in 1973. At the Santa Chiara Hospital, he founded the Cardiology Division and Arrhythmia Centre of Trento which he directed until 1996. After his retirement, he continued to be active and had consultant appointments in Milan and Rome.

Since the beginning of his career, he has been involved in studying both common and rare arrhythmia disorders^{2,3} and he supported the introduction of His bundle recordings and programmed electrical stimulation in the practice of arrhythmia evaluation, at the same time as the landmark contributions in the field from Wellens, Puech, Coumel, Fontaine, Slama, Olsson, Josephson, Gallagher and other pioneers in the field.

He was strongly convinced that the study of arrhythmias and conduction disorders had to be developed as an important field of Cardiology, with highly relevant perspectives for improving risk stratification in patients and athletes, as well as for improving pharmacological and non-pharmacological treatments. At that time transmission of clinical and scientific knowledge from leading experts to cardiologists and researchers was an important issue, since the circulation of ideas and concepts was concentrated in leading journals and in international meetings attended by few experts. Francesco Furlanello in the early seventies had the great merit of understanding the absolute need for promoting education and the exchange of experiences in the field of arrhythmias and with an exceptional vision planned to promote expert meetings in Northern Italy. These meetings on 'The New Trends in Arrhythmias' started in a pioneering format in 1974, with 200 participants, and were then planned every two years, from 1974 in Val di Sole (Trento), and since 1978 to 2004 were held in Marilleva. The 'Marilleva meeting', usually planned at the end of January, became a very highly successful 'go to', highly attended and well-organized conference. These scientific conventions covered, overall, thirty years of landmark evolution, such as the introduction in practice of deductive electrophysiology, as well as of fulguration/ablation and of implantable cardioverter-defibrillators.

The meetings in Marilleva were unique in their organization and in the atmosphere that characterized the social and professional interactions among all the participants. After some hours in the morning dedicated to skiing, walking or other recreational activities, participants were involved in the scientific sessions, open to contributions from many emerging researchers in the field and with the simultaneous publication of the proceedings. Some 'hot topics', usually related to 'new frontiers' in diagnosis, risk stratification

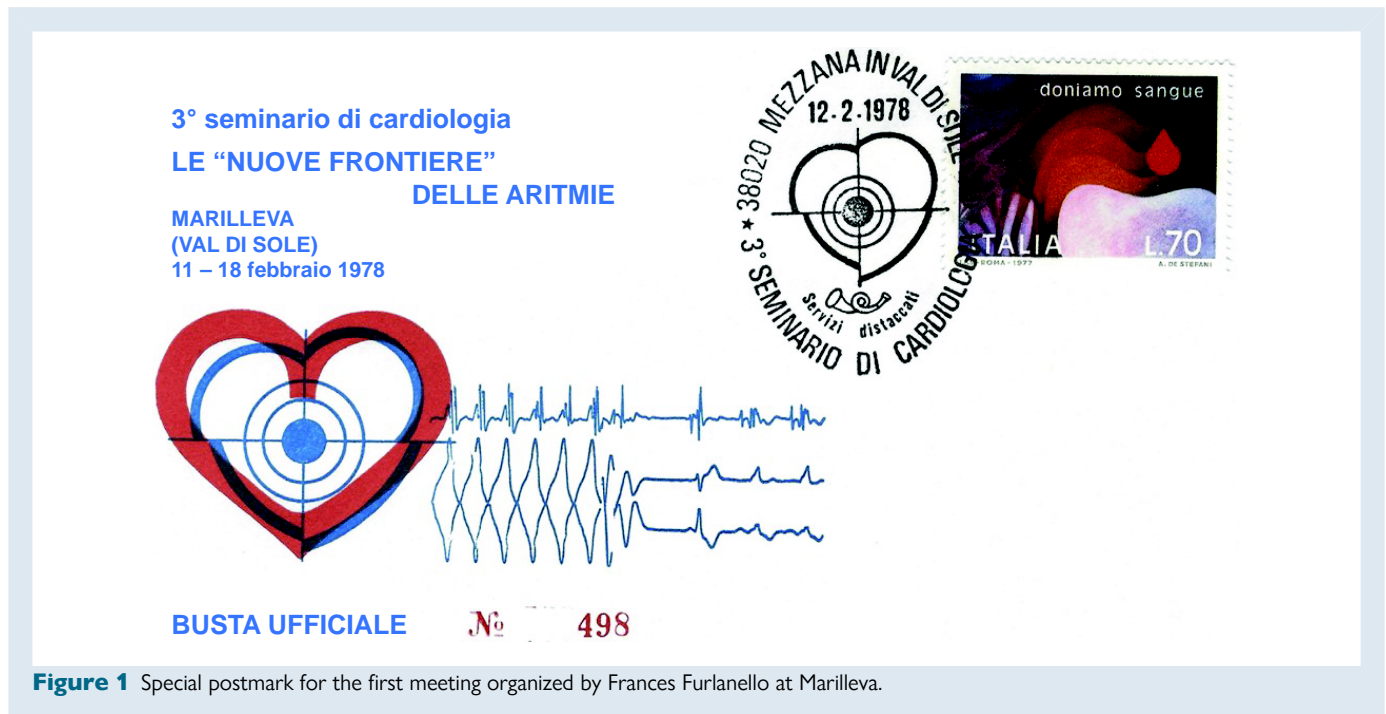


Figure 1 Special postmark for the first meeting organized by Frances Furlanello at Marilleva.



Figure 2 Some snapshots from the career of Francesco Furlanello. Top panel: on the left is the first meetings organized in Val di Sole (Trento) in 1976, on the right part of the audience participating in the 1992 edition of the Marilleva meeting (among others, Berndt Lüderitz, Lukas Kappenberger, Angelo Auricchio, Antonio Raviele, Helmut Klein and John Camm). The lower panel shows from left to right: Francesco Furlanello with Michael Mirowski in 1988, at the inauguration of the last edition in 2004 of the Marilleva meeting and at the National Congress of AIAC (Italian Association of Arrhythmology and Cardiac Pacing) receiving a career award from Giuseppe Boriani.

or treatment of arrhythmias, quite often stimulated open and passionate debates that continued in the following hours, at dinner. Indeed, what remains unforgettable about the 'Marilleva meeting' was the possibility for many 'ordinary' electrophysiologists being shoulder to shoulder all day long with the world's leading cardiac electrophysiology experts. This allowed many Italians and other European participants the opportunity to establish personal relationships with these top-level researchers working in European and North American institutions. In turn, came many research and clinical collaborations, training possibilities and friendships that lasted for many years. So important were these meetings that they were each celebrated with a special postmark! (Figure 1).

In Figure 2 are some snapshots illustrating the evolution of the meetings organized by Francesco Furlanello, from the first initiatives to the highly popular meetings held in Marilleva which were attended by all the leaders in the field, providing an extraordinary educational opportunity for many generations of cardiologists involved in arrhythmia management. This major achievement was recognized by the award given to Professor Furlanello by the Italian Association of Arrhythmology and Cardiac Stimulation (AIAC) in 2017.⁴

Francesco Furlanello and his group produced important contributions in the field of arrhythmias related to risk stratification, diagnosis and both pharmacological and non-pharmacological treatments.^{5,6} Additionally, Furlanello was a pioneer in studying arrhythmias in athletes,⁷ and he promoted the recognition of Sports Cardiology and Sports Arrhythmology as important fields, to be approached with modern and sophisticated tools in an attempt to prevent the dramatic occurrence of sudden death in athletes.^{8–10} His contributions to a better understanding of the important risks associated with the use of illicit drugs and doping were outstanding.^{11,12}

All the cardiologists involved in the fields of arrhythmia and sports cardiology are grateful to Francesco Furlanello for his generous and visionary dedication to research and education. However, his careful and detailed clinical approach on behalf of patients and athletes is a great example of

extraordinary care at a time when the rapid development and availability of technology threatened to reduce the crucial importance of genuine, spontaneous human interactions with colleagues and, most importantly, with patients. This is a very important perspective to be pursued and fuelled also for the novel developments that characterize the field of clinical cardiac electrophysiology and arrhythmia management.^{13–16}

Funding

None declared.

Conflict of interest: None declared.

References

- Furlanello F, Dal Palu C. [Changes in the ventricular repolarization phase after prolonged pauses in auricular fibrillation]. *Atti Soc Ital Cardiol* 1962;**22**:196–8.
- Furlanello F, Maccà F, Dal Palu C. Observation on a case of jervell and lange-neilsen syndrome in an adult. *Br Heart J* 1972;**34**:648–52.
- Piccolo E, Nava A, Furlanello F, Permutti B, Volta SD. Left atrial rhythm. Vectorcardiographic study and electrophysiologic critical evaluation. *Am Heart J* 1970;**80**:11–8.
- <https://aiac.it/aggiornamento/notizie-e-commenti/commenti/la-pre-historia-dellaritmologia-italiana/#js-top>. Accessed at <https://aiac.it/> on 20 January 2023.
- Disertori M, Inama G, Vergara G, Guarnerio M, Del Favero A, Furlanello F. Evidence of a reentry circuit in the common type of atrial flutter in man. *Circulation* 1983;**67**:434–40.
- Furlanello F, Inama G, Dal Forno P, Padrini R, Piovano D, Pessina AC. Amiodarone in the antiarrhythmic therapy. *Pharmacol Res Commun* 1983;**15**:881–900.
- Furlanello F, Bettini R, Cozzi F, Del Favero A, Disertori M, Vergara G et al. Ventricular arrhythmias and sudden death in athletes. *Ann N Y Acad Sci* 1984;**427**:253–79.
- Furlanello F, Bertoldi A, Dallago M, Galassi A, Fernando F, Biffi A et al. Atrial fibrillation in elite athletes. *J Cardiovasc Electrophysiol* 1998;**9**:S63–8.

9. Heidbuchel H, Arbelo E, D'Ascenzi F, Borjesson M, Boveda S, Castelletti S *et al.* Recommendations for participation in leisure-time physical activity and competitive sports of patients with arrhythmias and potentially arrhythmogenic conditions. Part 2: ventricular arrhythmias, channelopathies, and implantable defibrillators. *Europace* 2021;**23**:147–8.
10. Bohm P, Meyer T, Narayanan K, Schindler M, Weizman O, Beganton F *et al.* Sports-related sudden cardiac arrest in young adults. *Europace* 2022;**25**:627–33.
11. Furlanello F, Serdoz LV, Cappato R, De Ambroggi L. Illicit drugs and cardiac arrhythmias in athletes. *Eur J Cardiovasc Prev Rehabil* 2007;**14**:487–94.
12. Adami PE, Koutlianos N, Baggish A, Bermon S, Cavarretta E, Deligiannis A *et al.* Cardiovascular effects of doping substances, commonly prescribed medications and ergogenic aids in relation to sports: a position statement of the sport cardiology and exercise nucleus of the European association of preventive cardiology. *Eur J Prev Cardiol* 2022;**29**:559–75.
13. Barker J, Li X, Khavandi S, Koeckerling D, Mavilakandy A, Pepper C *et al.* Machine learning in sudden cardiac death risk prediction: a systematic review. *Europace* 2022;**24**:1777–87.
14. Boersma LV, El-Chami M, Steinwender C, Lambiase P, Murgatroyd F, Mela T *et al.* Practical considerations, indications, and future perspectives for leadless and extravascular cardiac implantable electronic devices: a position paper by EHRA/HRS/LAHRS/APHRS. *Europace* 2022;**24**:1691–708.
15. Heijman J, Hohnloser SH, Camm AJ. Antiarrhythmic drugs for atrial fibrillation: lessons from the past and opportunities for the future. *Europace* 2021;**23**:ii14–22.
16. Boersma L. New energy sources and technologies for atrial fibrillation catheter ablation. *Europace* 2022;**24**:ii44–51.

Giuseppe Boriani ^{1*} and **A. John Camm**²

¹Cardiology Division, Department of Biomedical, Metabolic and Neural Sciences, University of Modena and Reggio Emilia, Policlinico di Modena, via del Pozzo 71, 41125 Modena, Italy; and ²Clinical Academic Group, Molecular and Clinical Sciences Institute, St. George's University of London, Cranmer Terrace London SW17 0RE, UK

*Corresponding author. Tel: +39 0594225836, E-mail address: giuseppe.boriani@unimore.it