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PhD in Medical Sciences
2016-2017

INVITATION to the Public defence of

Giuseppe Ciconte

To obtain the academic degree of '**DOCTOR IN MEDICAL SCIENCES**'

Ablation of Atrial Fibrillation using the second-generation Cryoballoon.

Thursday 27 April 2017

Auditorium **Piet Brouwer**, 17:00

Faculty of Medicine and Pharmacy, Laarbeeklaan 103, 1090 Brussel

How to reach the campus Jette:

<http://www.vub.ac.be/english/infoabout/campuses>

Summary of the dissertation

The second-generation Cryoballoon (CB-Adv) is a safe and highly effective tool in achieving both acute PVI and favorable clinical outcome in the treatment of atrial fibrillation (AF). The incidence of spontaneous and adenosine-induced PV reconnection is very low occurring in 4% of initially isolated veins. Nadir temperature $< -51^{\circ}\text{C}$ and re-warming time > 28 seconds are significantly associated with successful ablation and absence of PV reconnection, suggesting that a prolonged waiting time and adenosine challenge might not be necessary in such cases. A single 3-minutes application per vein is highly effective in achieving acute PVI, determining AF freedom of 80.4% at 1-year follow-up, showing equal efficacy as compared to the conventional 4-minutes plus bonus freeze approach at 2-year follow-up. These findings question the need of further applications if PVI is already achieved during the first freeze. At 1-year follow-up, freedom from arrhythmic recurrences following PersAF ablation using the CB-Adv is 60% after the index procedure, demonstrating similar outcome as compared to conventional point-by-point RFCA. The incidence of late PV reconnection is very low following CB-Adv ablation as compared with CF catheter ablation. Faster time to isolation and achievement of -40°C within 60 seconds independently predicted durable PVI. In addition, 60 seconds cut-off for time to PVI indicates persistent isolation with 96.4% NPV. These parameters may be a marker of an effective ablation and could also guide the operator whether to perform further applications in order to ensure a long-lasting PVI. The future research in this field will focus on the adequate duration and the total number of cryo-applications necessary to achieve and maintain a favourable clinical outcome and to minimize the risk of complications.

Curriculum Vitae

Giuseppe Ciconte was born on the 23rd May 1984 in Catanzaro, Italy. In 2002 he started medical school where he obtained the Medical Doctor degree in 2008, summa cum laude and special mention of the board of examiners at Vita-Salute San Raffaele University in Milan.

In 2009 Dr Ciconte succeeds as first classed the Cardiology Residency Program entry examination at Vita-Salute San Raffaele University in Milan. In 2013 he moved to Belgium for two years, to perform a training Fellowship in Cardiac Electrophysiology and Pacing at the Heart Rhythm Management Centre of the Universitair Ziekenhuis Brussel - Vrije Universiteit Brussel directed by Prof. Pedro Brugada. In 2014, Dr Ciconte terminated the postgraduate training at the Cardiology residency program of the Vita Salute San Raffaele University directed by prof Paolo G. Camici, obtaining the Speciality Diploma with full honors. During the whole period of training, he was directly involved in clinical and research activities as well, focusing his scientific interest in multiple issues concerning: risk factors and progression of atrial fibrillation, risk stratification of symptomatic and asymptomatic Wolff-Parkinson-White Syndrome, transvenous lead extraction, Cryoballoon ablation and risk stratification in Brugada Syndrome.

From April 2015, his current assignment is Electrophysiologist assistant of the Arrhythmology Department at the IRCCS Policlinico San Donato, University of Milan directed by Prof. Carlo Pappone. He currently performs invasive electrophysiological procedures including conventional and complex ablation procedures as well as cardiac implantable electronic devices as first independent operator.

Dr Ciconte wrote 47 articles published in international peer-reviewed journals.