



**EHRA**  
European Heart  
Rhythm Association

# EHRA 2019

THE ANNUAL CONGRESS  
OF THE EUROPEAN HEART  
RHYTHM ASSOCIATION

**LISBON  
PORTUGAL**

**17-19  
MARCH**

*In conjunction with  
the 43rd Annual Meeting  
of the ESC Working Group  
on Cardiac Cellular Electrophysiology*

**FINAL PROGRAMME**

[www.escardio.org/EHRA-congress](http://www.escardio.org/EHRA-congress)

*programme as of 01/03/2019*

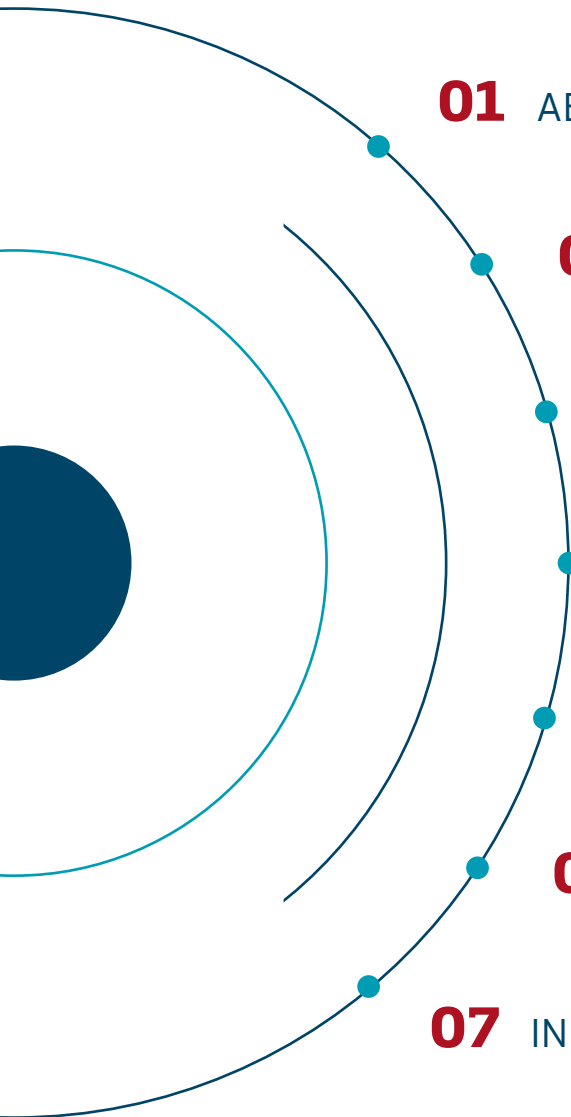


**ESC**

European Society  
of Cardiology

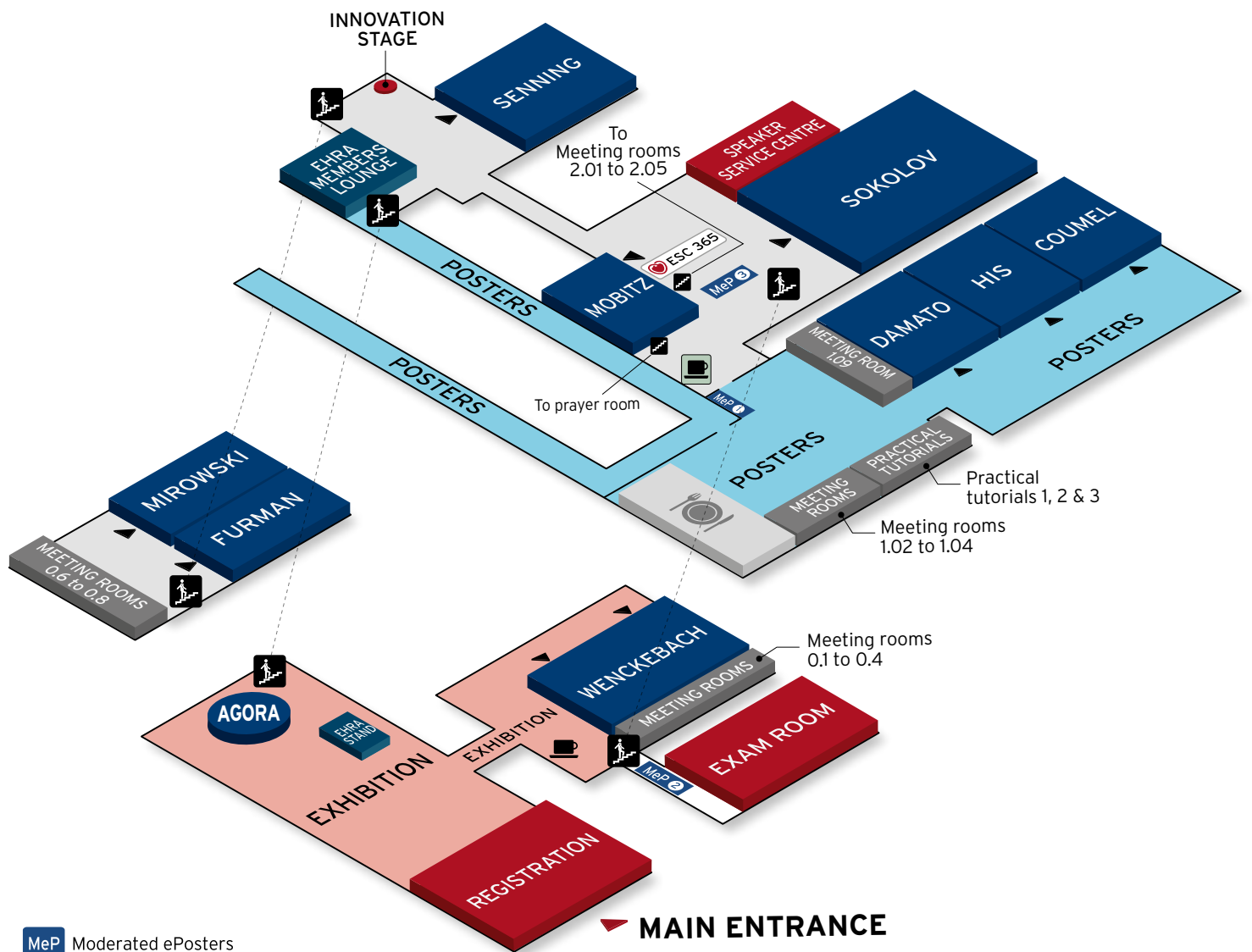
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# Building Overview



MeP Moderated ePosters

# Welcome Address

## Welcome to EHRA 2019, the second edition of our congress.

We have put together a scientific programme designed to provide attendees with the latest in science and education in the field of cardiac rhythm disorders.

During this three-day congress, a variety of formats including state of the art lectures, debates, abstract presentations, live cases and practical workshops will cover all aspects of arrhythmias, pacing and electrophysiology.

Delegates will have the opportunity to learn about the latest research, discover cutting-edge technology, and gain practical knowledge from world-renowned experts. A particular emphasis has been placed to bring content closer to daily practice.

Despite the plethora of e-learning modules and social media which have shaped the way we learn and interact, we strongly believe that in-person exchange between colleagues and peers will always remain a valuable and stimulating experience, which cannot be otherwise replaced.

Our congress wants to be just that: a great meeting place!

Thank you for being with us in Lisbon, Your presence will contribute to making this edition a great success!



**Prof. Haran Burri**

*EHRA Scientific Programme Chairperson 2018-2020*



**Prof. Katja Zeppenfeld**

*EHRA Scientific Programme Vice-Chairperson 2018-2020*

# EHRA 2019 Scientific Programme Committee

**Chair** Prof. Haran Burri (CH) | **Co Chair** Prof. Katja Zeppenfeld (NL)

## **PM, ICD & HOME MONITORING**

Dr. Mauro Biffi (IT)  
Dr. Francesco Zanon (IT)  
Prof. Christian Sticherling (CH)

## **CRT & LEAD EXTRACTION**

Prof. Angelo Auricchio (CH)  
Dr. Archana Rao (UK)  
Prof. Francisco Leyva (UK)

## **AF ABLATION**

Dr. Mattias Duytschaever (BE)  
Prof. José Merino (SP)  
Prof. Pascal Defaye (FR)  
Dr. Philipp Sommer (DE)

## **VT ABLATION**

Dr. Antonio Berruezo Sanchez (SP)  
Prof. Gerhard Hindricks (DE)  
Dr. Philippe Maury (FR)  
Dr. Philipp Sommer (DE)

## **SVT**

Prof. Andrea Sarkozy (BE)  
Dr. Fransisco Moscoso Costa (PT)

## **SCD**

Prof. Xavier Jouven (FR)

## **PEDIATRICS/GUCH**

Prof. Jan Janousek (CZ)

## **RHYTHM DIAGNOSTICS & SYNCOPÉ**

Dr. Daniel Scherr (AT)  
Dr. Natalia Antonio (PT)

## **CLINICAL AF, STROKE & ANTICOAGULATION**

Prof. Isabelle C. van Gelder (NL)  
Dr. Przemyslaw Mitkowski (PL)

## **INHERITED CARDIOPATHIES**

Prof. Pier Lambiase (UK)

## **CLINICAL RYTHMOLOGY**

Prof. Isabel Deisenhofer (DE)  
Prof. Mário Martins Oliveira (PT)  
Dr. Maxim Didenko (RU)

## **NURSING & AP**

Mrs Lynne Hiterbuchner (AT)

## **BASIC SCIENCE**

Dr. Daniel Pijnappels (NL)

### ***Acknowledgement***

*The EHRA 2019 Scientific Programme Committee takes the opportunity to thank all volunteers involved in the development of this year's edition of EHRA 2019.*

## About the European Heart Rhythm Association (EHRA)



As a branch of the European Society of Cardiology (ESC), EHRA ensures the dissemination of knowledge and standard setting, and provides continuous education, training and certification to physicians and allied professionals involved in the field of cardiac arrhythmias with a particular focus on Atrial Fibrillation (AF) and Electrophysiology (EP).

**EHRA is the leading network of European Cardiac Rhythm Management welcoming more than 3,000 members from across the globe.**

EHRA's mission is to improve the quality of life and reducing sudden cardiac death by limiting the impact of heart rhythm disturbances.

Stop by the EHRA/ESC stand C600 to learn more about our activities, or visit [www.escardio.org/EHRA](http://www.escardio.org/EHRA)



**EHRA**  
European Heart  
Rhythm Association

### Membership & Community

- > 3 levels of membership
- > Women in EP
- > Young EP
- > Fellows of EHRA

### Publications

- > *EP Europace* Journal, impact factor: 5231
- > The EHRA Book of Pacemaker, ICD, and CRT Troubleshooting
- > The EHRA Book of Interventional Electrophysiology

### Education and Research

- > EHRA annual Congress
- > Live courses
- > E-learning programme
- > Certification exams
- > Short training fellowships programmes

### Tools

- > Afibmatters.org - website for patients
- > EHRA Key Messages mobile app (including the key message on NOAC)
- > Key Message of the "2018 European Heart Rhythm Association Practical Guide on the use of non-vitamin K antagonist oral anticoagulants in patients with atrial fibrillation"

### About the European Society of Cardiology (ESC)

The ESC is the world's largest organisation of healthcare professionals dedicated to fighting heart disease. We help more than 105,000 cardiologists and allied professionals from 150 countries expand the boundaries of cardiovascular medicine so people can lead longer, healthier lives. The ESC publishes scientific journals, an array of textbooks and the latest Clinical Practice Guidelines. It provides continuing medical education through webinars and classroom courses, and hosts a variety of internationally renowned scientific congresses. More info on [www.escardio.org](http://www.escardio.org)





**EHRA**  
European Heart  
Rhythm Association

# JOIN THE **EHRA COMMUNITY**

**Become a member**

**The leading network  
of European cardiac  
rhythm management**

**See you at the  
EHRA/ESC Stand**

## **Get more**

Combine EHRA Silver Membership with ESC Professional Membership to access more discounts and learning opportunities.

[www.escardio.org/EHRA-membership](http://www.escardio.org/EHRA-membership)

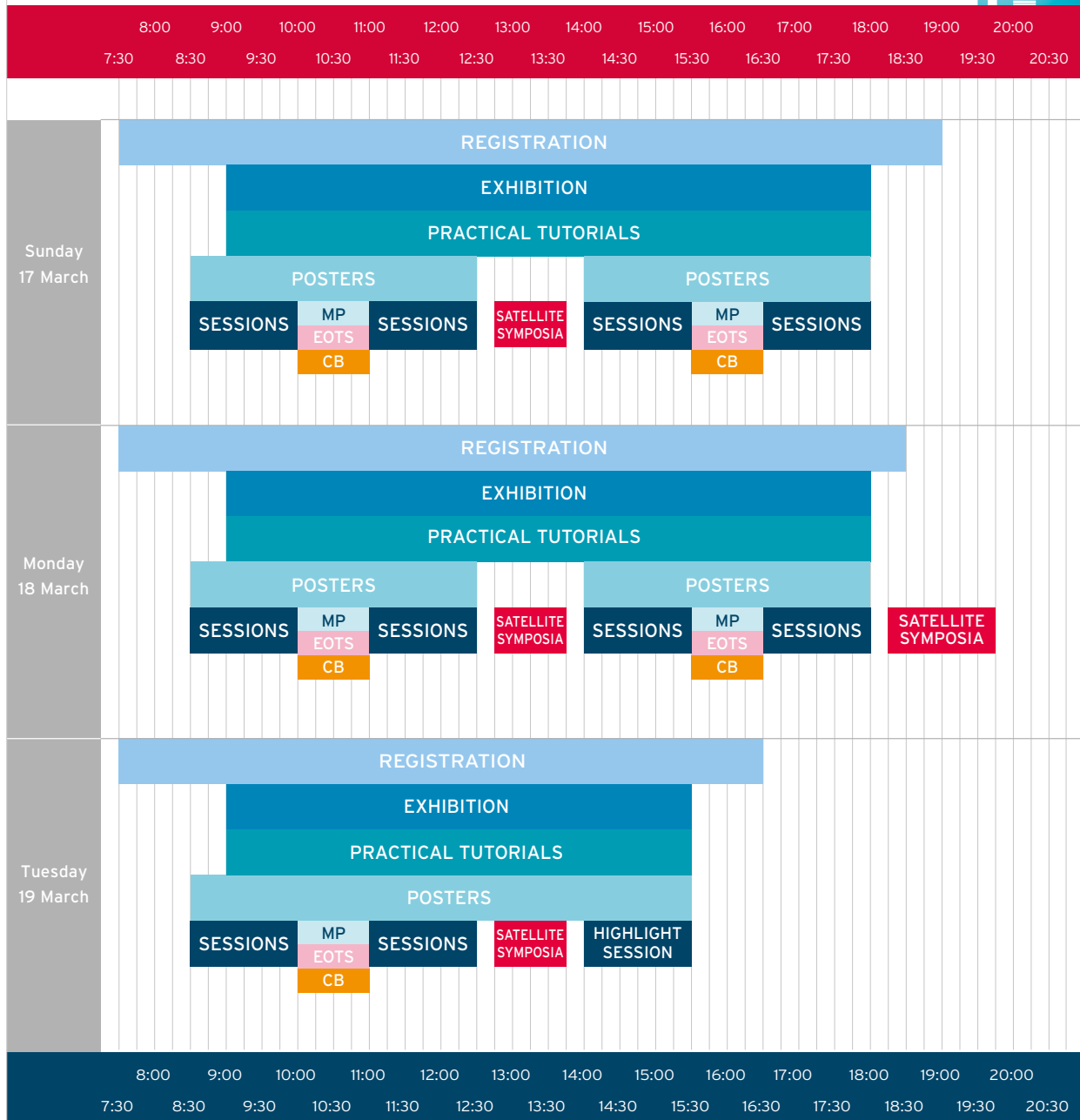


**ESC**

European Society  
of Cardiology

# Congress Timetable

## EHRA 2019



CB Coffee Break

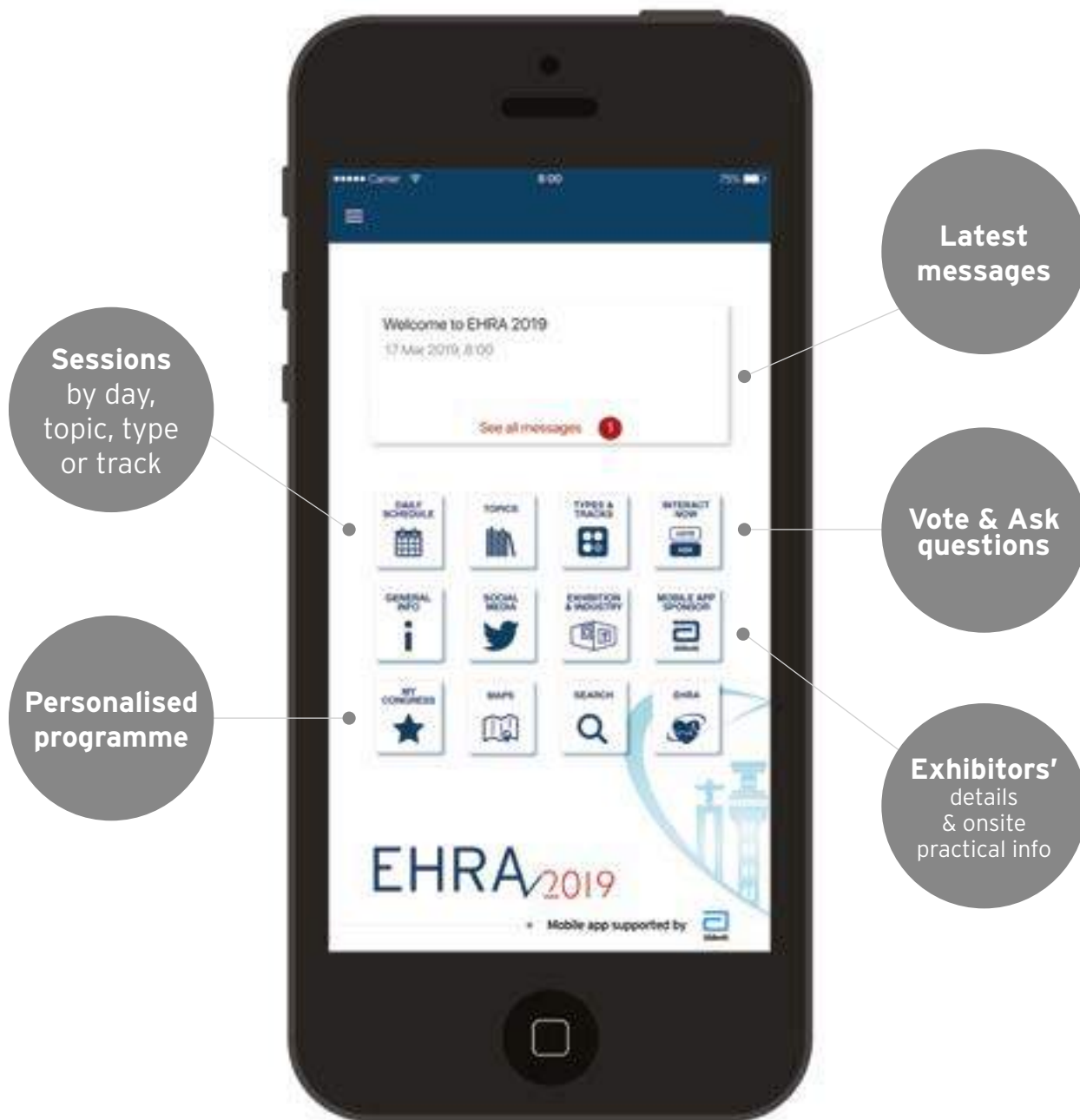
EOTS Experts on the Spot

MP Moderated Posters





# Download EHRA 2019 App



## Scientific Resources

Select the presentation of interest and click on:  
"View full abstract" or "Access slides & videos online"

**"ESC Congresses" or "EHRA" in  
App Store® / Google Play**

EHRA 2019 is now a part of ESC Congresses app: find all our congresses on one app



EHRA 2019 module is supported Abbott in the form of an educational grant



**Don't Miss  
Sessions**

## SUNDAY 17 MARCH

Welcome video: Sunday • 11:00 • ALL ROOMS

EHRA Meet my patient session • 15:30-16:15 • Room MOBITZ

Innovation stage • during the coffee breaks • LEVEL 1

Live Case sessions • 11:05-12:35 & 16:30-18:00 • Room MIROWSKI

EHRA ECG open • 16:30-18:00 • Room FURMAN

## MONDAY 18 MARCH

EHRA General Assembly • 15:35-16:25 • Room COUMEL

EHRA expert Consensus Papers • 08:00-10:00 • Room MOBITZ

Honorary lectures • 11:00-12:30 • Room SENNING

EHRA Meet my patient session • 10:00-10:45 • Room MOBITZ

Live Case sessions • 11:00-12:30 & 16:30-18:00 • Room MIROWSKI

Innovation stage • during the coffee break

EHRA Device tracings open • 14:00-15:30 • Room FURMAN

## TUESDAY 19 MARCH

EHRA expert Consensus Paper sessions • 08:00-10:00 • Room MOBITZ

Live Case sessions • 11:00-12:30 & 16:30-18:00 • Room MIROWSKI

EHRA EP Tracings open • 11:00-12:30 • Room FURMAN

Award Ceremony • 12:30-13:45 • AGORA

Congress Highlights • 14:00 - 15:30 • Room SOKOLOV

# Congress Information



## CERTIFICATES

For attendance - available from the registration desks as of Monday 18 March  
For presentation - available for abstract presenters at the poster assistance desk in the poster area



## INTERNET CONNECTION

Free wifi is available at the congress centre. However please note that connectivity is subject to the volume of users.

**Wifi name: ehra-congress**

**Wifi password: ehra-congress**



## INTERNET CORNER

Computer with internet access are located in the exhibition.



## INFO POINTS

For any other information please address the organisers at the registration.



## SECURITY

Please ensure your badge is visible at all times and comply with security controls that you may be subject to within the congress venue.



## EHRA MEMBERS' LOUNGE

The lounge is an exclusive area located near the exhibition where EHRA Members are invited to enjoy breaks and refreshments.

Become a member at the EHRA / ESC stand

NEW



# ESC 365

## All EHRA congress resources in one online library

Slide sets

Videos in replay

Abstracts & reports



### See for yourself

- Come by the EHRA / ESC Stand for a personal demonstration
- or visit [www.escardio.org/365](http://www.escardio.org/365)

**Enhanced access  
for EHRA Members**



Bristol-Myers Squibb



NOVARTIS

ESC 365 is supported by Bayer, Boehringer Ingelheim, Bristol-Myers Squibb and Pfizer Alliance and Novartis Pharma AG in the form of an educational grant.



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 European Society of Cardiology

# Industry at EHRA 2019



## Acknowledgement

The European Heart Rhythm Association expresses its sincere appreciation to all exhibitors, industry partners and sponsors mentioned below, who have contributed to the success of EHRA 2019 in a variety of ways and initiatives.

# Exhibition

The fight against cardiovascular disease is a shared mission. Our industry partners offer a rich educational programme to delegates throughout the congress. Discover the wide variety of activities from educational sessions to stand activities.

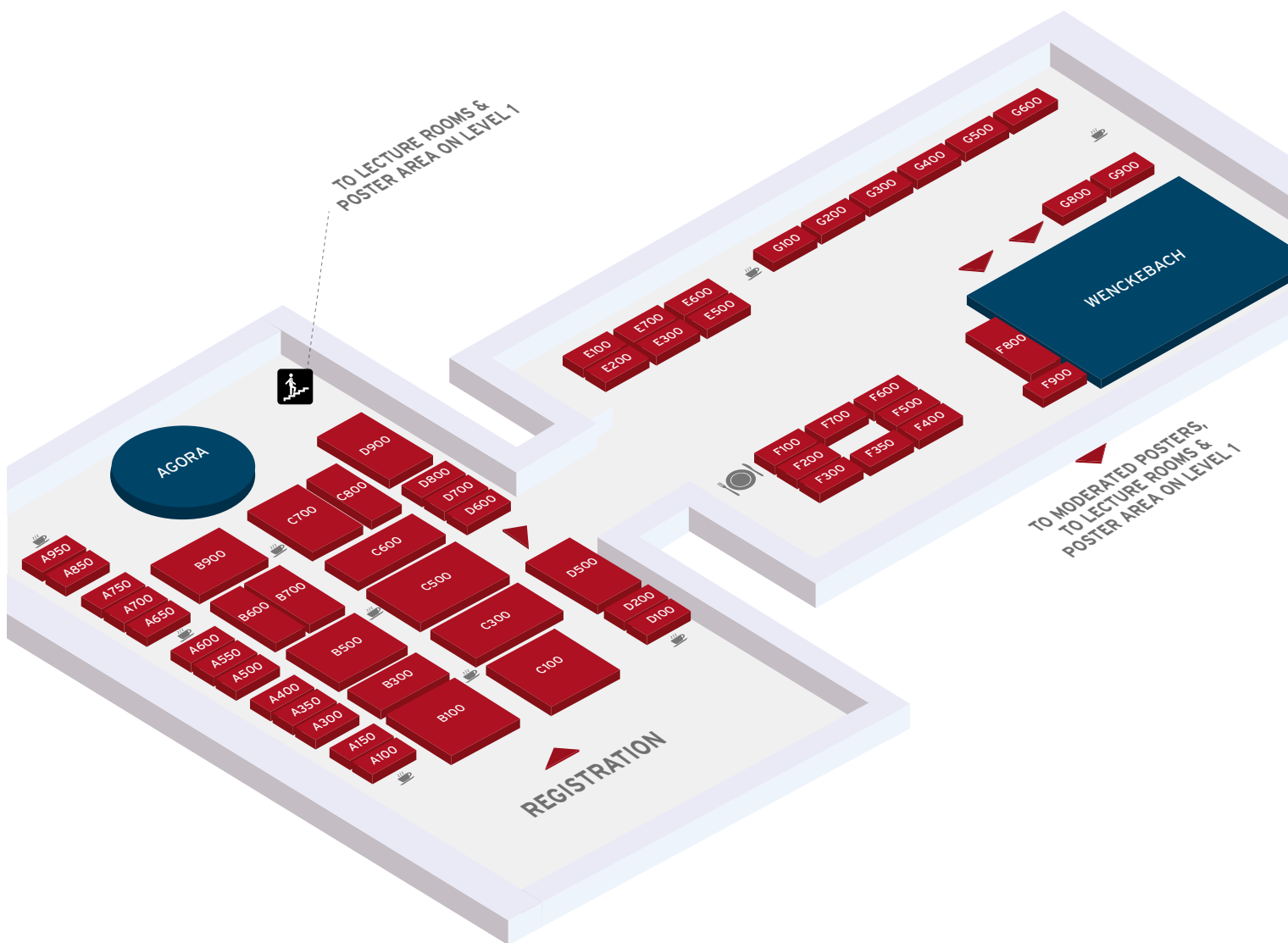
At the heart of the congress centre, the exhibition will be a central hub for scientific discussion and exchange to have the opportunity to interact with key industry experts on critical areas of development and research in cardiovascular products and therapies.

The exhibition will provide you with a unique opportunity to catch a glimpse of the continuous therapeutic and technological developments in the electrophysiological discipline.

## ACKNOWLEDGEMENTS - Exhibitors (As of 01/03/2019)

Abbott.....	<b>C500</b>	Implicity.....	<b>A500</b>
Access Point Technologies EP Inc. ....	<b>A950</b>	Impulse Dynamics.....	<b>D900</b>
Acutus Medical .....	<b>G300</b>	Imricor.....	<b>A600</b>
American College of Cardiology.....	<b>G600</b>	Latin American Heart Rhythm Society.....	<b>F700</b>
AngioDynamics. ....	<b>F300</b>	LindaCare.....	<b>F400</b>
Arrhythmia Alliance .....	<b>G750</b>	Maastricht Heart + Vascular Center.....	<b>G400</b>
Asia Pacific Heart Rhythm Society .....	<b>F500</b>	Medex Research Ltd.....	<b>E700</b>
Atricure Europe BV .....	<b>A400</b>	MEDICO SPA.....	<b>D100</b>
Bardy Diagnostics.....	<b>E500</b>	Medtronic.....	<b>C300</b>
Baylis Medical .....	<b>A300</b>	Merit Medical.....	<b>D200</b>
Biosense Webster, Johnson & Johnson Medical Devices Companies .....	<b>B500</b>	MicroPort CRM.....	<b>B300</b>
BIOTRONIK.....	<b>C100</b>	National Manufacturing Co., Inc.....	<b>A150</b>
Bittium.....	<b>F350</b>	Osycka AG.....	<b>A850</b>
BMS Pfizer Alliance .....	<b>B900</b>	Oxford University Press.....	<b>F900</b>
Boston Scientific International .....	<b>B100</b>	Philips.....	<b>C700</b>
CardioFocus, Inc.....	<b>D800</b>	Portola Pharmaceuticals.....	<b>G500</b>
Catheter Precision Inc.....	<b>E600</b>	Preventicus GmbH.....	<b>A650</b>
CIRCA Scientific, Inc.....	<b>A750</b>	Pro-PLUS SA.....	<b>G700</b>
Cook Medical.....	<b>E200</b>	Radcliffe Cardiology.....	<b>A350</b>
EBR Systems.....	<b>D700</b>	Renew health Ltd.....	<b>E100</b>
EP Solutions SA.....	<b>F200</b>	RYTHMO Avignon 2019 / ISCAT 2020 Congresses.....	<b>G900</b>
EPMap-System GmbH & Co. KG.....	<b>A700</b>	Schwarzer Cardiotek GmbH.....	<b>B600</b>
European Heart Rhythm Association.....	<b>C600</b>	Siemens Healthineers.....	<b>D500</b>
European Society of Cardiology.....	<b>C600</b>	Stereotaxis Inc.....	<b>B700</b>
FIAB SPA .....	<b>A100</b>	VITATRON.....	<b>G100</b>
Finapres Medical Systems.....	<b>E300</b>	WeHealth by Servier.....	<b>C800</b>
Galgo Medical. S.L.....	<b>F100</b>	Wisepress LTD.....	<b>F800</b>
Heart Rhythm Society .....	<b>F600</b>	ZENICOR MEDICAL SYSTEMS AB.....	<b>A550</b>
		ZOLL CMS GmbH.....	<b>D600</b>

# Exhibition Floor Plan



## EXHIBITION OPENING HOURS

Sunday 17 March 2019: 09:00 - 18:00

Monday 18 March 2019: 09:00 - 18:00

Tuesday 19 March 2019: 09:00 - 15:30



### **Satellite Symposia**

Delegates are cordially invited to attend a series of Satellite Symposia included in EHRA 2019 scientific programme.

These sessions will offer pertinent data on the latest scientific development in electrophysiology from the industry.

- Abbott
- Biosense Webster - Johnson & Johnson Institute
- BMS/Pfizer Alliance
- Boston Scientific
- Cook Medical
- Daiichi Sankyo, Europe
- Medtronic
- MicroPort CRM
- Philips
- Radcliffe Cardiology
- ZOLL

### **Satellite Symposia - Experts on the spot**

These sessions provide delegates with a further opportunity to question and exchange with topic experts in a concise and interactive format on the session content.

- Abbott
- BMS/Pfizer Alliance
- Medtronic

### **Practical Tutorials**

Practical Tutorials provides delegates with an opportunity to interact with clinical experts in their field, acquire new techniques, improve current knowledge and ask all they need to know on procedures essential to daily practice.

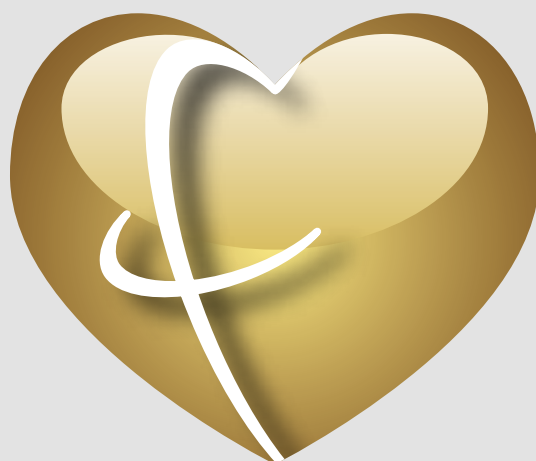
For details on Practical Tutorials activities, please visit Practical Tutorials rooms or the supporting company on their booths.

- Biosense Webster
- Boston Scientific

# Recognising excellence through the Fellowship of EHRA

For experienced professionals who have distinguished themselves individually in clinical, educational or other aspects of the cardiac rhythm field

Call for application  
1 August -  
15 October



**FEHRA**  
Fellow of EHRA

# • Practical Tutorials

## **Devices, Imaging, Clinical Practice**

Dedicated programmes from experts on the practical application of knowledge and skills

Sign up now in the Practical Tutorials room  
or at the sponsor's stand

**Places are limited**

**PRACTICAL TUTORIALS 1**

Sponsored by Biosense Webster

09:00 - 18:00 PRACTICAL TUTORIALS PRACTICAL TUTORIALS 1

**New technologies designed for arrhythmias treatment**

During these sessions we would like to collect physicians feedback on new technologies currently under development (each physician is asked to sign an non disclosure agreement before the session).

Appointment to these sessions will be available at Biosense Webster booth depending on availability.

**PRACTICAL TUTORIALS 2**

Sponsored by Boston Scientific

09:00 - 10:00 PRACTICAL TUTORIALS PRACTICAL TUTORIALS 2

**Ultra-high density mapping system foundations in our artificial heart hands-on workshop**

Chairperson(s): N. Hillier (Paris, FR); M. Alcantara (Altdorf, DE)

After a hands-on session utilizing the artificial heart, Physicians would be able to:

- Demonstrate proficiency on the manipulation of Orion catheter in the Righth Atrium (RA)
- Manipulate Orion to understand the proximity feature and when the system is capturing anatomical/electrical points
- Understand and apply the beat acceptance criteria concept in different diseases: Right Atrial Tachycardia (RAT), Cavotricuspid Isthmus (CTI) flutter, Post ablation CTI tachycardia
- Interpret Rhythmia maps for specific diseases: RAT, CTI flutter, Post ablation CTI tachycardia (i.e. blinded exercise)

10:15 - 11:00 PRACTICAL TUTORIALS PRACTICAL TUTORIALS 2

**Learning how to simplify and accelerate ultra-high-density maps analysis in our simulator hands-on workshop: a new breakthrough algorithm**

Chairperson(s): T.G. Oesterlein (Karlsruhe, DE); J. Castro (Linda-A-Velha, PT); V.M. Marshall (Munich, DE)

After a hands-on session utilizing Lumipoint in the simulators, Physicians would be able to:

- Understand best practices about the use of Lumipoint algorithm in real cases with a strong focus on Ventricular Tachycardia (VT)
- Simplify map analysis by utilizing appropriately the 7 tools provided by Lumipoint

11:15 - 12:00 PRACTICAL TUTORIALS PRACTICAL TUTORIALS 2

**Ultra-high-density mapping and ablation: best practices sharing with expert physicians**

Chairperson(s): R.Wakili (Munich, DE)

After the session and discussion, Physicians would be able to:

- Understand and discuss Rhythmia best practices by disease
- Utilize local impedance information for tissue assessment and lesion validation

12:15 - 12:40 PRACTICAL TUTORIALS PRACTICAL TUTORIALS 2

**Discuss your challenging ultra-high-density mapping cases with an experienced physician**

Chairperson(s): R. Wakili (Munich, DE)

After the session and discussion, Physicians would be able to:

- Discuss, Confirm and analyse Rhythmia map interpretation and ablation strategy in challenging cases with an expert physician

**PRACTICAL TUTORIALS 2 (CONTINUED)**

Sponsored by Boston Scientific

14:00 - 15:00 PRACTICAL TUTORIALS PRACTICAL TUTORIALS 2

**Ultra-high density mapping system foundations in our artificial heart hands-on workshop**

**Chairperson(s): N. Hillier (Paris, FR); M. Alcantara (Altdorf, DE)**

After a hands-on session utilizing the artificial heart, Physicians would be able to:

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- Interpret Rhythmia maps for specific diseases: RAT, CTI flutter, Post ablation CTI tachycardia (i.e. blinded exercise)

15:15 - 16:00 PRACTICAL TUTORIALS PRACTICAL TUTORIALS 2

**Learning how to simplify and accelerate ultra-high-density maps analysis in our simulator hands-on workshop: a new breakthrough algorithm**

**Chairperson(s): F. Maddaluno (Casoria, IT); A. Muehl (Lenzburg, CH); J. Castro (Linda-A-Velha, PT)**

After a hands-on session utilizing Lumipoint in the simulators, Physicians would be able to:

- Understand best practices about the use of Lumipoint algorithm in real cases with a strong focus on Ventricular Tachycardia (VT)
- Simplify map analysis by utilizing appropriately the 7 tools provided by Lumipoint

16:15 - 17:00 PRACTICAL TUTORIALS PRACTICAL TUTORIALS 2

**Ultra-high-density mapping and ablation: best practices sharing with expert physicians**

**Chairperson(s): T. Wong (London, GB)**

After the session and discussion, Physicians would be able to:

- Understand and discuss Rhythmia best practices by disease
- Utilize local impedance information for tissue assessment and lesion validation

17:15 - 17:40 PRACTICAL TUTORIALS PRACTICAL TUTORIALS 2

**Discuss your challenging ultra-high-density mapping cases with an experienced physician**

**Chairperson(s): T. Wong (London, GB)**

After the session and discussion, Physicians would be able to:

- Discuss, Confirm and analyse Rhythmia map interpretation and ablation strategy in challenging cases with an expert physician

**PRACTICAL TUTORIALS 3**

Sponsored by Boston Scientific

09:00 - 09:45 PRACTICAL TUTORIALS PRACTICAL TUTORIALS 3

**S-ICD system, how to manage your challenging cases?**

**Chairperson(s): S. Accinelli (Genova, IT); J. Winter (Dusseldorf, DE)**

After the session and discussion, Physicians would be able to:

- Understand S-ICD Implant Best Practices, including replacement and how to avoid air entrapment
- Discuss management of challenging cases (i.e. high/low BMI)

**PRACTICAL TUTORIALS 3 (CONTINUED)**

Sponsored by Boston Scientific

10:00 - 10:45 PRACTICAL TUTORIALS PRACTICAL TUTORIALS 3

**Anesthesia methods for S-ICD Implant: discuss the Serratus Plane Block (SPB) approach with expert physicians**

**Chairperson(s): J-B. Le Polain de Waroux (Brussels, BE)**

After the session and discussion, Physicians would be able to:

- Understand the most suitable anesthesia option for each patient with a focus on SPB Technique
- Discuss clinical benefits of each anesthesia method for S-ICD implants with a focus on SPB technique

11:00 - 11:45 PRACTICAL TUTORIALS PRACTICAL TUTORIALS 3

**Preliminary experience with novel multisensor algorithm, discussion with Heart Failure (HF) experts**

**Chairperson(s): P. Thakur (Arden Hills, US); L. Santini (Rome, IT)**

After the session and discussion, Physicians would be able to:

- Understand the value HeartLogic provides for early prediction of HF in concrete patients and how to manage alerts following the Alert-Assessment-Action (AAA) approach.
- Discuss possible workflows for patients and hospital staff in order to integrate HeartLogic in their clinical practice

12:00 - 12:45 PRACTICAL TUTORIALS PRACTICAL TUTORIALS 3

**Anesthesia methods for S-ICD Implant: discuss the Serratus Plane Block (SPB) approach with expert physicians**

**Chairperson(s): R. El Bouazzaoui (Montpellier, FR)**

After the session and discussion, Physicians would be able to:

- Understand the most suitable anesthesia option for each patient with a focus on SPB Technique
- Discuss clinical benefits of each anesthesia method for S-ICD implants with a focus on SPB technique

14:15 - 15:15 PRACTICAL TUTORIALS PRACTICAL TUTORIALS 3

**Hands-on Left Ventricle (LV) lead implant in our virtual reality simulators for implanters**

**Chairperson(s): O. Bazillais (Rueil-Malmaison, FR)**

After the session and discussion, Physicians would be able to:

- Understand step by step the LV lead implant procedure and adapt it to specific anatomies.
- Perform, with support of an expert Cardiac Resynchronization Therapy implanter, an LV lead implant procedure in a simple anatomy following the procedure steps learnt

15:30 - 16:15 PRACTICAL TUTORIALS PRACTICAL TUTORIALS 3

**S-ICD system, how to manage your challenging cases?**

Sponsored by Boston Scientific

**Chairperson(s): S. Accinelli (Genova, IT); J. Winter (Dusseldorf, DE)**

After the session and discussion, Physicians would be able to:

- Understand S-ICD Implant Best Practices, including replacement and how to avoid air entrapment
- Discuss management of challenging cases (i.e. high/low BMI)

16:30 - 17:30 PRACTICAL TUTORIALS PRACTICAL TUTORIALS 3

**Hands-on Left Ventricle (LV) lead implant in our virtual reality simulators for allied professionals**

Sponsored by Boston Scientific

**Chairperson(s): O. Bazillais (Rueil-Malmaison, FR)**

After the session and discussion, Allied Professionals would be able to:

- Understand step by step the LV lead implant procedure and adapt it to specific anatomies.
- Support LV lead implant procedures with a better understanding of the full procedure and challenges faced by implanters

**PRACTICAL TUTORIALS 1**

Sponsored by Biosense Webster

09:00 - 18:00

PRACTICAL TUTORIALS

PRACTICAL TUTORIALS 1

**New technologies designed for arrhythmias treatment**

During these sessions we would like to collect physicians feedback on new technologies currently under development (each physician is asked to sign a non disclosure agreement before the session).

Appointment to these sessions will be available at Biosense Webster booth depending on availability

**PRACTICAL TUTORIALS 2**

Sponsored by Boston Scientific

09:00 - 10:00

PRACTICAL TUTORIALS

PRACTICAL TUTORIALS 2

**Ultra-high density mapping system foundations in our artificial heart hands-on workshop**

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10:15 - 11:00

PRACTICAL TUTORIALS

PRACTICAL TUTORIALS 2

**Learning how to simplify and accelerate ultra-high-density maps analysis in our simulator hands-on workshop: a new breakthrough algorithm**

**Chairperson(s): F. Maddaluno (Casoria, IT); B. Holmes (Cheshire, UK)**

After a hands-on session utilizing Lumipoint in the simulators, Physicians would be able to:

- Understand best practices about the use of Lumipoint algorithm in real cases with a strong focus on Ventricular Tachycardia (VT)
- Simplify map analysis by utilizing appropriately the 7 tools provided by Lumipoint

11:15 - 12:00

PRACTICAL TUTORIALS

PRACTICAL TUTORIALS 2

**Ultra-high-density mapping and ablation: best practices sharing with expert physicians**

**Chairperson(s): F. Sacher (Bordeaux Pessac, FR)**

After the session and discussion, Physicians would be able to:

- Understand and discuss Rhythmia best practices by disease
- Utilize local impedance information for tissue assessment and lesion validation

12:15 - 12:40

PRACTICAL TUTORIALS

PRACTICAL TUTORIALS 2

**Discuss your challenging ultra-high-density mapping cases with an experienced physician**

**Chairperson(s): F. Sacher (Bordeaux Pessac, FR)**

After the session and discussion, Physicians would be able to:

- Discuss, Confirm and analyse Rhythmia map interpretation and ablation strategy in challenging cases with an expert physician

## PRACTICAL TUTORIALS 2 (CONTINUED)

Sponsored by Boston Scientific

14:00 - 15:00

PRACTICAL TUTORIALS

PRACTICAL TUTORIALS 2

**Ultra-high density mapping system foundations in our artificial heart hands-on workshop****Chairperson(s): N. Hillier (Paris, FR); M. Alcantara (Altdorf, DE)***After a hands-on session utilizing the artificial heart, Physicians would be able to:*

- Demonstrate proficiency on the manipulation of Orion catheter in the Right Atrium (RA)
- Manipulate Orion to understand the proximity feature and when the system is capturing anatomical/electrical points
- Understand and apply the beat acceptance criteria concept in different diseases: Right Atrial Tachycardia (RAT), Cavotricuspid Isthmus (CTI) flutter, Post ablation CTI tachycardia
- Interpret Rhythmia maps for specific diseases: RAT, CTI flutter, Post ablation CTI tachycardia (i.e. blinded exercise)

15:15 - 16:00

PRACTICAL TUTORIALS

PRACTICAL TUTORIALS 2

**Learning how to simplify and accelerate ultra-high-density maps analysis in our simulator hands-on workshop: a new breakthrough algorithm****Chairperson(s): L. Merbold (Hamburg, DE); A. Muehl (Lenzburg, CH)***After a hands-on session utilizing Lumipoint in the simulators, Physicians would be able to:*

- Understand best practices about the use of Lumipoint algorithm in real cases with a strong focus on Ventricular Tachycardia (VT)
- Simplify map analysis by utilizing appropriately the 7 tools provided by Lumipoint

16:15 - 17:00

PRACTICAL TUTORIALS

PRACTICAL TUTORIALS 2

**Ultra-high-density mapping and ablation: best practices sharing with expert physicians****Chairperson(s): C. Meyer (Hamburg, DE)***After the session and discussion, Physicians would be able to:*

- Understand and discuss Rhythmia best practices by disease
- Utilize local impedance information for tissue assessment and lesion validation

17:15 - 17:40

PRACTICAL TUTORIALS

PRACTICAL TUTORIALS 2

**Discuss your challenging ultra-high-density mapping cases with an experienced physician****Chairperson(s): C. Meyer (Hamburg, DE)***After the session and discussion, Physicians would be able to:*

- Discuss, Confirm and analyse Rhythmia map interpretation and ablation strategy in challenging cases with an expert physician

## PRACTICAL TUTORIALS 3

Sponsored by Boston Scientific

09:00 - 10:00

PRACTICAL TUTORIALS

PRACTICAL TUTORIALS 3

**Hands-on Left Ventricle (LV) lead implant in our virtual reality simulators for implanters****Chairperson(s): O. Bazillais (Rueil-Malmaison, FR)***After the session and discussion, Physicians would be able to:*

- Understand step by step the LV lead implant procedure and adapt it to specific anatomies.
- Perform, with support of an expert Cardiac Resynchronization Therapy implanter, an LV lead implant procedure in a simple anatomy following the procedure steps learnt

10:15 - 11:15

PRACTICAL TUTORIALS

PRACTICAL TUTORIALS 3

**Hands-on Left Ventricle (LV) lead implant in our virtual reality simulators for allied professionals****Chairperson(s): O. Bazillais (Rueil-Malmaison, FR)***After the session and discussion, Allied Professionals would be able to:*

- Understand step by step the LV lead implant procedure and adapt it to specific anatomies.
- Support LV lead implant procedures with a better understanding of the full procedure and challenges faced by implanters



## PRACTICAL TUTORIALS 3 (CONTINUED)

Sponsored by Boston Scientific

11:15 - 12:00 PRACTICAL TUTORIALS PRACTICAL TUTORIALS 3

**Anesthesia methods for S-ICD Implant: discuss the Serratus Plane Block (SPB) approach with expert physicians****Chairperson(s): J-B. Le Polain de Waroux (Brussels, BE)***After the session and discussion, Physicians would be able to:*

- Understand the most suitable anesthesia option for each patient with a focus on SPB Technique
- Discuss clinical benefits of each anesthesia method for S-ICD implants with a focus on SPB technique

12:00 - 12:45 PRACTICAL TUTORIALS PRACTICAL TUTORIALS 3

**S-ICD system, how to manage your challenging cases?****Chairperson(s): S. Accinelli (Genova, IT); J. Winter (Dusseldorf, DE)***After the session and discussion, Physicians would be able to:*

- Understand S-ICD Implant Best Practices, including replacement and how to avoid air entrapment
- Discuss management of challenging cases (i.e. high/low BMI)

14:00 - 14:45 PRACTICAL TUTORIALS PRACTICAL TUTORIALS 3

**Preliminary experience with novel multisensor algorithm, discussion with Heart Failure (HF) experts****Chairperson(s): P. Thakur (Arden Hills, US); L. Santini (Rome, IT)***After the session and discussion, Physicians would be able to:*

- Understand the value HeartLogic provides for early prediction of HF in concrete patients and how to manage alerts following the Alert-Assessment-Action (AAA) approach.
- Discuss possible workflows for patients and hospital staff in order to integrate HeartLogic in their clinical practice

15:00 - 15:45 PRACTICAL TUTORIALS PRACTICAL TUTORIALS 3

**Anesthesia methods for S-ICD Implant: discuss the Serratus Plane Block (SPB) approach with expert physicians****Chairperson(s): R. El Bouazzaoui (Montpellier, FR)***After the session and discussion, Physicians would be able to:*

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17:00 - 18:00 PRACTICAL TUTORIALS PRACTICAL TUTORIALS 3

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## PRACTICAL TUTORIALS 1

Sponsored by Biosense Webster

09:00 - 15:00

PRACTICAL TUTORIALS

PRACTICAL TUTORIALS 1

### New technologies designed for arrhythmias treatment

During these sessions we would like to collect physicians feedback on new technologies currently under development (each physician is asked to sign an non disclosure agreement before the session).

Appointment to these sessions will be available at Biosense Webster booth depending on availability.

## PRACTICAL TUTORIALS 2

Sponsored by Boston Scientific

09:00 - 10:00

PRACTICAL TUTORIALS

PRACTICAL TUTORIALS 2

### Ultra-high density mapping system foundations in our artificial heart hands-on workshop

Chairperson(s): N. Hillier (Paris, FR); M. Alcantara (Altdorf, DE)

After a hands-on session utilizing the artificial heart, Physicians would be able to:

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10:15 - 11:00

PRACTICAL TUTORIALS

PRACTICAL TUTORIALS 2

### Learning how to simplify and accelerate ultra-high-density maps analysis in our simulator hands-on workshop: a new breakthrough algorithm

Chairperson(s): T.G. Oesterlein (Karlsruhe, DE); L. Merbold (Hamburg, DE)

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PRACTICAL TUTORIALS

PRACTICAL TUTORIALS 2

### Ultra-high-density mapping and ablation: best practices sharing with expert physicians

Chairperson(s): J.I. Garcia-Bolao (Pamplona, ES)

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PRACTICAL TUTORIALS

PRACTICAL TUTORIALS 2

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PRACTICAL TUTORIALS

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PRACTICAL TUTORIALS 3

Sponsored by Boston Scientific

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**Preliminary experience with novel multisensor algorithm, discussion with Heart Failure (HF) experts**

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12:00 - 13:00 PRACTICAL TUTORIALS PRACTICAL TUTORIALS 3

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14:00 - 15:00 PRACTICAL TUTORIALS PRACTICAL TUTORIALS 3

**Hands-on Left Ventricle (LV) lead implant in our virtual reality simulators for allied professionals**

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After the session and discussion, Allied Professionals would be able to:

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## Sunday 17 March



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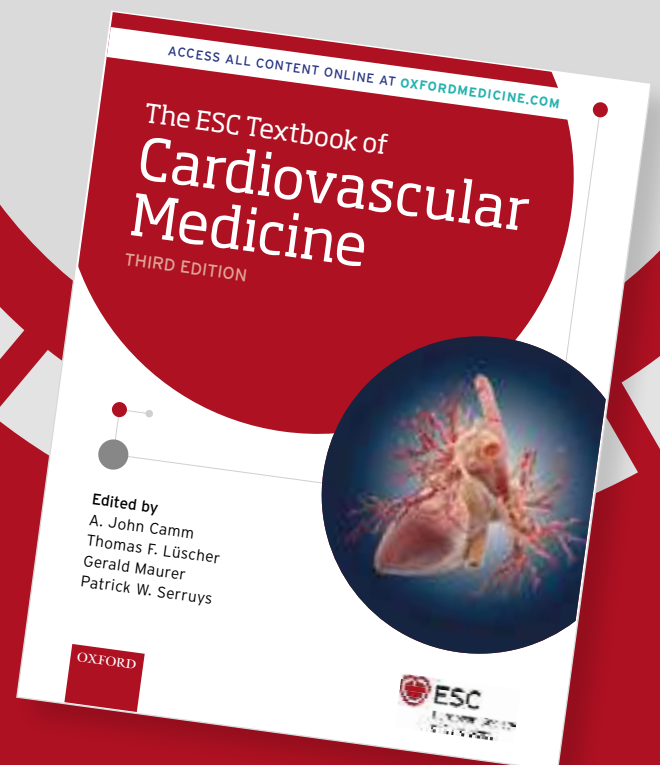


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08:30 - 10:00 SPECIAL SESSION SOKOLOV

### The 12-lead ECG as a daily, indispensable, companion

Special Session, Mobile App interactive session - Ask questions



**Chairperson(s): J. Farre (Madrid, ES); To be announced**

*To interpret and discuss important and difficult ECG pathologies, and to translate the ECG interpretation into clinical practice*

- 08:30 › The 12-lead ECG as a daily, indispensable, companion - Part 1 1  
*To be announced*
- 09:15 › The 12-lead ECG as a daily, indispensable, companion - Part 2 2  
*J. Farre (Madrid, ES)*

08:30 - 10:00 SYMPOSIUM SENNING

### Technical innovations in ventricular tachycardia ablation

**Chairperson(s): A. Arya (Leipzig, DE); P. Neuzil (Praha, CZ)**

*To understand recent technical innovations which may facilitate mapping and ablation of ventricular tachycardia.*

- 08:30 › High resolution imaging and computer modelling - New insight in post-infarct ventricular tachycardia substrates 3  
*N. Trayanova (Baltimore, US)*
- 08:52 › New energy sources and applications for ventricular tachycardia ablation 4  
*W. Sauer (Aurora, US)*
- 09:15 › Non invasive cardiac radiation for ablation of ventricular tachycardia 5  
*P. Zei (Boston, US)*
- 09:37 › Ventricular tachycardia ablation in the MRI environment 6  
*M. O'neill (London, GB)*

08:30 - 10:00 HOW-TO SESSION WENCKEBACH

### Understanding anatomy to master electrophysiology procedures

**Chairperson(s): S. Y. Ho (London, GB); L. Mont (Barcelona, ES)**

*Exact understanding of the anatomy of the heart is a key to success for practicing electrophysiologists. The aim of this session is to help to better understand the anatomical aspects of the heart important for electrophysiological procedures through both virtual imaging based and real life anatomical examples*

- 08:30 › Virtual heart anatomy and related heart structures 7  
*J. Ector (Leuven, BE)*
- 08:52 › Relevant anatomy to master supraventricular tachycardia ablation 8  
*M. Didenko (Saint - Petersburg, RU)*
- 09:15 › Anatomical considerations for improving safety in the electrophysiology lab 9  
*J.A. Cabrera (Madrid (Pozuelo), ES)*
- 09:37 › Difficult routes to the heart 10  
*S. Ernst (London, GB)*

08:30 - 10:00 DEBATE SESSION MOBITZ

### Controversies in atrial fibrillation ablation

**Chairperson(s): J. Kautzner (Prague, CZ); J. J. Primo (Maia, PT)**

*There is controversy as to whether catheter ablation reduces stroke risk in patients with atrial fibrillation. The aim of this debate session is to discuss the pro's and con's of stopping oral anticoagulation in patients at moderate risk for stroke after successful ablation. There is controversy as to whether the results of CABANA should influence our clinical decision making regarding catheter ablation to treat atrial fibrillation.*

- 08:30 › Opening question 11
- 08:37 › We can stop oral anticoagulation in moderate risk patients after successful ablation - PRO 12  
*R. Schilling (London, GB)*
- 08:45 › We can stop oral anticoagulation in moderate risk patients after successful ablation - CONTRA 13  
*J.L. Merino (Madrid, ES)*
- 08:52 › Rebuttal - PRO 14  
*R. Schilling (London, GB)*
- 09:00 › Rebuttal - CONTRA 15  
*J.L. Merino (Madrid, ES)*
- 09:07 › Chairperson conclusion & closing question 16
- 09:15 › Opening question 17
- 09:22 › CABANA will affect my clinical decision making in atrial fibrillation ablation - PRO 18  
*R. Cappato (Rozzano, IT)*
- 09:30 › CABANA will affect my clinical decision making in atrial fibrillation ablation - CONTRA 19  
*I. C. Van Gelder (Groningen, NL)*
- 09:37 › Rebuttal - PRO 20  
*R. Cappato (Rozzano, IT)*
- 09:45 › Rebuttal - CONTRA 21  
*I. C. Van Gelder (Groningen, NL)*
- 09:52 › Chairperson conclusion & closing question 22

08:30 - 10:00 HOW-TO SESSION MIROWSKI

### Individualising CRT - A case-based approach

Mobile App interactive session - Ask questions 

**Chairperson(s): F. Prinzen (Maastricht, NL); Z. E. Emkanjoo (Tehran, IR)**

*This case-based approach will review clinical challenging scenarios where the use of cardiac resynchronization therapy (CRT) may be considered. During the session, clinical decision algorithms will be presented and discussed.*

- 08:30 › Long PR and interatrial conduction delay 23  
*G. Laurent (Dijon, FR)*
- 08:48 › Right bundle branch block - Yes, no, maybe 24  
*C. Linde (Stockholm, SE)*
- 09:06 › Algorithms to increase CRT effectiveness 25  
*K. Ellenbogen (Richmond, US)*
- 09:24 › When should I consider endocardial pacing? 26  
*M. Ziacchi (Bologna, IT)*
- 09:42 › Panel discussion 27  
*S. Almeida (Almada, PT); D. Duncker (Hannover, DE)*

# Sunday 17 March

## Morning Sessions

08:30 - 10:00 MAIN SESSION FURMAN

### Burning questions in stroke management

**Chairperson(s): L. V. A. Boersma (Nieuwegein, NL); D. A. Lane (Birmingham, GB)**

*To understand the importance of different diagnostic strategies to detect and adequately anticoagulate patients with atrial fibrillation*

- |         |   |    |
|---------|---|----|
| 08:30 › | Embolitic stroke of undetermined source (ESUS) - Anticoagulation for everyone or search for atrial fibrillation?<br><i>P. Kirchhof (Birmingham, GB)</i> | 28 |
| 08:52 › | Patients with cryptogenic stroke - ILR for everyone?<br><i>L. Fiedler (Brunn Am Geb., AT)</i>   | 29 |
| 09:15 › | Left atrial appendage occluders - Indications<br><i>T.R. Betts (Oxford, GB)</i>   | 30 |
| 09:37 › | Left atrial appendage occluders - Implantation technique<br><i>B. Schmidt (Frankfurt, DE)</i>   | 31 |

08:30 - 10:00 HOW-TO SESSION COUMEL

### Clinical conundrums in patients with CIEDs

**Chairperson(s): C. W. Israel (Bielefeld, DE); C. P. Lau (Hong Kong, HK)**

*Management of complex issues stemming out of CIED therapy at follow up*

- |         |   |    |
|---------|---|----|
| 08:30 › | My patient has tricuspid regurgitation - What to do with my lead?<br><i>E. Nof (Tel Hashomer, IL)</i>                                   | 32 |
| 08:48 › | My patient with neurally mediated syncope - Minimise symptoms by dedicated pacing algorithms<br><i>G. Baron Esquivias (Sevilla, ES)</i> | 33 |
| 09:06 › | My patient has short-lasting atrial high-rate episodes at follow-up - Where to go from here?<br><i>J. Healey (Hamilton, CA)</i>         | 34 |
| 09:24 › | MRIs in non-conditional devices<br><i>J. H. Svendsen (Copenhagen, DK)</i>   | 35 |
| 09:42 › | Panel discussion<br><i>S. Rocha (Braga, PT); L. Vitali Serdoz (Nuremberg, DE)</i>   | 36 |

08:30 - 10:00 SYMPOSIUM HIS

### Human iPSC-derived cardiomyocytes in arrhythmia research

*Session from the 43<sup>rd</sup> Annual Meeting of the ESC Working Group on Cardiac Cellular Electrophysiology*

**Chairperson(s): M. Stengl (Pilsen, CZ); L. Sacconi (Sesto Fiorentino, IT)**

- |         |  |    |
|---------|--|----|
| 08:30 › | Human iPSC-derived cardiomyocytes in electrophysiology: what are they good for?<br><i>T. Christ (Hamburg, DE)</i>  | 37 |
| 08:48 › | Generation of iPSC from human adult progenitor cells: reprogramming efficiency and cardiac differentiation potential<br><i>C. Altomare, E. Pianezzi, S. Bolis, V. Biemmi, A. Ciullo, P. Benzoni, T. Moccetti, G. Camici, L. Barile, G. Vassalli (Lugano and Zurich, CH; Brescia, IT)</i> | 38 |
| 09:06 › | Human iPSC-derived cardiomyocytes as cell-based platform to study cardiac senescence<br><i>A. M. Lodrini, C. Altomare, E. Lazzarini, S. Bolis, L. Barile, M. Rocchetti (Milan, IT; Taverne, CH)</i>  | 39 |

(To be continued)



# Sunday 17 March

## Morning Sessions

(Continued)

- 09:24 › Chronic high glucose induces Ca<sup>2+</sup> mishandling via Epac2 in h-iPSC derived cardiomyocytes 40  
*M. Samia El Hayek, P. Gerbaud, C. Valdivia, F. Lefebvre, A.M. Gomez, L. Pereira (Chatenay-Malabry, FR; Wisconsin, US)*
- 09:42 › Assessing the arrhythmogenic risk associated with pathological mutations in caveolin 3 gene using both heterologous systems and iPSC-cardiomyocytes 41  
*P. Benzoni, V. Meraviglia, A. Rossini, E. Gazzero, S. Baratto, R. Milanesi, A. Bucchi, M. Baruscotti, D. Difrancesco, A. Barbuti (Milan, Bolzano and Genoa, IT)*

08:30 - 10:00

MAIN SESSION

DAMATO

### Ablation in grown-ups with congenital heart defects



Joint session with the Working Group on Grown-Up Congenital Heart Disease (GUCh)

Chairperson(s): **W. Budts (Leuven, BE); A. Sabbag (Ramat Gan, IL)**

The audience will learn about catheter ablation of both congenital and acquired substrates for supraventricular and ventricular arrhythmias in patients with structural congenital heart disease.

- 08:30 › Incidence and natural course of arrhythmias in grown-ups with a congenital heart defect 42  
*T. Paul (Gottingen, DE)*
- 08:52 › Congenital substrates for ablation in grown-ups with a congenital heart defect 43  
*J. Janousek (Prague, CZ)*
- 09:15 › Ablation of incisional atrial tachycardia - Tricks for various repaired congenital heart anatomies 44  
*I. Roca Luque (Sant Cugat Del Valles, ES)*
- 09:37 › Understanding the substrate for ventricular tachycardia - Curable by catheter ablation? 45  
*K. Zeppenfeld (Leiden, NL)*

08:30 - 10:00

RAPID FIRE ABSTRACTS

AGORA

### Rapid Fire 1: atrial fibrillation ablation: alternatives to improve success

Mobile App interactive session - Ask questions



Chairperson(s): **E. Arbelo (Barcelona, ES); T. Reichlin (Bern, CH)**

- 08:30 › Wide-area left atrial appendage isolation in patients not responding to pulmonary-vein-isolation: benefit and risks 46  
*C.H. Heeger, A. Rillig, S. Mathew, B. Reissmann, T. Maurer, H. Alessandrini, A. Metzner, F. Ouyang, T. Fink, R.R. Tilz, C. Lemes, C. Sohns, D. Inge, K.H. Kuck (Luebeck and Hamburg, DE)*
- 08:39 › Activation patterns and stability of the frequency content in the atrial appendages during persistent fibrillation 47  
*D. Calvo Cuervo, D. Testa, D. Garcia-Iglesias, J.M. Rubin, D. Perez, C. Moris (Oviedo, ES)*
- 08:48 › First clinical use of novel ablation catheter incorporating local impedance data 48  
*C. A. Martin, R. Martin, P. Gajendragadkar, P. Maury, M. Takigawa, S. Lord, S. Murray, E. Shephard, T. Pambrun, A. Denis, N. Derval, M. Hocini, M. Haissaguerre, P. Jais, F. Sacher (Cambridge and Newcastle upon Tyne, GB; Toulouse and Bordeaux-Pessac, FR)*
- 08:57 › Comparison between contact force monitoring and unipolar signal modification as a guide for catheter ablation of atrial fibrillation: A prospective multi-center randomized controlled study 49  
*K. Ejima, K. Kato, A. Okada, O. Wakisaka, R. Kimura, M. Ishizawa, T. Imai, Y. Toyama, M. Shoda, N. Hagiwara (Tokyo, Matsumoto, Oita, Kanazawa, Takamatsu and Chino, JP)*
- 09:06 › Pulmonary vein encirclement using an ablation index-guided point-by-point workflow: cardiovascular magnetic resonance assessment of left atrial scar formation 50  
*L. O'Neill, R. Karim, R. Mukherjee, J. Whitaker, I. Sim, J. Harrison, O. Razeghi, S. Niederer, M. Wright, M. O'Neill, S.E. Williams (London, GB)*

(to be continued)

(continued)

09:15 ›	Blanking period following ablation: fake news? <i>G. Hodges, C.N. Bang, C. Torp-Pedersen, A.M. Schjerning, M.L. Hansen, J. Hansen, A. Johannessen, G.H. Gislason, J. Pallisgaard (Copenhagen, Aalborg and Gentofte, DK)</i>	51
09:24 ›	Comparing multiple mapping methods at sites where persistent AF terminates: the COMPARE-AF registry <i>J. A. B. Zaman, M.I. Alhousseini, T. Baykaner, G. Meckler, R.T. Borne, C. Kowalewski, A.J. Rogers, F. Atienza, D.E. Krummen, J.M. Brachmann, P.J. Wang, J.M. Miller, W.H. Sauer, W.J. Rappel, S.M. Narayan (Cambridge, GB; Stanford, Denver, San Diego and Indianapolis, US; Valencia, ES; Coburg, DE)</i>	52
09:33 ›	Personalized interventional strategy in patients with long-standing persistent atrial fibrillation and chronic heart failure <i>V.S. Orshanskaya, A.V. Kamenev, M.A. Naimushin, R.B. Tatarskiy, S.V. Garkina, L.A. Belyakova, D.S. Lebedev (Saint Petersburg, RU)</i>	53
09:42 ›	The effectiveness of non-pulmonary vein foci targeted ablation for the patient with persistent atrial fibrillation <i>S. Tohoku, K. Hiroshima, M. Nagashima, M. Fukunaga, J. Morita, K. Yamamoto, T. Iseda, J. Hirogami, K. Ando (Kitakyushu, JP)</i>	54
09:51 ›	Evaluation of a new technique aiming at optimizing catheter stability at the anterior portion of the left pulmonary veins during radiofrequency catheter ablation for paroxysmal atrial fibrillation. <i>M. Kyriakopoulou, T. Strisciuglio, M. El Haddad, J.Y. Wielandts, A. Almorad, M. Duytschaever, R. Tavernier, Y. Vandekerckhove, S. Knecht (Bruges, BE)</i>	55

10:05 - 10:55

MODERATED POSTERS

MODERATED ePOSTERS 1

**Moderated ePosters 1: non-invasive rhythm diagnostics: bringing old and new together**

**Chairperson(s): To be announced; N. Antonio (Coimbra, PT)**

Moderated posters are on display at their assigned Moderated Poster Session from 08:30 - 12:30  
Presentation and discussion moderated by the chairpersons take place between 10:05 - 10:55

Simulating advanced AF-Detection with smartwatches: ECG confirmation triggered by arrhythmic pulse waves from PPG-signals <i>M. R. Mutke, B. Hoelz, N. Brasier, F. Ravanelli, M. Doerr, J. Eckstein (Basel, CH; Greifswald, DE)</i>	61
Complex atrial arrhythmias: are we closer to find the way to success? <i>I. Aguiar Ricardo, I.S. Goncalves, I.S. Goncalves, J. Rigueira, J. Rigueira, A. Nunes-Ferreira, A. Nunes-Ferreira, R. Santos, R. Santos, T. Rodrigues, T. Rodrigues, J. Agostinho, J. Agostinho, N. Cunha, N. Cunha, J. Quaresma, J. Quaresma, A. Bernardes, A. Bernardes, N. Cortez-Dias, N. Cortez-Dias, L. Carpinteiro, L. Carpinteiro, F.J. Pinto, F.J. Pinto, J. Sousa, J. Sousa (Lisbon, PT)</i>	62
A risk stratification scoring system for new-onset atrial fibrillation after ischemic stroke - A national cohort study <i>Y.L. Chen (Kaohsiung, TW)</i>	63
Amplified p-wave duration identifies patients at risk for left atrial thrombus formation <i>B. Mueller-Edenborn, M. Eichenlaub, S. Aldaoud, J. Chen, T. Arentz, A. Jadidi (Bad Krozingen, DE)</i>	64
Continuous monitoring leads to the new diagnosis of AF in the majority of patients after ablation of typical flutter <i>S. Kochhaeuser, R. Disselkamp, D. Dechering, G. Frommeyer, F. Reinke, P. Lange, L. Eckardt (Münster, DE)</i>	65
Causes and prognosis of incidental left bundle branch block <i>A. Zegard, O. Okafor, J. Debono, R. Steeds, L. Hudsmith, B. Stegemann, A. Jani, H. Marshall, C. Boivin, T. Qiu, F. Leyva (Birmingham, GB; Maastricht, NL)</i>	66
Hermite based T-wave morphology quantification improves LQTS diagnosis <i>B.J.M. Hermans, T. Koopsen, A. Lyon, A.S. Vink, A.A.M. Wilde, F.C. Bennis, L. Pison, P.G. Postema, T. Delhaas (Maastricht and Amsterdam, NL; Genk, BE)</i>	67
Establishing a non-medically-led same-day electrocardiogram reporting and recommendation service <i>N. Stain, M. A. Leitch, R. Sharma, S. Bayne, M. Chauhan, J. Hampton (London, GB)</i>	68

10:05 - 10:55

MODERATED POSTER

MODERATED ePOSTERS 2

### Moderated ePosters 2: atrial fibrillation ablation by cryotherapy and other energy sources

**Chairperson(s): C. Schmidt (Heidelberg, DE); G. B. Chierchia (Jette, BE)**

*Moderated posters are on display at their assigned Moderated Poster Session from 08:30 - 12:30*

*Presentation and discussion moderated by the chairpersons take place between 10:05 - 10:55*

- Cryoablation for persistent and long standing persistent atrial fibrillation: results from a multicentre european registry 69  
*V. Sawhney, R.J. Schilling, R. Providencia, D. Perera, B. Mercer, M. Finlay, J. Chun, B. Schmidt, P. Defaye, S. Boveda, J.P. Albenque, M.H. Tayebjee, C. D.E. Asmundis, G.B. Chierchia, R.J. Hunter (London and Liverpool, GB; Frankfurt am Main, DE; Grenoble and Toulouse, FR; Brussels, BE)*
- Efficacy and safety of cryoballoon ablation in heart failure: a multicenter study 70  
*C.H. Heeger, A. Amr, S. Mathew, B. Reissmann, R. Proietti, C. Eitel, T. Fink, C. Lemes, T. Maurer, A. Rillig, R. Meyer-Saraei, F. Ouyang, K.H. Kuck, A. Metzner, R.R. Tilz (Luebeck and Hamburg, DE)*
- Impact of cryoballoon freeze duration on durability of pulmonary vein isolation: insights from re-mapping procedures 71  
*S. Chen, B. Schmidt, S. Bordignon, F. Bologna, L. Perrotta, J. Chun (Frankfurt am Main, DE)*
- The prognostic impact of radiofrequency touch up in patients undergoing cryoballoon pulmonary vein isolation for paroxysmal or persistent atrial fibrillation 72  
*L. Checchi, L. Perrotta, P. Pieragnoli, R. Bani, L. Drigani, A. Michelucci, L. Padeletti, G. Ricciardi (Florence, IT)*
- Characteristics of non-pulmonary vein foci induced after 2nd-generation cryoballoon pulmonary vein isolation for paroxysmal atrial fibrillation 73  
*J. Nitta, N. Kato, G. Nitta, S. Kato, K. Kono, T. Ikenouchi, K. Murata, T. Takamiya, Y. Inamura, A. Sato, O. Inaba (Fuchu, Hiratsuka and Saitama, JP)*
- First results of ultra-low temperature cryoablation with a single-shot ablation catheter in patients with persistent atrial fibrillation 74  
*K. Iliodromitis, L.V.A. Boersma, M.N. Klaver, D. Cabrita, T. De Potter (Aalst, BE; Nieuwegein, NL; Laguna hills, US)*
- The next generation visually guided laser balloon ablation system for pulmonary vein isolation: first clinical experience 75  
*C.H. Heeger, H.L.P. Phan, R. Meyer-Saraei, T. Fink, S. Liosis, B. Brueggemann, N. Grosse, J. Vogler, B. Fahimi, I. Eitel, C. Eitel, R.R. Tilz (Luebeck, DE)*
- Tissue interface temperature measurements of intracardiac pulsed field ablation 76  
*B. Onal, B. Howard, S. Fraasch, L. Jacob, T. Rehberger, Q. Zhang, L. Davenport, M. Stewart (Mounds View, US)*

10:05 - 10:55

MODERATED POSTERS

MODERATED ePOSTER 3

### Moderated ePosters 3: atrial fibrillation ablation: dealing with gaps and safety

**Chairperson(s): D. Gupta (Liverpool, GB); M. Scanavacca (Sao Paulo, BR)**

*Moderated posters are on display at their assigned Moderated Poster Session from 08:30 - 12:30*

*Presentation and discussion moderated by the chairpersons take place between 10:05 - 10:55*

- Predictors of long-term outcome in patients undergoing a first repeat ablation for atrial fibrillation consisting solely of re-isolation of reconnected pulmonary veins. 77  
*J. P. Abugattas, B. Schwagten, J. De Cocker, H.E. Coutino, F. Salghetti, V. Varnavas, E. Stroker, J. Sieira, M. Wolf, P. Brugada, C. De Asmundis, G.B. Chierchia, Y. De Greef (Antwerp and Brussels, BE)*
- Epicardial connections between right pulmonary veins and the right atrium. Relevance for effective ablation 78  
*D. Calvo Cuervo, D. Testa, D. Garcia-Iglesias, J.M. Rubin, D. Perez, C. Moris (Oviedo, ES)*
- Accuracy of the late gadolinium enhancement cardiac magnetic resonance in the identification of electrical reconnections of veins in atrial fibrillation repeated ablation procedures 79  
*J. Cozzari, E. Benito, H. Fernandez, G. Caixal, F. Alarcon, F. Chipa, R. Borrás, C. Gunturiz, O. Trotta, J. Tolosana, S. Prat, R. Perea, E. Guasch, J. Brugada, L. Mont Girbau (Barcelona, ES)*

(to be continued)

(continued)

Pilot study evaluating MRI parameters for prediction of ablation induced esophageal injury after atrial fibrillation ablation	80
<i>A. Halbfass, L. Lehmkuhl, A. Berkovitz, E. Ene, K. Sonne, K. Nentwich, F. Fochler, B. Pavlov, T. Deneke (Bad Neustadt a.d. Saale, DE)</i>	
Echo-endoscopic evaluation of the esophagus after enclosing the pulmonary veins with contiguous and optimized RF lesions	81
<i>M. Wolf, M. El Haddad, V. De Wilde, T. Philips, J. De Pooter, Y. Vandekerckhove, R. Tavernier, H. Orlent, S. Knecht, M. Duytschaever (Antwerp and Bruges, BE)</i>	
Incidence and evolution of esophageal lesions post-pulmonary vein isolation	82
<i>O. Salvador, R. Casado-Sanchez, C. Fraile, D. Juzgado, J.L. Merino-Llorens, J.A. Cabrera-Rodriguez, A. Porta-Sanchez (Madrid, ES)</i>	
When is it appropriate to stop non-vitamin K antagonist oral anticoagulants before catheter ablation of atrial fibrillation?: A multi-center prospective randomized study	83
<i>H.T. Yu, J. Shim, J. Park, T.H. Kim, J.S. Uhm, J.Y. Kim, B. Joung, M.H. Lee, Y.H. Kim, H.N. Pak (Seoul, KR)</i>	
Atrial fibrillation catheter ablation improves the cognitive function	84
<i>M.N. Jin, T.H. Kim, K.W. Kang, H.T. Yu, J.S. Uhm, B. Joung, M.H. Lee, E. Kim, H.N. Pak (Seoul and Daejeon, KR)</i>	

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11:05 - 12:35 HOW-TO SESSION SOKOLOV

### Syncope - Translation of guidelines into clinical practice

Mobile App interactive session - Ask questions 

**Chairperson(s): M. Brignole (Lavagna, IT); R. Sutton (Monte Carlo, MC)**

*This case-based session aims to identify appropriate tests and candidates for specific therapies for syncope.*

11:05 › My patient with recurrent episodes but uncertain diagnosis - Efficient work-up	85
<i>P. M. Elliott (London, GB)</i>	
11:23 › Reflex syncope - To implant or not to implant a pacemaker?	86
<i>J.-C. Deharo (Marseille, FR)</i>	
11:41 › My patient with syncope wants to continue driving - When?	87
<i>T. Pezawas (Vienna, AT)</i>	
11:59 › Syncope and risk of sudden cardiac death - When to implant an ICD?	88
<i>V. Probst (Nantes, FR)</i>	
12:17 › Panel discussion	89
<i>S. Bogdan (Bucharest, RO); M. Ruwald (Copenhagen, DK)</i>	

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11:05 - 12:35 DEBATE SESSION SENNING

### Ventricular tachycardia ablation in ischaemic cardiomyopathy - How early and how invasive?

Mobile App interactive session - Ask questions 

**Chairperson(s): C. de Chillou (Vandoeuvre Les Nancy, FR); R. Keegan (Bahia Blanca, AR)**

*To gain insights into the pro's and con's of an early vs. late invasive strategy and into benefits and risks of an early endocardial vs. endocardial-epicardial invasive approach for VT in post-MI patients*

11:05 › Opening question	90
11:10 › ... before the second episode - Don't wait for recurrences!	91
<i>K. Kuck (Hamburg, DE)</i>	
11:20 › ... only after drug failure	92
<i>J. L. Sapp (Halifax, CA)</i>	

(to be continued)

# Sunday 17 March

## Morning Sessions

(continued)

11:30 ›	Rebuttal <i>K. Kuck (Hamburg, DE)</i>	93
11:35 ›	Rebuttal <i>J. L. Sapp (Halifax, CA)</i>	94
11:40 ›	Chairperson conclusion & closing question	95
11:50 ›	Opening question	96
11:55 ›	...always endocardial first <i>K. Zeppenfeld (Leiden, NL)</i>	97
12:05 ›	... always combined endocardial-epicardial first <i>L. Di Biase (New York, US)</i>	98
12:15 ›	Rebuttal <i>K. Zeppenfeld (Leiden, NL)</i>	99
12:20 ›	Rebuttal <i>L. Di Biase (New York, US)</i>	100
12:25 ›	Chairperson conclusion & closing question	101

11:05 - 12:35

MAIN SESSION

WENCKEBACH

### Knowledge gaps in anticoagulation for atrial fibrillation

**Chairperson(s): D. Duncker (Hannover, DE); R.C. Chettaoui (Tunis, TN)**

*Knowledge gaps in the use of anticoagulation in patients with atrial fibrillation will be discussed in this session*

11:05 ›	Low risk atrial fibrillation patients - Always anticoagulation? <i>I. Savelieva (London, GB)</i>	102
11:27 ›	Two hours of subclinical atrial fibrillation - Start anticoagulation? <i>P. Kirchhof (Birmingham, GB)</i>	103
11:50 ›	Atrial fibrillation and percutaneous coronary intervention or acute coronary syndrome - Dual or triple therapy <i>J. Steffel (Zurich, CH)</i>	104
12:12 ›	Left atrial appendage closure - Alternative for oral anticoagulants in high risk atrial fibrillation patients <i>Y. Blaauw (Groningen, NL)</i>	105

11:05 - 12:35

MAIN SESSION

MOBITZ

### Sudden cardiac death - Old and new questions

**Chairperson(s): G. Conte (Lugano, CH); M. Zabel (Goettingen, DE)**

*Focusing on risk stratification for sudden death prevention based on comprehensive patients' evaluation.*

11:05 ›	Primary prevention in ischaemic cardiomyopathy. The continued quest for better risk stratification <i>A. Bauer (Munich, DE)</i>	106
11:27 ›	Sudden death risk in non-ischaemic cardiomyopathy - Genotype, phenotype and imaging techniques <i>P. Lambiase (London, GB)</i>	107
11:50 ›	Sudden death prevention in patients with significant non-cardiac co-morbidities - How to assist decision-making? <i>C. Kolb (Muenchen, DE)</i>	108
12:13 ›	Idiopathic ventricular fibrillation - Diagnostic pathway and therapeutic strategies	109

# Sunday 17 March

## Morning Sessions

11:05 - 12:35 SPECIAL SESSION MIROWSKI

### Live case session - Ablation of atrial fibrillation

Special Session 

**Chairperson(s): R. Schilling (London, GB); P. Sommer (Leipzig, DE)**

*To witness state of the art technology in the hands of experts for treating atrial fibrillation*

- |         |   |     |
|---------|---|-----|
| 11:05 › | Live from Leipzig - Atrial fibrillation ablation for persistent atrial fibrillation with the cryoballoon<br><i>K.R. J. Chun (Frankfurt, DE)</i> | 110 |
| 11:35 › | Live in the box - Contiguous lesions using ablation index and interlesion distance: the CLOSE approach<br><i>M. Duytschaever (Brugge, BE)</i>   | 111 |
| 12:05 › | Live in the box - Atrial fibrillation ablation using the ACUTUS system<br><i>T. Wong (London, GB)</i>   | 112 |

11:05 - 12:35 HOW-TO SESSION FURMAN

### ICD management in real life

**Chairperson(s): C. Linde (Stockholm, SE); A. Saxena (Ludhiana, IN)**

*Understanding how to optimize ICD programming and to add complementary treatments. Guidance on very critical end of life decisions.*

- |         |   |     |
|---------|---|-----|
| 11:05 › | Use of discriminators across different manufacturers<br><i>P. Bordachar (Pessac, FR)</i>  | 113 |
| 11:27 › | My ICD patient has effective antitachycardia pacing - Does he/she benefit from ablation or medication?<br><i>T. Deneke (Bad Neustadt, DE)</i> | 114 |
| 11:50 › | My ICD candidate has a long PR interval (280 ms) - Which device to implant?<br><i>I. Goldenberg (Ramat Gan, IL)</i>                           | 115 |
| 12:12 › | End-of-life decisions in ICD carriers - When should ICD therapy be re-considered?<br><i>M. Landolina (Crema, IT)</i>                          | 116 |

11:05 - 12:35 MAIN SESSION COUMEL

### How to pace and defibrillate a patient with congenital heart disease

**Joint session with the Working Group on Cardiac Dysrhythmias and Electrophysiology from the Association for European Paediatric and Congenital Cardiology**

**Chairperson(s): T. Kriebel (Kaiserslautern, DE); To be announced**

*The audience should learn about clinical and technical aspects of cardiac pacing and ICD use in patients with congenital heart disease with special focus on long-term managements to achieve the greatest benefit over decades of CIED therapy.*

- |         |  |     |
|---------|--|-----|
| 11:05 › | What can the adult electrophysiologist learn from the paediatric electrophysiologist when pacing patients with congenital heart disease<br><i>R.A. Gebauer (Leipzig, DE)</i> | 117 |
| 11:27 › | What can be learned from ICD use in congenital heart disease?<br><i>J. R. De Groot (Amsterdam, NL)</i>   | 118 |
| 11:50 › | GUCH patients - Many leads and complex anatomies. Balancing the risk of extraction with long-term benefit<br><i>B. Mondesert (Montreal, CA)</i>                              | 119 |
| 12:12 › | Challenging cardiac implantable electronic device cases in adult congenital heart disease<br><i>E. Rosenthal (St Albans, GB)</i>   | 120 |

# Sunday 17 March

## Morning Sessions

11:05 - 12:35 SYMPOSIUM HIS

### Ion channel (dys)function and regulation

Session from the 43<sup>rd</sup> Annual Meeting of the ESC Working Group on Cardiac Cellular Electrophysiology

Chairperson(s): **A. Gomez (Chatenay-Malabry, FR); M.E. Mangoni (Montpellier, FR)**

- 11:05 › Calmodulin mutations and channel dysfunction: knowns and unknowns 121
- 11:23 › Microdomain-specific regulation of sodium current by targeting the microtubule plus-end tracking protein complex 122  
G.A. Marchal, V. Potero, S. Casini, M. Hernandez-Perez, N. Yu, F. Charpentier, R. Redon, A.O. Verkerk, M. Delmar, N. Galjart, C.A. Remme (Amsterdam and Rotterdam, NL; New York, US; Nantes, FR)
- 11:41 › TRPM4 non-selective cation channel in human atrial fibroblast differentiation 123  
C. Simard, C. Magaud, R. Adjlane, Q. Dupas, L. Salle, P. Bois, A. Manrique, J.F. Faivre, R. Guinamard (Caen and Poitiers, FR)
- 11:59 › The effect of a novel small conductance calcium activated potassium channel inhibitor in intact atria and atrial cardiomyocytes 124  
S. Dobi, G. Smith, A. Workman, A. Campebell (Glasgow, GB)
- 12:17 › Identification of the A293 (AVE1231) binding site in the cardiac two-pore-domain potassium channel TASK-1: a common low affinity antiarrhythmic drug binding site 125  
F. Wiedmann, A. Kiper, M. Bedoya, A. Ratte, M. Kraft, M. Waibel, P. Anand, W. Wenzel, W. Gonzalez, H.A. Katus, N. Decher, C. Schmidt (Heidelberg, Marburg and Karlsruhe, DE; Talca, CL)

11:05 - 12:35 ORAL ABSTRACT SESSION DAMATO

### Best oral e-cardiology abstract

Chairperson(s): **P. E. Dilaveris (Athens, GR); J. Lumens (Maastricht, NL); G. Krstacic (Zagreb, HR)**

Judge(s): R. Casado Arroyo (Brussels, BE); N.M.S. de Groot (Rotterdam, NL); E. J. Vigmond (Bordeaux, FR)

- 11:05 › Characterization of right ventricular electromechanical tissue substrates in arrhythmogenic cardiomyopathy: a patient-specific modelling approach 126  
N. Van Osta, F. Kirkels, A. Lyon, T. Delhaas, M.J. Cramer, A.J. Teske, J. Lumens (Maastricht and Utrecht, NL)
- 11:20 › The impact of virtual arrhythmia clinics following catheter ablation for atrial fibrillation. 127  
M. Manimaran, D. Das, P. Martinez, R. Schwartz, R. Schilling, M. Finlay (London, GB)
- 11:35 › The duration of the amplified P-wave is a potent predictor of future ischemic stroke - Comparison of novel and known ECG- and risk- markers 128  
A.S. Jadidi, S. Aldaoud, J. Chen, B. Mueller-Edenborn, J. Allgeier, H. Lehrmann, C. Keyl, F.J. Neumann, D. Trenk, T. Arentz (Bad Krozingen, DE)
- 11:50 › Afterload dependence of left and right ventricular response to pacing delay optimization: a combined experimental- computational study 129  
E. Willemsen, P.R. Huntjens, F.W.P. Prinzen, J. Lumens (Maastricht, NL)
- 12:05 › The in-ear region as a novel anatomical site for ecg signal detection: spontaneous validation study on healthy volunteers. 130  
R. De Lucia, G. Zucchelli, V. Barletta, M. Giannotti Santoro, A. Di Cori, L. Segreti, S. Viani, T. Cellamaro, L. Paperini, E. Soldati, M.G. Bongiorno (Pisa, IT)
- 12:20 › The diagnostic accuracy of a pulse-deriving smartphone application is device independent 131  
C. Smeets, E. Houben, J. Vranken, T. Proesmans, P. Vandervoort (Diepenbeek and Genk, BE)

11:05 - 12:35

RAPID FIRE ABSTRACTS

AGORA

**Rapid Fire 2: new topics in ablation of ventricular arrhythmias**

**Chairperson(s): C. Bisceglia (Milan, IT); K. Soejima (Tokyo, JP)**

- 11:05 > Pure cardiac magnetic resonance-guided ablation of scar-dependent left ventricular tachycardia. 132  
*D. Soto-Iglesias, D. Penela, B. Jauregui, J. Acosta, J. Fernandez-Armenta, M. Linhart, V. Syrovnev, F. Zaraket, C. Teres, A. Alcaine, R.J. Perea, J.T. Ortiz-Perez, L. Mont, O. Camara, A. Berruezo (Barcelona, Sevilla and Cadiz, ES; Piacenza, IT)*
- 11:14 > Early outcomes of radiosurgery for refractory ventricular tachycardia using the CyberHeart planning system 133  
*C. Gianni, P. Zei, J.D. Burkhardt, E. Gardner, A. Natale, D. Rivera, B. Pollard, P. Maguire, A. Al-Ahmad (Austin, Boston and Portola Valley, US)*
- 11:23 > Effect of activation wavefront on electrogram characteristics during ventricular tachycardia ablation 134  
*C. A. Martin, R. Martin, P. Maury, C. Meyer, T. Wong, M. Takigawa, A. Frontera, G. Cheniti, T. Pambrun, A. Denis, N. Derval, M. Hocini, M. Haissaguerre, P. Jais, F. Sacher (Cambridge, Newcastle upon Tyne and London, GB; Toulouse and Bordeaux-Pessac, FR; Hamburg, DE)*
- 11:32 > Stereotactic radiosurgery for ablation of ventricular tachycardia - procedural aspects and toxicity evaluation 135  
*J. Cvek, L. Knybel, R. Neuwirth, O. Jiravsky, P. Peichl, J. Kautzner (Ostrava, Trinec and Prague, CZ)*
- 11:41 > Mortality and morbidity reduction after frequent PVC ablation in patients with LV systolic dysfunction 136  
*D. Penela, B. Jauregui, D. Soto-Iglesia, L. Aguinaga, A. Ordonez, J. Fernandez-Armenta, L. Tercedor, J. Acosta, C. Teres, A. Berruezo (Piacenza, IT; Barcelona, Tarragona, Cadiz, Granada and Sevilla, ES; Tucuman, AR)*
- 11:50 > Dynamic high density mapping of late potentials and late repolarization identifies critical sites for ablation in ventricular tachycardia. 137  
*N.T. Srinivasan, J. Garcia, R.J. Schilling, S. Ahsan, M. Dhinoja, R. Ang, M.D. Lowe, M.J. Earley, A.W. Chow, P.D. Lambiase (London, GB)*
- 11:59 > Effectiveness of limited substrate modification during VT ablation based on ablation only of conducting channels identified on ct with myocardial thinning in ischemic ventricular tachycardia 138  
*E. Ene, K. Nentwich, P.H. Halbfass, K. Sonne, A. Berkowitz, L. Lehmkuhl, P. Jais, H. Cochet, T. Deneke (Bad Neustadt a.d. Saale, DE; Bordeaux-Pessac, FR)*
- 12:08 > Impact of genetic mutation type on long-term outcome of endo-epicardial ablation of ventricular tachycardia in patients with nonischaemic cardiomyopathy 139  
*P. Peichl, A. Krebsova, D. Wichterle, L. Piherova, P. Norambuena, V. Stranecky, S. Kmoch, M. Macek, R. Cihak, J. Kautzner (Prague, CZ)*
- 12:17 > Outcomes of patients with arrhythmogenic right ventricular cardiomyopathy/dysplasia after catheter ablation of stable ventricular tachycardia without an implantable cardioverter-defibrillator 140  
*E. Gandjbakhch, M. Laredo, A. Berruezo, J.B. Gourraud, R. Martins, T. Wong, J.M. Sellal, F. Sacher, L. Pison, E. Pruvot, S. Kumar, P. Dellabella, P. Maury (Paris, Nantes, Rennes, Vandoeuvre les Nancy, Bordeaux and Toulouse, FR; Barcelona, ES; London, GB; Maastricht, NL; Lausanne, CH; Sydney, AU; Milan, IT)*
- 12:26 > Use of novel electrogram to detect critical isthmus and abnormal potentials for ablation in ventricular tachycardia 141  
*C.A. Martin, M. Takigawa, R. Martin, P. Maury, C. Meyer, T. Wong, T. Kitamura, F. Bourier, T. Pambrun, A. Denis, N. Derval, M. Hocini, M. Haissaguerre, F. Sacher (Cambridge, Newcastle upon Tyne and London, GB; Bordeaux-Pessac and Toulouse, FR; Hamburg, D*



12:45 - 13:45 SATELLITE SYMPOSIUM SENNING

### Novel approaches in heart failure management

Sponsored by Abbott

**Chairperson(s):** B. Assmus (Frankfurt / Main, DE); C. Leclercq (Rennes, FR)

Attendees will learn during the Satellite Symposium what novel approaches can be taken in the treatment of Heart Failure. They will learn about the importance of dynamic adjustment of the AV delays in CRT devices, how pulmonary artery pressure monitoring can change from a simple tool to a tool that changes the whole treatment of a heart failure patient.

The importance will be shown of using the data gathered with remote monitoring to optimize the general management. Attendees will be made aware how to use this data in the benefit of the heart failure patient.

- |         |  |     |
|---------|--|-----|
| 12:45 › | Welcome and introduction - Novel approaches in heart failure management.<br>C. Leclercq (Rennes, FR)                         | 142 |
| 12:48 › | Activate: the next level of Cardiac Resynchronization Therapy (CRT): SyncAV and multi point pacing.<br>D. Mijic (Witten, DE) | 143 |
| 13:06 › | Proactive, personalized patient management through hemodynamic monitoring.<br>B. Assmus (Frankfurt / Main, DE)               | 144 |
| 13:24 › | Integrating diagnostic data from implanted devices for improved patient management.<br>J.J. Brugs (Mijnsheerenland, NL)      | 145 |
| 13:42 › | Closing and take a way messages - Novel approaches in heart failure management.<br>B. Assmus (Frankfurt / Main, DE)          | 146 |

12:45 - 13:45 SATELLITE SYMPOSIUM WENCKEBACH

### Innovative approaches for complex arrhythmia management

Sponsored by Medtronic

**Chairperson(s):** I. Deisenhofer (Munich, DE); P. Defaye (Grenoble, FR)

Learn how innovative non-invasive cardiac mapping provides better insights for ablation of ventricular tachyarrhythmias. Learn about the latest technologies and clinical results in Cryoballoon ablation for atrial fibrillation.

- |         |   |     |
|---------|---|-----|
| 12:45 › | Introduction - Innovative approaches for complex arrhythmia management.<br>P. Defaye (Grenoble, FR)                           | 147 |
| 12:50 › | Non-invasive cardiac mapping: insights in Ventricular Tachyarrhythmias (VT) ablation.<br>P. Lambiase (London, GB)             | 148 |
| 13:05 › | State of the art in cryoballoon ablation: latest insights from science and technology.<br>A. Metzner (Hamburg, DE)            | 149 |
| 13:20 › | Looking beyond the legacy outcomes: new clinical endpoints with cryoballoon ablation.<br>C. Blomstrom-Lundqvist (Uppsala, SE) | 150 |
| 13:35 › | Conclusions - Innovative approaches for complex arrhythmia management.<br>I. Deisenhofer (Munich, DE)                         | 151 |

12:45 - 13:45 SATELLITE SYMPOSIUM MOBITZ

**Closing the gap with high density mapping**

Sponsored by Abbott

Chairperson(s): R. Schilling (London, GB); M. Duytschaever (Brugge, BE)

High density mapping to define optimal ablation strategies in atrial & ventricular tachyarrhythmias

- 12:45 › High density mapping for atrial tachyarrhythmias 152  
J. Moreno Planas (Madrid, ES)
- 13:05 › Pulmonary vein isolation - Do you still need a circular mapping catheter ? 153  
D. Steven (Cologne, DE)
- 13:25 › Ventricular tachycardia mapping - Common challenges, new tools & approaches. 154  
P. Della Bella (Milan, IT)

12:45 - 13:45 SATELLITE SYMPOSIUM MIROWSKI

**Advanced technologies for personalised disease management**

Sponsored by Boston Scientific

Chairperson(s): J-B. Le Polain de Waroux (Brussels, BE), S. Willems (Hamburg, DE)

1. Discuss therapy options for sudden cardiac death prevention including benefits of a modular approach
2. Learn new approaches to manage ventricular tachycardia in Cardiac Implantable Electronic Device (CIED) patients
3. Deep dive into AF ablation approaches and HeartLogic diagnostics for HF patients

- 12:45 › Introduction: Advanced technologies for personalised disease management. 155  
J-B. Le Polain de Waroux (Brussels, BE)
- 12:52 › Personalising Implantable Cardioverter Defibrillator (ICD) therapy for Sudden Cardiac Death (SCD) prevention. 156  
A. D'Onofrio (Naples, IT)
- 13:07 › Managing Ventricular Tachycardias (VT) - ablation or pacing? 157  
R. Wakili (Munich, DE)
- 13:22 › Advanced technologies for managing Atrial Fibrillation (AF) and Heart Failure (HF). 158  
D. Gupta (Liverpool, GB)
- 13:37 › Conclusion: Advanced technologies for personalised disease management. 159  
S. Willems (Hamburg, DE)

12:45 - 13:45 SATELLITE SYMPOSIUM FURMAN

**Heart failure patient management with cardiac implantable devices**

Sponsored by Medtronic

Chairperson(s): V. Probst (Nantes, FR); G. S. Filippatos (Athens, GR)

Learn and discuss how innovative device algorithms and new leads may lead to a better response to cardiac resynchronization therapy.

Learn and discuss which patients to refer for left ventricular assist devices and which clinical results will be achieved.

- 12:45 › Introduction - Heart failure patient management with cardiac implantable devices. 160  
V. Probst (Nantes, FR)
- 12:50 › Maximizing the benefits of cardiac resynchronization therapy: new tools to address non-response. 161  
R. Borgquist (Lund, SE)
- 13:15 › When is the right time to refer for a left ventricular assist device? 162  
A.M. Bernhardt (Hamburg, DE)
- 13:40 › Conclusions - Heart failure patient management with cardiac implantable devices. 163  
G. S. Filippatos (Athens, GR)

12:45 - 13:45 SATELLITE SYMPOSIUM COUMEL

### Convergent procedure: a new approach to Atrial Fibrillation ablation

Organised by Radcliffe Cardiology, supported with an educational grant from AtriCure

Chairperson(s): **G. Jaswinder Singh (London, GB)**

After this session electrophysiologists will be able to identify the causes of sub-optimal outcomes in atrial ablation, describe the convergent procedure and appropriate patients, and outline the electrophysiologist's role.

- |         |   |     |
|---------|---|-----|
| 12:45 › | Introduction - The ongoing challenges of Atrial Fibrillation.<br>G. Jaswinder Singh (London, GB)  | 164 |
| 12:50 › | The electrophysiologic problem leading to sub-optimal outcomes.<br>C. Tondo (Milan, IT)   | 165 |
| 13:00 › | Convergent ablation: the what and the why.<br>F. Yang (Brooklyn, US)  | 166 |
| 13:15 › | The role of the electrophysiologist in convergent ablation: the how and the who.<br>S.Y. Ahsan (London, GB)                                     | 167 |
| 13:30 › | Panel Q&A, facilitated by Prof. Gill - Convergent procedure: a new approach to Atrial Fibrillation ablation.<br>G. Jaswinder Singh (London, GB) | 168 |

12:45 - 13:45 SATELLITE SYMPOSIUM HIS

### Enduring excellence in extraction: building success

Sponsored by Cook Medical

Chairperson(s): **C. T. Starck (Berlin, DE); N. Lever (Auckland, NZ)**

Creating predictable patient outcomes with rotational transvenous lead extraction tools. Simple techniques for sustaining long-term success. Building a lead extraction program for mitigating risk.

- |         |   |     |
|---------|---|-----|
| 12:45 › | Introduction - Enduring excellence in extraction: building success.<br>C. T. Starck (Berlin, DE); N. Lever (Auckland, NZ)                     | 169 |
| 12:50 › | Avoidance and mitigation of procedural risk.<br>M. Gallagher (London, GB)   | 170 |
| 13:05 › | Devices and techniques for successful outcomes.<br>C. T. Starck (Berlin, DE)  | 171 |
| 13:20 › | Building and maintaining the team and the program.<br>P. P. H. M. Delnoy (Zwolle, NL)   | 172 |
| 13:35 › | Conclusion - Question and Answer - Enduring excellence in extraction: building success.<br>C. T. Starck (Berlin, DE); N. Lever (Auckland, NZ) | 173 |

14:00 - 15:30 MAIN SESSION SOKOLOV

### Late-breaking trials 1

**Chairperson(s): R. Cappato (Rozzano, IT); H. Heidbuchel (Antwerp, BE)**

- 14:00 › A randomized clinical trial of cryoballoon vs. irrigated radiofrequency catheter ablation for atrial fibrillation: The CIRCA-DOSE Study 174  
*J.G. Andrade (Vancouver, CA)*
- 14:10 › CIRCA-DOSE Study - Discussion 175  
*D. Scherr (Graz,AT)*
- 14:15 › Ablation versus anti-arrhythmic therapy for reducing all hospital episodes from recurrent atrial fibrillation 176  
*P. Kanagaratnam (London, GB)*
- 14:25 › Ablation versus anti-arrhythmic therapy for reducing all hospital episodes from recurrent atrial fibrillation - Discussion 177  
*C. Piorkowski (Dresden,DE)*
- 14:30 › Quality of life and 12-month efficacy outcomes in paroxysmal and persistent af following pvi using the pvac gold ablation catheter: results from the multicenter GOLD AF registry 178  
*L. V. A. Boersma (Nieuwegein, NL)*
- 14:40 › GOLD AF registry - Discussion 179  
*F. Arribas (Madrid,ES)*
- 14:45 › Successful 1-year outcome of catheter ablation of lone paroxysmal atrial fibrillation assessed by insertable cardiac monitors: the CLOSE to CURE study 180  
*M. Duytschaever (Brugge, BE)*
- 14:55 › The CLOSE to CURE study - Discussion. 181  
*C. Sticherling (Basel,CH)*
- 15:00 › Assessment of the safety and performance of a novel RF balloon catheter system to isolate pulmonary veins: results of the multicenter AF-FICIENT 1 Trial 182  
*A. Al-Ahmad (, US)*
- 15:10 › AF-FICIENT 1 Trial - Discussion. 183  
*P Sommer (Bad Oeynhausen,DE)*
- 15:15 › Panel discussion. 184

14:00 - 15:30 MAIN SESSION SENNING

### Ventricular arrhythmia ablation in structurally normal hearts

Joint session with the Japanese Heart Rhythm Society (JHRS) 

**Chairperson(s): Y. Nakazato (Urayasu, JP); A. Goette (Paderborn, DE)**

*Ablation of ventricular arrhythmias in structurally normal hearts may sometimes be challenging. Learn from the experts on how best to tackle these arrhythmias.*

- 14:00 › Ventricular arrhythmias from unusual right ventricular and left ventricular locations 185  
*R. Tilz (Luebeck, DE)*
- 14:22 › Ventricular arrhythmias related to the conduction system 186  
*I. Morishima (Ogaki, JP)*
- 14:45 › Arrhythmias from the right and left papillary muscle 187  
*P. Peichl (Prague, CZ)*
- 15:07 › LVOT and LV summit 188  
*Y. Komatsu (Tsukuba, JP)*

14:00 - 15:30 SYMPOSIUM WENCKEBACH

### Mastering ICD therapy

**Chairperson(s): N. Sadoul (Vandoeuvre Les Nancy, FR); G. Milasinovic (Belgrade, RS)**

*To improve patient outcome by appropriate device selection, programming for arrhythmia diagnosis and treatment and troubleshooting of complex situations.*

- 14:00 › ICD programming - Optimising arrhythmia detection and termination 189  
A. Kloppe (Bochum, DE)
- 14:22 › Wearable cardioverter defibrillator - Programming and troubleshooting 190  
C. Veltmann (Hannover, DE)
- 14:45 › Subcutaneous ICDs - Screening for eligibility 191  
R.L. Lenarczyk (Zabrze, PL)
- 15:07 › The many faces of subcutaneous ICD under/oversensing in real life 192  
J.-B. Le Polain de Waroux (Brussels, BE)

14:00 - 15:30 MAIN SESSION MOBITZ

### Recurrence of atrial fibrillation and all veins are still isolated - Now what?

**Chairperson(s): K. Kuck (Hamburg, DE); N. Marrouche (Salt Lake City, US)**

*Recurrence of atrial fibrillation after pulmonary vein isolation is mainly due to pulmonary vein reconnection. Due to more durable isolation techniques however, the likelihood of finding four isolated veins at repeat for atrial fibrillation recurrence has increased. The objective of this main session is to discuss the incidence of this 'new clinical entity' and the outcome after various repeat ablation strategies.*

- 14:00 › Patients with four veins isolated at repeat - Incidence and characteristics 193  
M. Duytschaever (Brugge, BE)
- 14:22 › Ablation of empirical and elicited non-pulmonary vein triggers 194  
P. Lambiase (London, GB)
- 14:45 › Ablation of the patient-specific substrate (right, left or both atria) 195  
H. Kottkamp (Duesseldorf, DE)
- 15:07 › Endo-epicardial ablation 196  
C. Piorkowski (Dresden, DE)

14:00 - 15:30 HOW-TO SESSION MIROWSKI

### Arrhythmia cases - Think outside the box

Mobile App interactive session - Ask questions

Joint session with the Latin American Heart Rhythm Society (LAHRS)



**Chairperson(s): M. J. O. Figueiredo (Campinas, BR); C. Leclercq (Rennes, FR)**

*This case-based session will cover cardiac involvement of extra-cardiac diseases*

- 14:00 › Sarcoidosis 197  
G. Diez (Mexico City, MX)
- 14:18 › Laminopathy 198  
F. D. Murgatroyd (London, GB)
- 14:36 › Lyme disease 199  
K. Kaczmarek (Lodz, PL)
- 14:54 › Chagas disease 200  
L. C. Saenz Morales (Bogota, CO)
- 15:12 › Panel discussion 201  
E. Ene (Bad Neustadt An Der Saale, DE); S. Hilbert (Leipzig, DE)

14:00 - 15:30 HOW-TO SESSION FURMAN

### Instructive cases in inherited cardiac conditions

Mobile App interactive session - Ask questions 

Joint session with the European Cardiac arrhythmia GENetics (ECGen)

Chairperson(s): P. Chevalier (Lyon, FR); A. A. M. Wilde (Amsterdam, NL)

Clinical cases will highlight key learning points and knowledge gaps in inherited channelopathies.

14:00 ›	Long QT syndrome L. Crotti (Milan, IT)	202
14:18 ›	Brugada syndrome M. Namdar (Geneva, CH)	203
14:36 ›	Catecholaminergic polymorphic centricular tachycardia I. Denjoy (Paris, FR)	204
14:54 ›	Overlap syndromes E. Behr (London, GB)	205
15:12 ›	Panel discussion P. Carmo (Carnaxide, PT); M. L. Caputo (Lugano, CH)	206

14:00 - 15:30 HOW-TO SESSION COUMEL

### When things get complicated in lead management - A case-based approach

Mobile App interactive session - Ask questions 

Chairperson(s): I. Fernandez Lozano (Madrid, ES); A. Rao (Warrington, GB)

Based upon case demonstration, this session intends to present reasons for the occurrence of major complications during lead management, and which actions could be possibly undertaken to mitigate failure or severe complications.

14:00 ›	My nightmare in lead management A. Curnis (Brescia, IT)	207
14:18 ›	My nightmare in lead management - Me too! C. E. H. Kennergren (Goteborg, SE)	208
14:36 ›	My worst case ever L. Epstein (Manhasset, US)	209
14:54 ›	When disaster strikes P. Defaye (Grenoble, FR)	210
15:12 ›	Panel discussion A. D. Margulescu (Morrison, GB); B. Valente (Lisbon, PT)	211

14:00 - 15:30 YOUNG INVESTIGATOR AWARD ABSTRACTS HIS

### Young Investigator Award - Basic and Translational Science

Chairperson(s): A. de Vries (Leiden, NL); S. G. Priori (Pavia, IT)

Judge(s): L. Gepstein (Haifa, IL); K. E. Odening (Freiburg, DE); I. Efimov (Washington, US)

Young Investigators will present their abstract in competition for the EHRA 2019 Young Investigator Award Prize. Results & Winners will be announced and awarded with a diploma at the end of the session.

14:00 ›	MicroRNAs and the specific substrate of paroxysmal and persistent atrial fibrillation. N.W.E. Van Den Berg, M. Kawasaki, J. Neefs, R. Wesselink, E.R. Meulendijks, S.W. Baalman, I. Van Der Made, A. Jongejan, J.R. De Groot (Amsterdam, NL)	212
14:15 ›	The degree and spatial distribution of myocardial fibrosis can influence the underlying mechanism of ventricular fibrillation B. S. Handa, X. Li, C. A. Mansfield, R. Jabbour, D. Pitcher, R. A. Chowdhury, N. S. Peters, F. S. Ng (London, GB)	213

(to be continued)

(continued)

14:30 ›	A hybrid bio-electronic approach for automated and acute shock-free termination of atrial fibrillation in vivo <i>E.C.A. Nyns, R.H. Poelma, L. Volkers, C.I. Bart, T.J. Van Brakel, K. Zeppenfeld, M.J. Schalij, G.Q. Zhang, A.A.F. De Vries, D.A. Pijnappels (Leiden and Delft, NL)</i>	214
14:45 ›	Optogenetic termination of ventricular tachyarrhythmias in the adult rat model of pressure overload <i>M.S.C. Fontes, L. Volkers, E.C.A. Nyns, C.I. Bart, A.M. Kip, A.A.F. De Vries, D.A. Pijnappels (Leiden, NL)</i>	215
15:00 ›	Using artificial intelligence to identify sites where local ablation terminates persistent atrial fibrillation <i>M. Alhusseini, F. Abuzaid, P. Clopton, A. Rogers, M. Rodrigo, T. Baykaner, P. Wang, W.J. Rappel, S.M. Narayan (Stanford and San Diego, US)</i>	216
15:15 ›	Pharmacological inhibition of atrial TASK-1 channels facilitates acute cardioversion of atrial fibrillation in a large animal model <i>F. Wiedmann, C. Beyersdorf, A. Ratte, M. Waibel, M. Kraft, H.A. Katus, C. Schmidt (Heidelberg, DE)</i>	217

14:00 - 15:30 HOW-TO SESSION DAMATO

### Advances in cardiac imaging technologies for sudden cardiac death risk stratification in cardiomyopathies



Joint session with the European Association for Cardiovascular Imaging (EACVI)

Chairperson(s): **A. Berruezo Sanchez (Barcelona, ES); T. Edvardsen (Oslo, NO)**

14:00 ›	Current status of cardiac imaging <i>K. H. Haugaa (Oslo, NO)</i>	218
14:22 ›	Risk stratification in DCM - Value of LGE-CMR <i>S. Prasad (London, GB)</i>	219
14:45 ›	Risk stratification in HCM - Incremental benefit of LGE-CMR <i>M. Borggreffe (Mannheim, DE)</i>	220
15:07 ›	Novel and future CMR technologies <i>S. E. Petersen (London, GB)</i>	221

14:00 - 15:30 RAPID FIRE ABSTRACTS AGORA

### Rapid Fire 3: refinements in contemporary pacing

Chairperson(s): **P.P. Mitkowski (Poznan, PL); K. Vernooy (Maastricht, NL)**

14:00 ›	Long-term outcomes in patients with atrio-ventricular block of unknown aetiology identified before the age of 50 years -A nationwide study <i>J. Rudbeck-Resdal, M.K. Christiansen, J.B. Johansen, J.C. Nielsen, H. Bundgaard, H.K. Jensen (Aarhus, Odense and Copenhagen, DK)</i>	222
14:09 ›	Pacemaker dependency after transcatheter aortic valve implantation: incidence, predictors and long-term outcomes <i>P. Zappulla, G. Costa, M. Barbanti, A. Cirasa, D. Todaro, G. Rapisarda, A. Picci, F. Platania, A. Tosto, A. Di Grazia, C. Sgroi, C. Tamburino, V. Calvi (Catania, IT)</i>	223
14:18 ›	Late pacemaker implantation after transcatheter aortic valve implantation <i>E.G. Elchinova, H. Servatius, F. Noti, S. Baldinger, A. Haeberlin, R. Sweda, J. Seiler, H. Tanner, T. Pilgrim, S. Stortecky, S. Windecker, M. Branca, T. Reichlin, T. Roten (Bern, CH)</i>	224
14:27 ›	Pacemaker dependency in patients with permanent pacemaker implantation after TAVI <i>Y.M. Hwang, J. Kim (Suwon and Seoul, KR)</i>	225
14:36 ›	The value of the His paced to RV sensed interval in optimising battery longevity in His pacing <i>N.S. Starr, G.D. Domenichini, N.D. Dayal, C.S. Stettler, H.B. Burri (Geneva, CH)</i>	226


(to be continued)

(continued)

14:45 ›	His bundle pacing: initial experience after 209 procedures <i>P.J. Moskal, M. Jastrzebski, A. Bednarek, G. Kielbasa, D. Czarnecka (Krakow, PL)</i>	227
14:54 ›	Physiological activation by his bundle pacing can introduce superior cardiac function compared with right or biventricular pacing. a simulation study using a realistic computer heart model. <i>E. Hasumi, K. Fujiu, J. Okada, T. Washio, T. Hisada, I. Komuro, S. Sugiura (Tokyo, JP)</i>	228
15:03 ›	His Bundle Pacing: the need to surgical reintervention during follow up. <i>L. Marcantoni, G. Pastore, E. Baracca, S. Aggio, C. Picariello, A. Maddalozzo, D. Lanza, S. Giatti, K. D'elia, M. Carraro, L. Roncon, F. Zanon (Rovigo, IT)</i>	229
15:12 ›	Implantation of the Micra transcatheter pacing system: bleeding and thromboembolic events in a real-world setting <i>R. San Antonio, F. Chipa-Ccasani, E. Trucco, M. Linhart, J. Apolo, H. Fernandez, M. Pujol-Lopez, F. Alarcon, E. Benito, I. Roca-Luque, E. Arbelo, E. Guasch, J. Brugada, L. Mont, J.M. Tolosana (Barcelona, ES)</i>	230
15:21 ›	How to recognize free-wall implantation of leadless pacemaker from an ECG. <i>T. Kajiyama, Y. Kondo, M. Nakano, M. Nakano, T. Hayashi, R. Ito, H. Takahira, Y. Kobayashi (Chiba, JP)</i>	231


15:30 - 16:20 SPECIAL SESSION MOBITZ

### Meet my patient 1

Special Session		
<b>Chairperson(s): H. Burri (Geneva, CH); M. M. Oliveira (Lisbon, PT)</b>		
15:30 ›	My patient with VT ablation : what does banking have in common with electrophysiology? <i>H. Burri (Geneva, CH)</i>	232
15:46 ›	Believe in a second chance for AF ablation. <i>M. M. Oliveira (Lisbon, PT)</i>	233

15:35 - 16:25 SPECIAL SESSION INNOVATIONS STAGE - LEVEL 1

### EHRA Innovation Stage 1

Special Session		
<b>Chairperson(s): M. Finlay (London, GB)</b>		
Judge(s): M.M. Farkowski (Warsaw, PL); K. Jubele (Riga, LV); F. Prinzen (Maastricht, NL)		
15:35 ›	Bipolar radiofrequency ablation <i>PR Futyma (Rzeszow,PL)</i>	235
15:45 ›	Multimodel imaging and suction knife to find and reach optimal pacing site <i>F J Van Slochteren (Utrecht,NL)</i>	236
15:55 ›	Rapid automated diagnostic interpretation of cardiac arrhythmias <i>AD Arnold (London,GB)</i>	237
16:15 ›	Panel discussion	239



15:35 - 16:25

MODERATED POSTERS

MODERATED EPOSTER 1

### Moderated ePosters 4: Understanding the substrate for ventricular arrhythmias

**Chairperson(s): E. Gandjbakhch (Paris, FR); T. Deneke (Bad Neustadt, DE)**

*Moderated posters are on display at their assigned Moderated Poster Session from 14:00 to 18:00*

*Presentation and discussion moderated by the chairpersons take place between 15:35 - 16:25*

- Validation of a novel software application for non-invasive localisation of premature ventricular complexes (PVC) and ventricular tachycardia (VT) to guide catheter ablation 240  
*Z. Vali, A. Mistry, M. Lazdam, X. Li, R. Somani, P. Stafford, A. Sandilands, G.A. Ng (Leicester, GB)*
- Retrograde coronary venous and intracoronary ethanol injection for ventricular ectopic ablation 241  
*V. Sawhney, S. Whittaker-Axon, J. Garcia, C. O'mahony, M. Ozkor, C. Knight, E. Smith, P.D. Lambiase, A. Chow, M.D. Lowe, R.J. Hunter, M.J. Earley, N. Sekhri, S. Sporton, M. Dhinoja (London, GB)*
- Prognostic significance of ventricular arrhythmias in titin-related dilated cardiomyopathy for the outcome of catheter ablation - Results from a multicenter experience 242  
*M. Ebert, M. De Riva, A.P. Wijnmaalen, S.A. Trines, M. Bootsma, J. Hoogendoorn, J.P. Van Tintelen, J.D. Jongbloed, D. Husser, G.S. Baldinger, D. Andreu, W. Stevenson, A. Berruezo, G. Hindricks, K. Zeppenfeld (Leiden, Amsterdam and Groningen, NL; Leipzig, DE; Boston, US; Barcelona, ES)*
- Myocarditis with prevalent arrhythmic manifestation: clinical features and outcome during long-term follow up 243  
*G. Grifoni, M. Casella, M.L. Narducci, L. Bianchini, S. Zanchi, G. Negro, A. Gasperetti, V. Catto, E. Conte, S. Mustaq, D. Andreini, G. Pelargonio, C. Basso, A. Dello Russo, C. Tondo (Milan, Rome and Padua, IT)*
- Electroanatomic and histological right ventricular outflow tract alterations in patients with Brugada syndrome 244  
*M. Nesti, M. Pieroni, P. Notarstefano, A. Oliva, O. Campuzano, P. Santangeli, M. Coll, A. Carnevali, A. Fraticelli, A. Iglesias, S. Grassi, R. Brugada, L. Bolognese (Arezzo and Rome, IT; Girona, ES; Philadelphia, US)*
- Septal late gadolinium enhancement and conduction delay on ECG in nonischemic dilated cardiomyopathy 245  
*M. A. J. Becker, C.P. Allaart, A. Zweerink, J.H. Cornel, A.C. Van Rossum, T. Germans (Amsterdam and Alkmaar, NL)*
- Long-term post-infarction scar volume decrease is associated to local wall thickening. A study using serial late gadolinium enhancement cardiac magnetic resonance 246  
*B. Jauregui Garrido, D. Soto-Iglesias, V. Syrovnev, F. Zaraket, V. Hervas, D. Penela, J. Acosta, J. Fernandez-Armenta, S. Prat-Gonzalez, R.J. Perea, C. Teres, X. Bosch, J.T. Ortiz-Perez, A. Berruezo (Barcelona, Seville and Cadiz, ES; Piacenza, IT)*
- Prevalence, management and outcome of life-threatening arrhythmias in Takotsubo Syndrome: 247  
*I. El-Battrawy, F. Santoro, T. Stiermaier, F. Guastafierro, G. Novo, S. Novo, A. Santangelo, E. Mariano, F. Romeo, F.A. Romeo, A. Capucci, I. Giannini, N.D. Brunetti, I. Eitel, I. Akin (Mannheim and Lübeck, DE; Foggia, Palermo, Rome and Ancona, IT)*

15:35 - 16:25

MODERATED POSTERS

MODERATED EPOSTER 2

### Moderated ePosters 5: cardiac pacing - insights in old and new modalities

**Chairperson(s): F. D. Murgatroyd (London, GB); F. Braunschweig (Stockholm, SE)**

*Moderated posters are on display at their assigned Moderated Poster Session from 14:00 to 18:00*

*Presentation and discussion moderated by the chairpersons take place between 15:35 - 16:25*

- Leadless pacemaker implantation initial learning curve - considerations on implantation safety and efficacy 248  
*A. Haeberlin, S. Knecht, H. Tanner, B. Schaer, F. Noti, S. Osswald, H. Servatius, N. Kozhuharov, S. Baldinger, J. Seiler, C. Sticherling, L. Roten, M. Kuehne, T. Reichlin (Bern and Basel, CH)*

(to be continued)

(continued)

Development, implementation and evaluation of a quality assurance programme for permanent pacemaker follow-up <i>Z. Patterson, E. Beaney, M. Chapman, M.G.D. Bates, A.J. Turley, A.R. Thornley, S. James, N.J. Linker (Middlesbrough, GB)</i>	249
Clinical features, predictors, and long-term prognosis of pacing-induced cardiomyopathy <i>S.J. Park, H.B. Gwag, Y.J. Park, S.S. Lee, K.M. Park, Y.K. On, J.S. Kim (Seoul, KR)</i>	250
Electromagnetic interferences on recent pacemakers during oncologic radiotherapy exposure: a real-time, in-vitro evaluation <i>E. Di Girolamo, M. Marini, N. Furia, M. Faustino, M. Appignani, D. Genovesi, C. Di Carlo, A. Delana, A. Barbareschi, M.D. Falco (Chieti, Trento and Rome, IT)</i>	251
Impact of promoting intrinsic ventricular rhythm on clinical outcomes in pacemaker patients at one-year post implant <i>M. Arnold, B. Faulknier, A. D'onofrio, Y. Sakata, M. Gulizia, M. Richards, C. Klager, A. Franke, R. Thakur (Erlangen, DE; Vero Beach, Toledo, St. Paul, Sylmar and Lansing, US; Napoli and Catania, IT; Osaka, JP)</i>	252
Left bundle branch block (LBBB) or RV-paced induced LBBB post trans catheter aortic-valve replacement (TAVR) results in poorer clinical outcomes post procedure <i>L. R. Scott, J. Sweeney, D.F. Fortuin, P. Devaleria, L. Lanza, L. Patrick, M. Girardo, G. Ramsay, P. Maranzano (PHOENIX, US)</i>	253
Long-term performance of the medtronic select-secure pacing lead in His and non-His bundle positions: implications for His-bundle pacing <i>M. Emami, A. Thyagarajah, D. Linz, R. Mishima, K. Kadhim, R. Mahajan, K. Roberts-Thomson, M. Middeldorp, D. H. Lau, G. Young, V. Dean, P. Sanders (Adelaide and Brisbane, AU)</i>	254
A new low-dose fluoroscopy technique for minimizing radiation exposure during cardiac electronic device implantation <i>A. Creta, M. Dhinoja, R. Providencia, C. Monkhouse, M. Finlay, S. Sporton, A. Chow, S. Ahsan, M.J. Earley, R.J. Hunter, M. Lowe, P.D. Lambiase, R.J. Schilling (London, GB)</i>	255

15:35 - 16:25

MODERATED POSTERS

MODERATED EPOSTER 3

### Moderated ePosters 6: latest in ICD therapy and the risk of sudden cardiac death

**Chairperson(s): C. Kolb (Muenchen, DE); S. Almeida (Almada, PT)**

*Moderated posters are on display at their assigned Moderated Poster Session from 14:00 to 18:00*

*Presentation and discussion moderated by the chairpersons take place between 15:35 - 16:25*

Transient malfunctions of contemporary implantable cardioverter-defibrillators ongoing oncologic radiotherapy: a randomized, real-time, in-vitro observation <i>E. Di Girolamo, M. Marini, M. Faustino, N. Furia, M. Appignani, D. Genovesi, C. Di Carlo, A. Delana, A. Barbareschi, M.D. Falco (Chieti, Trento and Rome, IT)</i>	256
Ventricular tachycardia prediction in patients with implantable cardioverter-defibrillators for primary prevention of sudden cardiac death <i>T. Lubimceva, V. Lebedeva, O. Klitcenko, D. Lebedev (Saint Petersburg and St. Petersburg, RU)</i>	257
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15:45 - 16:15 SATELLITE SYMPOSIUM - EXPERTS ON THE SPOT AGORA

### Advanced mapping & imaging for ventricular tachyarrhythmia ablation

Sponsored by **Abbott**

**Chairperson(s): J. Kautzner (Prague, CZ)**

*New technologies and imaging tools to define ablation treatment strategies in ventricular tachyarrhythmias*

15:45 › Advanced mapping & imaging for ventricular tachyarrhythmia ablation.	264
<i>P. Santangeli (Philadelphia, US)</i>	

16:30 - 18:00 SYMPOSIUM SENNING

### Tricky situations in supraventricular tachycardia ablation

Joint session with **Chinese Society EP**



**Chairperson(s): H. Heidbuchel (Antwerp, BE); S. Zhang (Beijing, CN)**

*This joint session with the Chinese Society of EP will teach you how to overcome the challenges and pitfalls of ablating specific supraventricular arrhythmias.*

16:30 › Mahaim pathways	265
<i>S.C. Yap (Rotterdam, NL)</i>	
16:52 › Tips and tricks of complex accessory pathway ablation	266
<i>M. Chen (Nanjing, CN)</i>	
17:15 › Permanent junctional reciprocating tachycardia	267
<i>J. M. Almendral Garrote (Madrid, ES)</i>	
17:37 › Catheter ablation of atypical atrioventricular nodal reentry tachycardia	268
<i>W. Zulu (Shenyang City, CN)</i>	

16:30 - 18:00 SYMPOSIUM WENCKEBACH

### Pericardial access for ventricular tachycardia ablations

Joint session with the Sociedade Brasileira de Arritmias Cardíacas (SOBRAC) 

Chairperson(s): M. M. Oliveira (Lisbon, PT); E. Saad (Rio De Janeiro, BR)

To understand the relevant aspects of anatomy for pericardial access and the tools currently available. In addition, how to solve the most frequent challenges and manage complications.

16:30 ›	Anatomy for the electrophysiologist - Anterior, posterior or apical? S. Y. Ho (London, GB)	269
16:52 ›	New tools for epicardial access M. Scanavacca (Sao Paulo, BR)	270
17:15 ›	Challenges in epicardial access - Adhesions, bypass grafts and others A. Davila (Florianopolis, BR)	271
17:37 ›	Managing complications following epicardial puncture R. Tilz (Luebeck, DE)	272

16:30 - 18:00 DEBATE SESSION MOBITZ

### Knowledge gaps in clinical atrial fibrillation

Mobile App interactive session - Ask questions 

Chairperson(s): H. J. G. M. Crijns (Maastricht, NL); A. Vora (Mumbai, IN)

These debates will give you more insight in

1. the use of OAC post AF that occurred in the setting of severe illness

2. the appropriateness of AV node ablation in elderly symptomatic AF patients

16:30 ›	Opening question	273
16:35 ›	Anticoagulation and CHA2DS2-VASc score of 1 - PRO T.S. Potpara (Belgrade, RS)	274
16:45 ›	Anticoagulation and CHA2DS2-VASc score of 1 - CONTRA C. Escobar Cervantes (Madrid, ES)	275
16:55 ›	Rebuttal PRO T.S. Potpara (Belgrade, RS)	276
17:00 ›	Rebuttal CONTRA C. Escobar Cervantes (Madrid, ES)	277
17:05 ›	Chairperson conclusion & closing question	278
17:15 ›	Opening question	279
17:20 ›	Symptomatic atrial fibrillation in the elderly - Atrioventricular node ablation is an attractive strategy - PRO A. J. Camm (London, GB)	280
17:30 ›	Symptomatic atrial fibrillation in the elderly - Atrioventricular node ablation is an attractive strategy - CONTRA M. G. Chelu (Salt Lake, US)	281
17:40 ›	Rebuttal PRO A. J. Camm (London, GB)	282
17:45 ›	Rebuttal CONTRA M. G. Chelu (Salt Lake, US)	283
17:50 ›	Chairperson conclusion & closing question	284

16:30 - 18:00 SPECIAL SESSION MIROWSKI

### Live case session - Direct His bundle pacing

Special Session



Chairperson(s): H. Burri (Geneva, CH); K. Ellenbogen (Richmond, US)

- 16:30 › Live from Madrid - His bundle pacing in left bundle branch block 285  
F. Zanon (Rovigo, IT)
- 17:00 › Live in the box - His bundle pacing for infra-nodal atrioventricular block 286  
Z. I. Whinnett (London, GB)
- 17:30 › Live in the box - His bundle pacing and atrioventricular node ablation 287  
P. Vijayaraman (Wilkes Barre, US)

16:30 - 18:00 SPECIAL SESSION FURMAN

### EHRA ECG open

Special Session, Mobile App interactive session - Ask questions



Chairperson(s): M. Earley (London, GB); C. Wolpert (Ludwigsburg, DE)

ECG tracings will be presented to the audience with multiple choice question, and then commented by the panel.

- 16:30 › Quiz 1 288
- 16:52 › Quiz 2 289
- 17:15 › Quiz 3 290
- 17:37 › Quiz 4 291

16:30 - 18:00 DEBATE SESSION COUMEL

### Addressing unknowns in CRT

Chairperson(s): A. Auricchio (Lugano, CH); C. Leclercq (Rennes, FR)

Despite the fact the cardiac resynchronization therapy (CRT) is clinically available since late '90s, there are still many open questions. Novel technologies will be discussed and the debates aim to identify the pro-contra of each technology in specific clinical settings.

- 16:30 › Opening question 292
- 16:35 › Alternative solution to CRT - Cardiac contractile modulation is my choice 293  
W. Jung (Villingen-Schwenningen, DE)
- 16:45 › Alternative solution to CRT - His bundle pacing is my preferred alternative 294  
D. Keene (London, GB)
- 16:55 › Rebuttal 295  
W. Jung (Villingen-Schwenningen, DE)
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D. Keene (London, GB)
- 17:05 › Chairperson conclusion & closing question 297
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- 17:20 › Disease management by remote monitoring - Nice to have but don't expect wonders! 299  
M. R. Cowie (London, GB)
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G. Hindricks (Leipzig, DE)
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M. R. Cowie (London, GB)
- 17:45 › Rebuttal 302  
G. Hindricks (Leipzig, DE)
- 17:50 › Chairperson conclusion & closing question 303

16:30 - 18:00 SYMPOSIUM HIS

**Carmeliet-Coraboeuf-Weidmann lecture**

Session from the 43<sup>rd</sup> Annual Meeting of the ESC Working Group on Cardiac Cellular Electrophysiology

Chairperson(s): C. A. Remme (Amsterdam ZO, NL)

16:30 › 1969-2019: 50 years since the first discovery of cardiac calcium current activation by adrenaline 304

16:30 - 18:00 MAIN SESSION DAMATO

**Cardio-oncology - A new frontier for arrhythmia specialists**



Joint session with the Council for Cardio-Oncology

Chairperson(s): R. Asteggiano (Turin, IT); R. Hatala (Bratislava, SK)

Cardiologists are increasingly involved in managing patients with cancer. This joint session with the Council for Cardio- Oncology overviews different aspects of rhythm disorders in these complex patients.

16:30 › QT prolongation and conduction disturbances during chemotherapy 305  
C. Sticherling (Basel, CH)

16:52 › Interplay of atrial fibrillation, heart failure and chemotherapy 306  
A. Lyon (London, GB)

17:15 › Management of patients with CIEDs undergoing radiotherapy 307  
G. Boriani (Castenaso (Bo), IT)

17:37 › Atrial fibrillation during chemotherapy - Assessing the risk-benefit ratio for anticoagulation 308  
J. Oldgren (Uppsala, SE)

16:30 - 18:00 RAPID FIRE ABSTRACTS AGORA

**Rapid Fire 4: The shocking truth of device therapy**

Chairperson(s): N. Pavlovic (Zagreb, HR); D.A.M.J. Theuns (Rotterdam, NL)

16:30 › Refining ICD decision-making in non-ischaemic patients in the post-DANISH era: analysis from a nationwide database of daily remote-monitoring transmissions in a real-world cohort 309  
G. B. Forleo, F. Solimene, E. Pisano', G. Zanotto, V. Calvi, C. Pignalberi, G. Maglia, S. Iacopino, F. Quartieri, M. Biffi, F. Caravati, A. Curnis, D. Giacomelli, A. Gargaro, A. D'onofrio (Milan, Mercogliano, Lecce, Legnago, Catania, Rome, Catanzaro, Cotignola, Reggio Emilia, Bologna, Varese, Brescia, Vimodrone and Naples, IT)

16:39 › Long-term performance of contemporary internal cardioverter defibrillator leads: a single center experience 310  
R. Brenner, J. Hueppi, F. Jaeger-Rhomberg, D. Altmann, P. Ammann (St Gallen, CH)

16:48 › Incidence of appropriate therapy and mortality after ICD generator replacement: results from a real-world nationwide prospective cohort 311  
M. Ruwald, A.C. Ruwald, J.B. Johansen, G. Gislason, J.C. Nielsen, B. Philbert, S. Riahi, M. Vinther, T.B. Lindhardt (Hellerup, Odense, Aarhus, Copenhagen and Aalborg, DK)

16:57 › Myocardial damage as a result of implantation and defibrillation testing in transvenous and subcutaneous implantable cardioverter-defibrillators. 312  
A. F. B. E. Quast, S. W. Baalman, W. Van Der Stuijt, T. F. Brouwer, A. A. M. Wilde, R. E. Knops (Amsterdam, NL)

17:06 › Depression and anxiety during the first 12 months post-implant: a matched cohort study of patients with a subcutaneous implantable defibrillator and patients with a transvenous system 313  
S.S. Pedersen, N. Carter, C. Barr, P. Neuzil, M. Scholten, P. Lambiase, L. Boersma, J.B. Johansen, D.A.M.J. Theuns (Odense, DK; St. Paul, US; Dudley and London, GB; Prague, CZ; Enschede, Nieuwegein and Rotterdam, NL)

(to be continued)

(continued)

- |         |   |     |
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| 17:24 > | Ultra-short tip-ring spacing of the atrial lead reduces ventricular far-field sensing in primary prevention ICD recipients  | 315 |
|         | <i>F. Eberhardt, J. Stolz, H. Bonnemeier, J.O. Schwab (Cologne, Kiel and Bonn, DE)</i>  |     |
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|         | <i>M.T. Rijnerse, A.C.J. Van Der Lingen, S. De Haan, H.J. Harms, M.S. Huisman, A.A. Lammertsma, A.C. Van Rossum, P. Knaapen, C.P. Allaart (Amsterdam, NL)</i>   |     |
| 17:51 > | Appropriate and Inappropriate Shocks in WCD patients - Results from the Austrian WCD registry   | 318 |
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18:15 - 18:45

SPECIAL SESSION

COUMEL

### General Assembly - Working Group on Cardiac Cellular Electrophysiology

Special Session, Mobile App interactive session - Ask questions



Session from the 43<sup>rd</sup> Annual Meeting of the ESC Working Group on Cardiac Cellular Electrophysiology

08:30 - 18:00

POSTER SESSION

POSTERS

### Poster session 1

#### Congenital Heart Disease and Pediatric Cardiology

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*S. Laranjo, M. Oliveira, A.S. Delgado, N. Monteiro, C. Trigo, F.F. Pinto (Lisbon, PT)*
- Ultra-high density activation mapping to aid isthmus identification of atrial tachycardias in congenital heart disease P321  
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<i>V. Bianchi, A. Martiniello, J. Mangual, G. Pedrizzetti, G. Tonti, P. Caso, A. D'onofrio (Naples, Trieste and Chieti, IT; Sylmar, CA, US)</i>	
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<i>M. Coksevim, M. Akcay, S. Yuksel, M. Yenercag, B. Cerik, Ö. Gedikli, O. Gulel, M. Sahin (Giresun, Atakum /SAMSUN and Samsun, TR)</i>	
Long-term multipoint pacing response linked to baseline characteristics in international population	P540
<i>C. Leclercq, I. Niazi, P. Lercher, M. Lunati, R. Rordorf, M. Landolina, N. Badie, K. Lee, C. Pappone, G. Tomassoni (Rennes, FR; Milwaukee, Sunnyvale and Lexington, US; Graz, AT; Milan, Pavia, Crema and San Donato Milanese, IT)</i>	
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Contrast-induced acute kidney injury after cardiac resynchronization therapy implant impairs the recovery of ejection fraction in responder patients <i>T. Strisciuglio, G. Ammirati, V. Pergola, L. Imparato, C. Carella, E. Koci, R. Chiappetti, F.G. Abbate, V.M. La Fazia, B. Trimarco, A. Rapacciuolo (Naples, IT)</i>	P555
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*R. Kirkfeldt, J.B. Johansen, O.D. Jorgensen, J.C. Nielsen (Aarhus and Odense, DK)*
- The impact of leadless pacemaker therapy on cardiac and atrioventricular valve function. P558  
*N. E. G. Beurskens, F.V.Y. Tjong, H.A.C.M. Bon, K.J. Dasselaar, W.J. Kuijt, A.A.M. Wilde, R.E. Knops (Amsterdam, NL)*
- Histopathological examination of explanted nanostim leadless cardiac pacemakers P559  
*N. E. G. Beurskens, F.V.Y. Tjong, A.F.B.E. Quast, R.E. Knops (Amsterdam, NL)*
- Device lead interference with tricuspid valve leaflets is the mechanism of tricuspid valve regurgitation P561  
*M. Tarek Seleem, S. Ashour Mohamed El Sayed, E. Mohamed El Sharkawy, A. Ahmed Ali Abulhuda (Alexandria, EG)*
- Feasibility and mid-term outcome of Micra implant after transvenous lead extraction P562  
*V. Barletta, G. Zucchelli, V. Della Tommasina, M. Parollo, S. Viani, A. Di Cori, R. De Lucia, L. Segreti, L. Paperini, E. Soldati, M.G. Bongiorno (Pisa, IT)*
- Transvenous lead extraction on uninterrupted anticoagulation: a multicentre registry analyses P563  
*V. Sawhney, S. Whittaker-Axon, A. Breitenstein, J. Steffel, L. Baca, V. Cobb, V. Ezzat, P.D. Lambiase, M.D. Lowe, R.J. Hunter, M.J. Earley, R.J. Schilling, S. Sporton, A. Chow, M. Dhinoja (London, GB; Zurich, CH)*
- Transvenous lead extraction: sixteen-year experience at a single centre. P564  
*E.V. Dovellini, L. Giurlani, P. Pieragnoli, G. Ricciardi, P. Corsi, R. Valenti (Florence, IT)*



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### Young EP poster session - Young meets Experienced

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*E. Mikhaylov (Saint-Petersburg, RU); S. Willems (Hamburg, DE); J. Kosiuk (Leipzig, DE); E. Gandjbakhch (Paris, FR); A. Nogami (Tsukuba, JP); K. Satomi (Tokyo, JP)*
- Impact of cardiac arrhythmias on in-hospital mortality among patients admitted for takotsubo syndrome: a large scale study based on national healthcare system databank. P566  
*G. Malanchini, M.P. Del Corral, A. Galli, F. Ambrosini, F. Lombardi (Milan, IT)*
- Heart rate and duration of non-sustained ventricular tachycardia improve risk assessment of sudden death in hypertrophic cardiomyopathy P567  
*C. Adduci, F. Palano, B. Musumeci, C. De Lucia, D. Russo, L. Limite, M. Volpe, C. Autore, P. Francia (Rome, IT)*
- High-dose nifedipine use is associated with increased risk of out-of-hospital cardiac arrest: multi-country case-control study P568  
*T.E. Eroglu, G.H. Mohr, M.T. Blom, C. Torp-Pedersen, P.C. Souverein, A. De Boer, G.H. Gislason, H.L. Tan (Amsterdam and Utrecht, NL; Copenhagen and Aalborg, DK)*
- Spatial-temporal heterogeneity of out-of-hospital cardiac arrest incidence in swiss canton ticino P569  
*M. L. Caputo, S. Peluso, J. Reinhold, R. Burkart, C. Benvenuti, R. Cianella, T. Moccetti, A. Mira, A. Auricchio (Lugano and Breganzona, CH)*
- New simplified diagnostic algorithm for wide-QRS tachycardias in adults with corrected tetralogy of Fallot P570  
*C. A. Alvarez-Ortega, O. Salvador, Z. Blazquez, O. Cano, N. Rivas, J. Ruiz-Cantador, A. Gonzalez, R. Peinado (Madrid, Valencia and Barcelona, ES)*
- Automatic non-invasive substrate analysis from CT images in post-infarction VT P571  
*N. Cedilnik, S. Jia, F. Sacher, P. Jais, H. Cochet, M. Sermesant (Sophia Antipolis and Bordeaux, FR)*
- Pre-clinical evaluation of a real-time MRI-guided electrophysiology system for ventricular tachycardia P572  
*R. Mukherjee, C.M. Costa, R. Neji, J. Harrison, I. Sim, S.E. Williams, J. Whitaker, H. Chubb, L. O'Neill, T. Lloyd, T. Pohl, S. Roujol, S.A. Niederer, R. Razavi, M. O'Neill (London, GB; Erlangen, DE; Burnsville, US)*
- Insights from endomyocardial biopsy in patients with ventricular arrhythmias and left ventricular non-ischaemic scar P573  
*G. Peretto, S. Sala, A. Palmisano, S. Rizzo, A. Frontera, A. Esposito, G. Thiene, C. Basso, P. Della Bella (Milan and Padua, IT)*
- Obstructive sleep apnea a facilitator of cardiac fibrosis P574  
*G. Kaur, M. Kheirkhan, N. Marrouche (Salt Lake City, US)*
- Sinus node dysfunction after thoracoscopic surgical ablation for atrial fibrillation P575  
*J. Neefs, S.A. Ons, W.R. Berger, S.P.J. Krul, N.W.E. Van Den Berg, F.R. Piersma, J.S.S. De Jong, W.J.P. Van Boven, A.H.G. Driessen, J.R. De Groot (Amsterdam, NL)*
- Cardiac MRI evaluation of right and left atrial fibrosis in patients with atrial septal defects P576  
*L. O'Neill, S.E. Williams, O. Razeghi, J. Whitaker, I. Sim, R. Mukherjee, S. Niederer, M. Wright, A. Frigiola, M. O'Neill (London, GB)*
- Efficacy of catheter ablation for atrial fibrillation in patients with congenital heart disease P577  
*S. Guarguagli, A. Kempny, I. Cazzoli, R. Barracano, M. Gatzoulis, K. Dimopoulos, S. Ernst (London, GB)*
- Exploring epicardial adipose tissue activity in atrial fibrillation P578  
*E. R. Meulendijks, M. Kawasaki, N.W.E. Van Den Berg, J. Neefs, R. Wesselink, S. Baalman, W.J. Van Boven, A.H.G. Driessen, C. Jimenez, S. Piersma, J.R. Groot (Amsterdam, NL)*
- Pulmonary vein isolation using ablation index improves outcome in patients with persistent AF. P579  
*J.E. Pedersen, K.F. Lauritsen, N.C.F. Sandgaard, J. Dalhoj, S. Djurhuus, J.B. Johansen, J. Pontoppidan (Odense, DK)*

- Termination during atrial fibrillation may reflect ablation of larger driver areas P580  
*N. Bhatia, S. Hossainy, A.J. Rogers, M.I. Alhusseini, N. Moosvi, C. Brodt, T. Baykaner, P.J. Wang, W.J. Rappel, S.M. Narayan (Stanford and San Diego, US)*
- Occurrence of ischemic stroke despite DOAC use in non-valvular AF patients: the importance of the dosing regimen P581  
*J. Milner, V. Marinho, C. Ferreira, P. Alves, L. Fernandes, T. Goncalves, J. Sargento-Freitas, L. Cunha, N. Antonio, L. Goncalves (Coimbra, PT)*
- Targeted biomarker profiling in postural orthostatic tachycardia syndrome P582  
*F. Ricci, J.M. Spahic, N. Aung, V. Hamrefors, O. Melander, R. Sutton, A. Fedorowski (Chieti, IT; Lund, SE; London, GB)*
- A new LVH ECG criterion using vectorial analysis, validation on a single center wide population P583  
*D. Ricciardi, G. Vetta, F. Picarelli, A. Creta, M. Carpenito, C. Cavallaro, A. Nenna, A. Segreti, M. Albano, F.A. Gioia, V. Calabrese, N. Di Belardino, G. Di Sciascio (Rome, IT)*
- Role of the electrocardiogram in the postictal phase of epileptic seizures: results from a prospective study P584  
*L. Gigli, S. Sala, K. Okubo, C. Di Resta, G. Peretto, A. Radinovic, A. Frontera, L. Foppoli, C. Marini, M. Cireddu, C. Bisceglia, F. Baratto, A. Marzi, S. Benedetti, P. Della Bella (Milan, IT; Yokosuka, JP)*
- A 25-year single-center experience of surgical extraction of 2828 pacemaker and defibrillator leads P585  
*S.I. Llerena Butron, M. Moradi-Kolbolandi, R. Rodriguez, N. Rivas-Gandara, A. Moya-Mitjans, I. Roca-Luque, J. Perez-Rodon, J. Francisco-Pascual, A. Santos-Ortega, J. Rodriguez-Garcia, M. Andorra, L. Duran-Casademont, I. Gonzalez-Marquez, G. Pascual-Gonzalez, D. Garcia-Dorado (Barcelona, ES)*

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POSTER SESSION

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### Clinical case corner 1

#### Arrhythmias

- Phenotypic variance of a SCN5A nonsense mutation in a familial transmission. P586  
*I. Dufour, Q. Binet, N. De Schryver, A. Amraoui, J.B. Le Polain De Waroux, Y. Sznajer, A. Wauters (Ottignies and Brussels, BE)*
- Brugada syndrome in a young patient with type 1 myotonic dystrophy requiring an implantable cardioverter defibrillator for primary prevention P587  
*P. Korantzopoulos, A. Bechlioulis, L. Lakkas, S. Plakoutsi, E. Florou, K. Naka (Ioannina, GR)*
- Changing of delta-wave polarity during 24-hour ecg monitoring in patients with wpw syndrome as a predictor of presense of two accessory pathways P588  
*V. Sidarchuk, S. Galitskaya, S. Sivak, E. Stepanova (Minsk, BY)*

#### Atrial Fibrillation

- Cryoballoon ablation of atrial fibrillation in 4 patients with atrial septal occluder P589  
*S. Venier, P. Jacon, A. Carabelli, F. Dugenet, S. Sarr, M. Jabeur, P. Defaye (Grenoble, FR)*
- Left atrial appendage thrombus formation within less than 24 hours following empirical cryoballoon based left atrial appendage-isolation P590  
*R.R. Tilz, S. Liosis, R. Meyer-Saraei, H.L. Phan, T. Fink, N. Grosse, B. Fahimi, B. Brueggemann, J.C. Reil, J. Vogler, I. Eitel, C. Eitel, C.H. Heeger (Luebeck, DE)*
- Left phrenic nerve injury during cryoballoon ablation of atrial fibrillation P591  
*A. Breitenstein, M. Mohsen, J. Steffel, A. Saguner (Zurich, CH)*
- Persistent and severe atrial septal defect after percutaneous left atrial appendage occlusion with the watchman device: a rare complication P592  
*E. Camanho, R. Mourilhe Rocha, L.A. Oliveira Jr, C. Slater, L. C. Dias, E. B. Saad (RIO DE JANEIRO and Rio de Janeiro, BR)*
- Cryoballoon pulmonary veins isolation in atrial fibrillation treatment additionally restores repolarization pattern in a patient with vasospastic angina and J wave syndrome P593  
*A.W.H. Wojdyla-Hordynska, A. Hordynski, O. Kowalski, M. Gierlotka (Opole and Zabrze, PL)*

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- Recurrences following ARVC-related VT ablation and the need for epicardial ablation in very long-term follow-up P594  
*M. Fiala, O. Toman, V. Bulkova, L. Rybka, M. Hrosova, M. Cernosek, J. Manousek, J. Januska, J. Spinar (Brno and Trinec, CZ)*
- Radiofrequency applications from the great cardiac vein facilitated successful catheter ablation in a challenging case with symptomatic frequent premature ventricular contraction P595  
*K. Fukumoto, S. Kashimura, M. Sakai, Y. Shinya, M. Momoi, R. Kitajima, H. Yamakawa, D. Shinmura, T. Koura, K. Negishi (Yokohama, JP)*
- Pulmonary arterial pressure predicts heart failure decompensation from recent onset frequent premature ventricular complexes: improvement after radiofrequency catheter ablation P596  
*S.H. Man, M. Lazdam, L. Clayton, I. Loke, R. Somani (Leicester, GB)*
- Sympathetic nervous system modulation to abolish recurrent ventricular fibrillation & intractable coronary spasm P597  
*V. Malik, F.A. Mohammadi, D.P. Chew, D.H. Lau, P. Sanders, A.D. McGavigan, J. Vaile (Adelaide, AU)*
- Ablation of premature ventricular contractions originating from a diverticulum of the right ventricular outflow tract: a case report P598  
*L. Yang, J. He, Y. Tian, Y. Zheng (Guiyang, CN)*

- Mapping and ablation of slow conduction potentials as an effective end-point of ischemic ventricular tachycardia ablation: a novel approach P599  
*R.O.Y. Lan, E. Johnson, J. Cui, J. Kerlan, C. Ingelmo, M. Coppres, D. Lan (Memphis, TN and Memphis, US)*
- Stellate ganglion blocks on recurrent ventricular arrhythmias P600  
*A.A. Yakubov, R.R. Hamrayev, O.S. Salaev, B.I. Narziev, R.R. Yarbekov, S.K.H. Omonov, T.Z. Vakhidov, G.U. Mullabaeva, F.M. Bekmetova, R.D. Kurbanov (Tashkent, UZ)*
- A case series: mapping and ablation of premature ventricular complexes in pulmonary artery P601  
*M. Barmada, P. Mar, J.M. Miller, R. Jain (Indianapolis, US)*

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POSTER SESSION

POSTERS

### Poster Session 1 - 43rd EWGCCE Meeting

#### Session from the 43<sup>rd</sup> Annual Meeting of the ESC Working Group on Cardiac Cellular Electrophysiology

- The hidden electrophysiological cardiotoxic effects of rofecoxib are prevented by ischaemic preconditioning P602  
*Z. Husti, R.S. Varga, G. Brenner, P. Bencsik, Z. Giricz, A. Gorbe, R. Shulz, A. Varro, P. Ferdinandy, I. Baczko (Szeged and Budapest, HU; Giessen, DE)*
- A high-throughput system to reliably characterize normal human ventricular electrophysiology from living patients P603  
*A. Oliván-Viguera, J. Fernández-Bes, M.A. Marigil, J.M. Vallejo-Gil, C. Ballerter-Cuenca, E. Pueyo (Zaragoza and Huesca, ES)*
- Pros and cons of human iPSC cardiomyocytes in drug testing and disease modelling: insights from computational modelling P604  
*J.T. Koivumäki, M. Paci, J. Hyttinen (Tampere, FI)*
- Advanced morpho-functional analysis on ventricular and atrial tissue reveals sarcomere energetic impairment in hcm patients P605  
*E. Lazzeri, G. Vitale, F. Giardini, I. Costantini, G. Mazzamuto, C. Ferrantini, C. Tesi, F.S. Pavone, C. Poggesi, L. Sacconi (Sesto Fiorentino, Florence and Florence, IT)*
- Istaroxime improves diabetic diastolic dysfunction through SERCA stimulation P606  
*E. Torre, A.M. Lodrini, P. Barassi, M. Ferrandi, E. Boz, C. Bussadori, P. Ferrari, G. Bianchi, M. Rocchetti (Milan, IT; Taipei, TW)*
- Mechanism of sinus node dysfunction in carriers of the E161K mutation in the SCN5A gene P607  
*R. Wilders (Amsterdam, NL)*
- Blockade of the adenosine 2A receptor mitigates the cardiomyopathy induced by loss of plakophilin-2 expression P608  
*C. J. M. Van Opbergen, K. Malkani, N. Irrera, M. Zhang, T.A.B. Van Veen, B. Cronstein, M. Delmar, M. Cerrone (Utrecht, NL; New York, US; Messina, IT)*
- Distinct effect on Ca<sup>2+</sup> cycling depending on the level of cardiac specific FKBP12.6 overexpression P609  
*M. Gandon-Renard, F. Lefebvre, D. Courilleau, S. Gomez, P. Gerbaud, A.M. Gomez, J.J. Mercadier (Chatenay-Malabry, FR)*
- A clinically applicable method for the identification of slow electrical conduction using rescaled electrograms P610  
*J. Winter (Birmingham, GB)*
- Transgenic LQT5, LQT2 and LQT2-5 rabbit models with decreased repolarization reserve for more reliable prediction of drug induced ventricular arrhythmias P611  
*T. Hornyik, A. Castiglione, G. Franke, S. Perez-Feliz, P. Major, L. Hiripi, G. Koren, Z.S. Bosze, A. Varro, M. Brunner, C. Bode, I. Baczko, K. Odening (Freiburg, DE; Gödöllo and Szeged, HU; Providence, US)*
- Caval vein myocardium demonstrates automaticity and properties of a leading pacemaker P612  
*A. D. Ivanova, V.S. Kuzmin, T.S. Filatova (Moscow, RU)*
- A platform for assessing pro- and anti-arrhythmic effects of drugs based on isogenic human iPSC-derived cardiomyocytes P613  
*G. Camprostrini, L. Sala, D. Ward-Van Oostwaard, B.J. Van Meer, L.G.J. Tertoolen, O. Bartulos-Encinas, S.R. Braam, A.P. Ijzerman, C.L. Mummery, M. Bellin (Leiden, NL)*
- Nanokicking promotes cell adhesion complex formation in human induced pluripotent stem cell-derived cardiomyocytes P614  
*A. Costa, P. Childs, M. Salmeron-Sanchez, M. Dalby, G. L. Smith (Glasgow, GB)*
- Aspects of oestrogen action on cardiomyocyte calcium homeostasis P615  
*E.G.H.E. Thong, J.M. Firth, A.J. Francis, N. Islam, H.-Y. Yang, K.T. Macleod (London, GB; Taipei, TW)*
- Mutation R591C associated with long QT syndrome type 1: clinical, genetic, and functional analysis P616  
*O. Svecova, M. Bebarova, L. Baiazitova, M. Policarova, J. Hosek, I. Andrsova, I. Valaskova, I. Synkova, R. Gaillyova, P. Vit, T. Novotny (Brno, CZ)*

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| <p>Oxytocin blocks IKs and IK1 - thus exerting harmful cardiac repolarization prolonging effects particularly in context of drug-induced LQTS</p>    | <p>P617</p> |
| <p><i>P. Kreifels, I. Bodi, G. Franke, S. Perez-Feliz, A. Castiglione, D. Ziupa, M. Brunner, C. Bode, K.E. Odening (Freiburg, DE)</i></p>            |             |
| <p>INa characterization from compound variants in SCN5A from a large founder population with excess sudden cardiac death</p>                         | <p>P618</p> |
| <p><i>C. Altrocchi, R.L. Spatjens, H. Sutanto, R.M. Ter Bekke, S. Seyen, J. Heijman, C. Moreno, P.G. Volders (Maastricht, NL; Baltimore, US)</i></p> |             |
| <p>Molecular and functional mapping of cardiac electrophysiological differentiation</p>  | <p>P619</p> |
| <p><i>J. Liu, B. Akerboom, R. Tsonaka, H. Mei, M. Schlij, D. Pijnappels, A. De Vries (Leiden, NL)</i></p>  |             |
| <p>Optical membrane potential acquisition in human atrial engineered heart muscle constructs and human atrial biopsies.</p>                          | <p>P620</p> |
| <p><i>F. Seibertz, R.A. Solano, K. Ort, L. Cyganek, I. Kutschka, W.H. Zimmermann, N. Voigt (Göttingen, DE)</i></p>                                   |             |

## Monday 18 March



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of Cardiology



08:00 - 08:25 MAIN SESSION MOBITZ

### EHRA expert consensus papers - Key messages 1

**Chairperson(s): P.S.C. Cunha (Lisbon, PT); T.S. Potpara (Belgrade, RS)**

*This session will cover the key messages of the recent EHRA expert consensus paper on the subject.*

08:00 › Integrating new approaches to atrial fibrillation management 621  
*D. Kotecha (Birmingham, GB)*

08:30 - 10:00 MAIN SESSION SOKOLOV

### Late-breaking trials 2

**Chairperson(s): C. Leclercq (Rennes, FR); A. Auricchio (Lugano, CH)**

08:30 › The world-wide randomized antibiotic envelope infection prevention trial (WRAP-IT) to reduce cardiac implantable electronic device infection 622  
*B. L. Wilkoff (Cleveland, US)*

08:40 › WRAP-IT - Discussion 623  
*M. Biffi (Bologna, IT)*

08:45 › Speckle tracking radial strain imaging-guided lead placement for improving response to CRT in patients with ischemic CMP- the raise CRT trial 624  
*M. Glikson (Jerusalem, IL)*

08:55 › Speckle tracking radial strain imaging-guided lead placement for improving response to CRT in patients with ischemic CMP- the raise CRT trial - Presentation - Discussion 625  
*F. Leyva (Birmingham, GB)*

09:00 › Targeting left ventricular lead implantation towards the latest electrical activation improves left ventricular ejection fraction in cardiac resynchronization therapy: a randomized controlled trial 626  
*C. Stephansen (Aarhus N, DK)*

09:10 › Targeting left ventricular lead implantation towards the latest electrical activation improves left ventricular ejection fraction in cardiac resynchronization therapy: a randomized controlled trial - Discussion 627  
*K. Ellenbogen (Richmond, US)*

09:15 › A prospective randomised controlled trial of cardiac resynchronisation therapy guided by invasive LV dP/dt 628  
*M. Sohal (London, GB)*

09:25 › A prospective randomised controlled trial of cardiac resynchronisation therapy guided by invasive LV dP/dt - Discussion 629  
*P. P. H. M. Delnoy (Zwolle, NL)*

09:30 › Remote supervision to decrease hospitalization rate study (RESULT) in patients with heart failure and implanted cardioverter-defibrillator or cardiac resynchronization therapy. 630  
*M. Tajstra (Zabrze, PL)*

09:40 › Remote supervision to decrease hospitalization rate study (RESULT) in patients with heart failure and implanted cardioverter-defibrillator or cardiac resynchronization therapy - Discussion 631  
*M. R. Cowie (London, GB)*

09:45 › Panel discussion. 632

08:30 - 10:00 SPECIAL SESSION SENNING

### How to interpret difficult ECGs and intracardiac electrograms

Special Session, Mobile App interactive session - Ask questions



**Chairperson(s): J. Brugada Terradellas (Barcelona, ES); M. Borggreffe (Mannheim, DE)**

To interpret and discuss important and difficult ECG pathologies and intracardiac tracings, and to translate the ECG interpretation into clinical practice

08:30 › How to interpret difficult ECGs and intracardiac electrograms - Part 1 633  
J. Brugada Terradellas (Barcelona, ES)

09:15 › How to interpret difficult ECGs and intracardiac electrograms - Part 2 634  
M. Borggreffe (Mannheim, DE)

08:30 - 10:00 HOW-TO SESSION WENCKEBACH

### Tips and tricks for a successful re-do after failed CRT implantation - A case-based approach

**Chairperson(s): M. Lunati (Milano, IT)**

Experts in the field cardiac resynchronization therapy (CRT) will review and discuss their implantation strategies to overcome obstacles encountered during a failed CRT implantation.

08:30 › Cardiac imaging for planning redo cases 635  
A. Rinaldi (London, GB)

08:52 › Snaring, ballooning and more 636  
T. Steen (Oslo, NO)

09:15 › Catheters, sub-selectors and leads 637  
A. Rao (Warrington, GB)

09:37 › Planning a redo in patients with congenital heart disease 638  
C. Love (Baltimore, US)

08:30 - 10:00 MAIN SESSION MOBITZ

### EHRA expert consensus papers - Key messages 2

**Chairperson(s): H. Tanner (Bern, CH); B. Goronja (Banjaluka, BA)**

This session overviews recent EHRA consensus papers in the domain of atrial fibrillation and related disorders.

08:30 › The known knowns and the known unknowns of cardiac arrhythmia - The EHRA White Paper 639  
A. Goette (Paderborn, DE)

08:52 › EHRA/ EAPCI expert consensus statement on catheter-based left atrial appendage occlusion - An update 640  
M. Glikson (Jerusalem, IL)

09:15 › Asymptomatic cardiac arrhythmias - Approach, evaluation, consequences and management 641  
D.O. Arnar (Reykjavik, IS)

09:37 › Arrhythmias in elderly and frailty syndrome 642  
S. Fumagalli (Florence, IT)

08:30 - 10:00

HOW-TO SESSION

MIROWSKI

**My complications during atrial fibrillation ablation - What should and what should not be repeated**Mobile App interactive session - Ask questions **Chairperson(s): F. Arribas (Madrid, ES); A. S. Revishvili (Moscow, RU)***Complications are inherent to invasive procedures. The aim of this case-based session is to learn how to avoid atrial fibrillation ablation-related complications starting from a representative case.*

- |         |   |     |
|---------|---|-----|
| 08:30 › | Vascular complication<br>C. Wolpert (Ludwigsburg, DE)                     | 643 |
| 08:48 › | Tamponade<br>K.R. J. Chun (Frankfurt, DE)                                 | 644 |
| 09:06 › | Stroke<br>L. Di Biase (New York, US)                                      | 645 |
| 09:24 › | Oesophageal fistula<br>H. Purerfellner (Engerwitzdorf, AT)                | 646 |
| 09:42 › | Panel discussion<br>B. Antolic (Veliki Gaber, SI); P. Balsam (Sadowa, PL) | 647 |

08:30 - 10:00

MAIN SESSION

FURMAN

**Typical atrial flutter - Not always a piece of cake**Joint session with Cardiac Arrhythmia Society of Southern Africa (CASSA) **Chairperson(s): H. Burri (Geneva, CH); A. Chin (Cape Town, ZA)***Typical atrial flutter ablation is a frequent procedure in the EP lab, but may not always be easy. This joint session with CASSA overviews different as*

- |         |  |     |
|---------|--|-----|
| 08:30 › | Distinguishing typical from atypical flutter on the ECG<br>A. Chin (Cape Town, ZA)                     | 648 |
| 08:52 › | Endpoints to validate bidirectional block<br>F. G. Cosio (Getafe, ES)                                  | 649 |
| 09:15 › | Contexts associated with difficult cavo-tricuspid isthmus ablation<br>I. W. P. Obel (Johannesburg, ZA) | 650 |
| 09:37 › | Tools and techniques to facilitate typical flutter ablation<br>M. Scaglione (Asti, IT)                 | 651 |

08:30 - 10:00

SPECIAL SESSION

COUMEL

**Sudden cardiac death in sports activities**Special Session in collaboration with the European Sudden Cardiac Arrest network: towards Prevention, Education, New Effective Treatment (ESCAPE-NET) **Chairperson(s): H. Heidbuchel (Antwerp, BE); S. Chugh (Los Angeles, US)***This session will focus on the clinically and societally important issue of sudden cardiac death in sports activities from detection of individuals at risk to appropriate therapy. The session is held in collaboration with ESCAPE-NET, an EU- funded network for sudden cardiac arrest research.*

Grant Agreement number: 733381

- |         |   |     |
|---------|---|-----|
| 08:30 › | Alarming electrocardiogram features in athletes<br>F. Carre (Rennes, FR)    | 652 |
| 08:52 › | Eligibility and disqualification for competition<br>A. Pelliccia (Rome, IT) | 653 |

(to be continued)

(continued)

- 09:15 › ICDs in athletes 654  
R. Lampert (New Haven, US)
- 09:37 › Awareness of alarming symptoms just before cardiac arrest - Can we learn from ESCAPE-NET? 655  
X. Jouven (Paris, FR)

08:30 - 10:00 SYMPOSIUM HIS

### Intracellular calcium (dys)regulation and cardiac remodeling

Session from the 43<sup>rd</sup> Annual Meeting of the ESC Working Group on Cardiac Cellular Electrophysiology

Chairperson(s): C. Molina (Hamburg, DE); F.R. Heinzel (Berlin, DE)

- 08:30 › Spatial control of microdomain calcium release by adrenergic signalling in atrial fibrillation 656
- 08:48 › The role of na/ca exchanger in the ca-governed alternants in canine and human myocardium 657  
J. Szlovak, N. Toth, P. Gazdag, J. Prorok, J. Tomoek, L. Virag, J.G.Y. Papp, A. Varro, N. Nagy (Szeged, HU; Oxford, GB)
- 09:06 › Characterization of changes in ca<sup>2+</sup> handling and contractile function in a rat model of exercise-induced cardiac hypertrophy 658  
P. Gazdag, T. Hartai, V. Demeter-Haludka, B. Ordog, J. Szlovak, Z.S. Nagy, N. Nagy, K. Acsai, B. Barta, A. Olah, T. Radovits, B. Merkely, J.G.Y. Papp, A. Varro, J. Prorok (Szeged and Budapest, HU)
- 09:24 › Differentiating the exercise-induced effects of acute beta-adrenergic stimulation and stretch on calcium and force dynamics using a novel electromechanical cardiomyocyte model 659  
A. Lyon, L.J. Dupuis, T. Arts, T. Delhaas, F.W. Prinzen, J. Heijman, J. Lumens (Maastricht, NL)

08:30 - 10:00 SYMPOSIUM DAMATO

### Lead extraction - Snares, mechanical devices, laser and more

Chairperson(s): L. Saghy (Szeged, HU); F. Regoli (Lugano, CH)

This session will provide an up-to-date review of techniques and technologies for managing lead and device management issues in daily practice.

- 08:30 › Extracting a leadless pacemaker 661  
R.E. Knops (Amsterdam, NL)
- 08:52 › Redundant leads 662  
B. L. Wilkoff (Cleveland, US)
- 09:15 › Occluded veins - Alternatives and solutions 663  
S. Worley (Earleville, US)
- 09:37 › Replacing a coronary vein lead - An easy job with the right tools! 664  
G. Mascioli (Roncadelle, IT)

08:30 - 10:00 SYMPOSIUM AGORA

### Science and insights into the best arrhythmia journal on the planet - News from Europace

Chairperson(s): A. J. Camm (London, GB); G. Hindricks (Leipzig, DE)

To provide the audience with practical advice on publishing scientific papers and also with a summary of the most important reports on research and education in the major fields of arrhythmias as published in Europace.

- 08:30 › How to get your paper published - Tips and tricks from the Editor-in-Chief 665  
G. Hindricks (Leipzig, DE)
- 08:52 › The best from science and education - Atrial fibrillation 666  
I. C. Van Gelder (Groningen, NL)

(to be continued)

(continued)

09:15 › The best from science and education - Ventricular tachycardia 667  
A. Arya (Leipzig, DE)

09:37 › The best from science and education - Cardiac devices 668  
N. Dagues (Leipzig, DE)

10:00 - 10:50 SPECIAL SESSION MOBILITZ

**Meet my patient 2**

**Chairperson(s): H. Heidbuchel (Antwerp, BE); H. Burri (Geneva, ST)**

10:00 › My Patient with an ICD: creatively provocative 669  
H. Heidbuchel (Antwerp, BE)

10:16 › How to wear GUCHy (heart) 670

10:05 - 10:55 SPECIAL SESSION INNOVATIONS STAGE - LEVEL 1

**EHRA Innovation Stage 2**

Special Session



**Chairperson(s): F. Prinzen (Maastricht, NL)**

Judge(s): G. A. Dan (Bucharest, RO); M.M. Farkowski (Warsaw, PL); M. Finlay (London, GB)

10:05 › Multi-lumen silicone tube for esophageal cooling and warming 672  
E Kulstad (Dallas, US)

10:15 › Surface Microengineered Biosynthesized Cellulose for improved surgical pocket health 673  
F Robotti (Zurich, CH)

10:25 › Development of novel ultra-low temperature cryoablation catheters 674  
DM Cabrita (Brussels, BE)

10:35 › Panel discussion 675

10:05 - 10:55 MODERATED POSTERS MODERATED EPOSTER 1

**Moderated ePosters 7: contemporary cardiac resynchronization therapy: is there room for improvement?**

**Chairperson(s): M. Lunati (Milano, IT); F. Leyva (Birmingham, GB)**

Moderated posters are on display at their assigned Moderated Poster Session from 08:30 - 12:30  
Presentation and discussion moderated by the chairpersons take place between 10:05 - 10:55

3D vectorcardiography confirms electrical synchronization achieved by dynamic programming of  
atrioventricular delay 677  
F. W. Prinzen, E.B. Engels, B. Thibault, J. Mangual, N. Badie, L. Mcspadden, L. Calo, P. Ritter, C. Pappone,  
K. Bode (Maastricht, NL; Montreal, CA; Minneapolis, US; Rome and San Donato Milanese, IT;  
Bordeaux-Pessac, FR; Leipzig, DE)

Use of echocardiography, cardiac CT and cardiac MR to guide left ventricular lead placement in cardiac  
resynchronization therapy 678  
R. Borgquist, M. Carlsson, H. Markstad, A. Werther-Evaldsson, E. Ostenfeld, A. Roijer (Lund, SE)

Assessment of myocardial electrical dyssynchrony by noninvasive activation mapping and its role in achieving the  
success of cardiac resynchronization therapy 679  
S. Kashtanova, M. Utsumueva, N. Mironova, E. Gupalo, S. Gaman, M. Saidova, S. Golitsyn (Moscow, RU)

A feasibility study comparison of three dimensional noninvasive computer angiography with intaprocedural occlusive  
coronary sinus venography in patients scheduled for CRT implantation 680  
V. V. Grokhotova, S. V. Zubarev, M. P. Chmelevsky, V. A. Marinin (Saint-Petersburg and Saint Petersburg, RU;  
Yverdon-les-Bains, CH)

(to be continued)

(continued)

- Speckle tracking radial strain imaging-guided lead placement for improving response to crt in patients with ischemic cardiomyopathy 681  
*M. Glikson, G. Golovchiner, M. Swissa, M. Boulus, S. Viskin, A. Medina, M. Haim, P. Friedman, V. Khalameizer, O. Vatury, I. Saki, N. Shlomo, J. Oh, I. Goldenberg, R. Beinart (Jerusalem, Petah Tikva, Rehovot, Haifa, Tel Aviv, Beer Sheva, Ashkelon and Ramat Gan, IL; Rochester, US)*
- Current use of CRT in patients with atrial fibrillation - Data from the ESC/EHRA/HFA Survey II 682  
*C. Stellbrink, C. Linde, K. Dickstein, C. Normand, N. Bogale, M. Gasparini, C. Sticherling, M. Gwechenberger, M. Sterlinski, C. Blomstroem-Lundqvist, R. Sheahan, G. Filippatos (Bielefeld, DE; Stockholm and Uppsala, SE; Stavanger, NO; Milan, IT; Basel, CH; Vienna, AT; Warsaw, PL; Cork, IE; Athens, GR)*
- Fibrosis and apoptosis in different aetiologies of cardiomyopathy and their role in response to cardiac resynchronisation therapy 683  
*F. Schiedat, A. Ewers, P. Mueller, B. Boesche, S. Schoene, A. Aweimer, A. Muegge, A. Kloppe (Bochum, DE)*
- When CRT is used in patients with narrow QRS complex - evidence from the ESC/EHRA/HFA CRT Survey II 684  
*D. Lawin, C.M. Linde, K. Dickstein, C. Normand, N. Bogale, M. Gasparini, C. Sticherling, M. Gwechenberger, M. Sterlinski, C. Blomstroem-Lundqvist, R. Sheahan, G. Filippatos, C. Stellbrink (Bielefeld, DE; Stockholm and Uppsala, SE; Stavanger, NO; Milan, IT; Basel, CH; Vienna, AT; Warsaw, PL; Cork, IE; Athens, GR)*

10:05 - 10:55

MODERATED POSTERS

MODERATED EPOSTER 2

**Moderated ePosters 8: channelopathies & cardiomyopathies****Chairperson(s): C. R. Bezzina (Amsterdam, NL); C. Wolpert (Ludwigsburg, DE)***Moderated posters are on display at their assigned Moderated Poster Session from 08:30 - 12:30**Presentation and discussion moderated by the chairpersons take place between 10:05 - 10:55*

- Ethnical differences in patients with brugada syndrome and arrhythmic events: new insights from sabrus 685  
*A. Milman, J.J.M. Juang, M. Takagi, E.R. Behr, F. Gaita, G.X. Yan, J. Brugada, A. Leenhardt, A.A.M. Wilde, P. Brugada, K.F. Kusano, K. Hirao, G.B. Nam, V. Probst, B. Belhassen (Tel Hashomer and Tel Aviv, IL; Taipei, TW; Osaka and Tokyo, JP; London, GB; Torino, IT; Wynnewood, US; Barcelona, ES; Paris and Nantes, FR; Amsterdam, NL; Brussels, BE; Seoul, KR)*
- Genotype-phenotype correlations in patients with arrhythmogenic cardiomyopathy: results from next generation sequencing in a large multicenter cohort 686  
*A.M. Saguner, K. Chen, J. Song, Y.Z. Zhang, Q.H. Hu, M.R. Rao, D. Akdis, C.B. Bruckhorst, A.M. Domingo, S. Hu, F. Duru (Zurich, CH; Beijing, CN)*
- Safety of general anesthesia in brugada syndrome 687  
*G. Ciconte, M. Conti, T. Aloisio, W. Castracane, V. Borrelli, M. Ranucci, G. Vicedomini, V. Santinelli, C. Pappone (San Donato Milanese, IT)*
- Risk of progression to malignant ventricular arrhythmias in carriers of the cardiomyopathy causing (PLN) p.Arg14del mutation 688  
*T.E. Verstraelen, F.H.M. Van Lint, L.P. Bosman, F.W. Asselbergs, P.A. Van Der Zwaag, M.P. Van Den Berg, J.P. Van Tintelen, A.A.M. Wilde (Amsterdam, Utrecht and Groningen, NL)*
- Prognostic implications of non-sustained ventricular tachycardia morphology in high-risk patients with hypertrophic cardiomyopathy 689  
*C. Adduci, F. Palano, B. Musumeci, C. De Lucia, C. Tarsia, A.C. Pingitore, M. Volpe, C. Autore, P. Francia (Rome, IT)*
- Large repolarization gradients increase susceptibility to trigger-induced arrhythmias and are not reflected by QT time 690  
*M. J. M. Cluitmans, L. Bear, E. Abell, C. Belterman, P. Volders, R. Coronel, R. Dubois (Maastricht, NL; Bordeaux, FR)*
- Short QT phenotype in a family with genetic variants in the KCNH2 and SLC4A3 genes - The role of prediction tools, whole exome sequencing and genetic cascade screening 691  
*B. Kovacs, U. Graf, I. Magyar, F. Duru, W. Berger, A.M. Saguner (Zurich, CH)*
- Phenotypical heterogeneity of a (p.leu729del) scn5a founder mutation. 692  
*R.W. Roudijk, K.P. Loh, J.F. Van Der Heijden, M.F. Scholten, A.A.M. Wilde, F.W. Asselbergs, A.S.J.M. Te Riele, J.P. Van Tintelen (Utrecht, Enschede and Amsterdam, NL)*

10:05 - 10:55

MODERATED POSTERS

MODERATED EPOSTER 3

**Moderated ePosters 9: new basic arrhythmia insight from around the world****Chairperson(s): N. Trayanova (Baltimore, US); A. de Vries (Leiden, NL)***Moderated posters are on display at their assigned Moderated Poster Session from 08:30 - 12:30**Presentation and discussion moderated by the chairpersons take place between 10:05 - 10:55*

- Pharmacological inhibition of NHE3 dependent intestinal sodium absorption reduced arrhythmogenic remodelling in rats 693  
R. S. Mishima, A.D. Elliott, M. Hohl, D.H. Lau, R. Mahajan, M. Bohm, P. Sanders, D. Linz (Adelaide, AU; Homburg, DE)
- Antiarrhythmic action of melatonin is associated with its effects on ventricular spatiotemporal depolarization pattern 694  
K. Sedova, O. Bernikova, M. Pliss, E. Lopatina, M. Vaykshnorayte, J. Azarov (Prague, CZ; Syktyvkar and St Petersburg, RU)
- An N-/L-type calcium channel blocker, cilnidipine, reduces electrical and structural atrial remodeling associated with atrial fibrillation in a chronic dog model 695  
J.-B. Guichard, K. Tajiri, F. Xiong, A. Da Costa, S. Nattel (Montreal, CA; Saint-Etienne, FR)
- Gene expression changes in a novel mouse model of dyssynchrony and resynchronization in heart failure 696  
M. Stahlberg, R. Nakagawa, D. Bedja, G. Zhu, B. Lin, D. Lee, A. Saberi, D.A. Kass (Stockholm, SE; Baltimore, US)
- Gap junction modulation is a major determinant of the mechanism and organisation of ventricular fibrillation and a potential therapeutic target 697  
B. S. Balvinder, X. Li, C. H. Roney, D. Pitcher, R. A. Chowdhury, N. S. Peters, F. S. Ng (London, GB)
- Independent sources of initial atrial activity as the cause of arrhythmia in a rat model of alcoholic cardiomyopathy 698  
L. Kolik, I.M. Roshchevskaya, S.L. Smirnova, L.M. Kozhevnikova, A.D. Durnev, S.A. Kryzhanovskii (Moscow and Syktyvkar, RU)
- Side-specific differences in atrial tissue expression are associated with atrial fibrillation and heart failure: the CATCH ME Consortium 699  
A. Isaacs, S. Zeemering, J. Winters, W. Chua, M.F. Sinner, L. Mont, H. Crijns, L. Fabritz, S. Kaab, E. Guasch, S. Hatem, B. Casadei, P. Kirchhof, U. Schotten, M. Stoll (Maastricht, NL; Birmingham and Oxford, GB; Munich, DE; Barcelona, ES; Paris, FR)
- Realistic simulation modeling for atrial fibrillation reflecting personal anatomy, histology, and electrophysiology 700  
B. Lim, J. Kim, M. Hwang, J.S. Song, J.K. Lee, H.T. Yu, T.H. Kim, J. Uhm, B. Joung, M.H. Lee, H.N. Pak (Seoul, KR)

10:15 - 10:45

SATELLITE SYMPOSIUM - EXPERTS ON THE SPOT

DAMATO

**Unlock your lab's potential with cryoballoon ablation****Sponsored by Medtronic****Chairperson(s): C. Tondo (Milan, IT)***Learn how ablation of atrial fibrillation using the cryoballoon improves efficiency in the catheter laboratory and leads to improved outcomes in both paroxysmal as well as persistent atrial fibrillation patients.*

- 10:15 › Introduction - Unlock your lab's potential with cryoballoon ablation. 701  
C. Tondo (Milan, IT)
- 10:20 › Improve your cryoballoon Atrial Fibrillation (AF) practice by challenging clinical routines. 702  
T. A. Simmers (Eindhoven, NL)
- 10:30 › Cryoballoon ablation: an early approach to persistent AF improves efficiency & outcomes. 703  
J. Moreno Planas (Madrid, ES)
- 10:40 › Discussion and conclusion - Unlock your lab's potential with cryoballoon ablation. 704  
C. Tondo (Milan, IT)

10:15 - 10:45 SATELLITE SYMPOSIUM - EXPERTS ON THE SPOT AGORA

### Cybersecurity: a commitment to patients, a commitment to you

Sponsored by Abbott

Chairperson(s): C. Leclercq (Rennes, FR)

Discussion on good practices on security hygiene

10:15 › Best practices on security hygiene. 705  
C. Leclercq (Rennes, FR)

11:00 - 12:30 MAIN SESSION SOKOLOV

### My favourite approach for haemodynamically unstable ischaemic and non-ischaemic ventricular tachycardia ablation - Short answers to 5 questions

Chairperson(s): P. Della Bella (Milan, IT); K. Shivkumar (Los Angeles, US)

To learn different approaches to VT ablation according to different substrates and to understand the advantages and limitations of technical developments

11:00 › My favourite approach for haemodynamically unstable ischaemic and non-ischaemic ventricular tachycardia ablation 706  
K. Soejima (Tokyo, JP)

11:22 › My favourite approach for haemodynamically unstable ischaemic and non-ischaemic ventricular tachycardia ablation 707  
M. Saba (New Malden, GB)

11:45 › My favourite approach for haemodynamically unstable ischaemic and non-ischaemic ventricular tachycardia ablation 708  
P. Maury (Toulouse, FR)

12:07 › My favourite approach for haemodynamically unstable ischaemic and non-ischaemic ventricular tachycardia ablation 709  
A. Arenal Maiz (Madrid, ES)

11:00 - 12:30 SPECIAL SESSION SENNING

### Honorary lecture

Special Session



Chairperson(s): H. Heidbuchel (Antwerp, BE); A. J. Camm (London, GB)

11:00 › Intercontinental lecture - Ventricular tachycardia ablation 710  
F. Marchlinski (Philadelphia, US)

11:30 › Einthoven Lecture - Electrophysiology in a humanitarian context 711  
M. Zimmermann (Meyrin (Geneve), CH)

12:00 › Einthoven Lecture - Pacing in a humanitarian context 712  
C. W. Israel (Bielefeld, DE)



11:00 - 12:30 MAIN SESSION WENCKEBACH

### Handling challenging clinical situations in CRT

**Chairperson(s): P.P. Adragao (Carnaxide, PT); M. Chudzik (Lodz, PL)**

*Patients referred for cardiac resynchronization therapy frequently have multiple disease states which require medical know-how to manage. This session will help attendees to develop clinical strategies to address all these challenging situations.*

11:00 ›	Multiple co-morbidities - A reason for CRT denial?	713
11:22 ›	Right ventricular dysfunction in CRT - What to do? <i>F. Leyva (Birmingham, GB)</i>	714
11:45 ›	Atrial fibrillation - Treat before CRT implantation? <i>S. Mittal (New York, US)</i>	715
12:07 ›	Electrical storm - Reprogramming, drugs, ablation, denervation or transplantation? <i>M. Field (Charleston, US)</i>	716

11:00 - 12:30 DEBATE SESSION MOBITZ

### Debates in cardiac pacing

Mobile App interactive session - Ask questions 

**Chairperson(s): N. Antonio (Coimbra, PT); G. L. Botto (Rho, IT)**

*To enable a personalized pacemaker programming in patients with mild to moderate AV conduction disease. Understanding the true advantage of a leadless pacemaker and its cost effectiveness.*

11:00 ›	Opening question	717
11:05 ›	Intrinsic conduction enhancement in bradycardia pacing - How far to go? Until Wenckebach comes? <i>A. Quesada Dorador (Valencia, ES)</i>	718
11:15 ›	Intrinsic conduction enhancement in bradycardia pacing - How far to go? Wait for the long PR - I'll be there <i>M. Stockburger (Nauen, DE)</i>	719
11:25 ›	Rebuttal <i>A. Quesada Dorador (Valencia, ES)</i>	720
11:30 ›	Rebuttal <i>M. Stockburger (Nauen, DE)</i>	721
11:35 ›	Chairperson conclusion & closing question	722
11:45 ›	Opening question	723
11:50 ›	For the typical VVIR pacemaker recipient, leadless pacing is just a gimmick <i>D. J. Wright (Liverpool, GB)</i>	724
12:00 ›	For the typical VVIR pacemaker recipient, leadless pacing is an invaluable tool <i>P. P. H. M. Delnoy (Zwolle, NL)</i>	725
12:10 ›	Rebuttal <i>D. J. Wright (Liverpool, GB)</i>	726
12:15 ›	Rebuttal <i>P. P. H. M. Delnoy (Zwolle, NL)</i>	727
12:20 ›	Chairperson conclusion & closing question	728

11:00 - 12:30 SPECIAL SESSION MIROWSKI

**Live case session - Mapping and ablation of left atrial macroreentrant tachycardias**

Special Session



**Chairperson(s): P. Jais (Bordeaux, FR); P.S. Sanders (Adelaide, AU)**

*To witness state of the art technology being used by experts for treating left atrial macro-reentrant tachycardia*

- |         |  |     |
|---------|--|-----|
| 11:00 > | Live from Madrid - LAMRT mapped with CARTO3 and a high definition multispline catheter.                | 729 |
| 11:30 > | Live in the box - LAMRT mapped Precision and a grid catheter<br><i>I. Deisenhofer (Munich, DE)</i>     | 730 |
| 12:00 > | Live in the box - Left atypical flutter mapped with the Rhythmia system<br><i>D. Shah (Geneva, CH)</i> | 731 |

11:00 - 12:30 MAIN SESSION FURMAN

**What it is my standard workflow for paroxysmal atrial fibrillation ablation? Short answers to 5 questions**

**Chairperson(s): H. Purerfellner (Engerwitzdorf, AT); C. Scharf (Zurich, CH)**

*Catheter ablation of AF requires a strict procedural workflow in the cathlab. The objective of this main session is to discuss the different approaches being used in various cathlabs. Each operator will respond to the same set of 5 pre- defined questions.*

- |         |  |     |
|---------|--|-----|
| 11:00 > | My standard workflow<br><i>S. Richter (Leipzig, DE)</i>    | 732 |
| 11:22 > | My standard workflow<br><i>G. B. Chierchia (Jette, BE)</i> | 733 |
| 11:45 > | My standard workflow<br><i>O. Wazni (Cleveland, US)</i>    | 734 |
| 12:07 > | My standard workflow<br><i>M. Grimaldi (Bari, IT)</i>      | 735 |

11:00 - 12:30 MAIN SESSION COUMEL

**Latest developments in inherited cardiac conditions**

**Chairperson(s): S. Kaab (Munich, DE); P.J. Schwartz (Milan, IT)**

*Provide newest developments in the common inherited cardiac conditions & how they may change practice.*

- |         |   |     |
|---------|---|-----|
| 11:00 > | Brugada syndrome - New insight from genetic studies<br><i>C. R. Bezzina (Amsterdam, NL)</i>                                       | 736 |
| 11:22 > | Latest insights from the catecholaminergic polymorphic ventricular tachycardia (CPVT) registry<br><i>A. Leenhardt (Paris, FR)</i> | 737 |
| 11:45 > | Arrhythmogenic cardiomyopathy - Implications of new task force criteria<br><i>A. S. J. M. Te Riele (Utrecht, NL)</i>              | 738 |
| 12:07 > | Unexplained sudden death<br><i>M. Ackerman (Rochester, US)</i>  | 739 |

11:00 - 12:30 MAIN SESSION HIS

### Exploration of novel anti-fibrillatory strategies - A joint PhD-MD effort

Session from the 43<sup>rd</sup> Annual Meeting of the ESC Working Group on Cardiac Cellular Electrophysiology

Chairperson(s): L. Fabritz (Birmingham, GB); L. Gepstein (Haifa, IL)

The path from finding to application is challenging and often needs a team of professionals with different backgrounds. The aim of this main session is to learn about novel anti-fibrillatory strategies and to critically discuss their clinical need, translation and implementation.

11:00 ›	Next generation drugs for atrial fibrillation in humans - Good new chemistry D. Dobrev (Essen, DE)	740
11:18 ›	Molecular therapy for genetic arrhythmogenic diseases - A white coats' tandem S. G. Priori (Pavia, IT)	741
11:36 ›	Biological shockless defibrillation - True translational challenges D.A. Pijnappels (Leiden, NL)	742
11:54 ›	Low voltage electrotherapy for atrial arrhythmias - First-in-human I. Efimov (Washington, US)	743
12:12 ›	Panel discussion E. Mikhaylov (Saint-Petersburg, RU); C. Schmidt (Heidelberg, DE)	744

11:00 - 12:30 SPECIAL SESSION DAMATO

### Update on remote cardiac implantable electronic device management

Special Session organised with the EU regulatory affairs committee



Chairperson(s): J. Kautzner (Prague, CZ); N. Varma (Cleveland, US)

This joint session with the EU Regulatory Affairs Committee gives an overview of issues with remote CIED monitoring and provides solutions for clinical practice

Understand implications of new EU legislation on general data protection (GDPR), particularly regarding the management of cybersecurity and access to data

Learn about roles and responsibilities for patients and physicians with regard to data collection and processing

Discover why regulatory affairs activities are relevant for the cardiology community

11:00 ›	Cybersecurity - How big is the threat and how to be safe? Z. Erkin (Delft, NL)	745
11:22 ›	Dealing with consent and data protection - Responsibilities and liabilities J. Nielsen (Aarhus N, DK)	746
11:45 ›	How to deal with data dumping? R. Ricci (Rome, IT)	747
12:07 ›	Automatic data transfer from programmers and web-based platforms to electronic health records O. Piot (Saint-Denis, FR)	748

11:00 - 12:30

YOUNG INVESTIGATOR AWARD ABSTRACTS

AGORA

**Young Investigator Award - Clinical**

## Award Session

**Chairperson(s): M. Didenko (Saint - Petersburg, RU); L. Mont (Barcelona, ES)**

Judge(s): C. Leclercq (Rennes, FR); I. C. Van Gelder (Groningen, NL); S. Ernst (London, GB)

Young Investigators will present their abstract in competition for the EHRA 2019 Young Investigator Award Prize.

Results &amp; Winners will be announced and awarded with a diploma at the end of the session.

- 11:00 › Prolonged lead dwell time and increased number of leads extracted predict bailout transfemoral lead extraction 749  
J. Gould, B. Porter, B.J. Sieniewicz, B.S. Sidhu, S. Claridge, M. Kliss, T. Teall, S.E. Williams, A. Shetty, J. Gill, C.A. Rinaldi (London, GB)
- 11:15 › Phospholamban (PLN) p.Arg14del cardiomyopathy: insight into age-related penetrance of cardiac phenotype and malignant ventricular arrhythmias from a large multicenter registry 750  
T.E. Verstraelen, F.H.M. Van Lint, L.P. Bosman, F.W. Asselbergs, P.A. Van Der Zwaag, M.P. Van Den Berg, J.P. Tintelen, A.A.M. Wilde (Amsterdam, Utrecht and Groningen, NL)
- 11:30 › Long-term follow-up after an acute myocardial infarction to explore the stability of the arrhythmogenic substrate: the FOOTPRINT study 751  
B. Jauregui Garrido, D. Soto-Iglesias, V. Syrovnev, F. Zaraket, V. Hervas, D. Penela, J. Acosta, J. Fernandez-Armenta, S. Prat-Gonzalez, R.J. Perea, C. Teres, X. Bosch, J.T. Ortiz-Perez, A. Berruezo (Barcelona, Seville and Cadiz, ES; Piacenza, IT)
- 11:45 › Mechanisms of action of cardiac resynchronisation therapy by his bundle pacing in patients with heart failure and LBBB 752  
A.D. Arnold, M.J. Shun-Shin, D. Keene, J.P. Howard, S.M.A. Sohaib, I.J. Wright, A. Muthumala, M. Tanner, P. Kanagaratnam, N.S. Peters, D.P. Francis, Z.I. Whinnett (London, GB)
- 12:00 › Multi-size electrodes for (hidden) substrate identification in ischemic cardiomyopathy: validation by integration of whole heart histology 753  
C. A. Glashan, B.J. Tofiq, Q. Tao, S. Blom, M.R.M. Jongbloed, J.C. Nielsen, P. Lukac, S.B. Kristiansen, K. Zeppenfeld (Leiden, NL; Aarhus, DK)
- 12:15 › Ventricular arrhythmias in cardiac laminopathy: role of cardiac magnetic resonance in risk stratification 754  
G. Peretto, S. Benedetti, C. Di Resta, L. Gigli, C. Forleo, A. Barison, M. Ferrari, P. Della Bella, S. Sala (Milan, Bari and Pisa, IT)

12:45 - 13:45 SATELLITE SYMPOSIUM SOKOLOV

### Cardiac Resynchronization Therapy (CRT) pacing sites: on the journey to new places

Sponsored by MicroPort CRM

Chairperson(s): C. Piorkowski (Dresden, DE); A. Auricchio (Lugano, CH)

Cardiac resynchronization therapy is a highly effective pacing therapy in selected patients with heart failure. The location of the pacing site(s) on the Left Ventricle (LV) can be key to the success of the therapy. The session will review the challenges of defining and locating an appropriate LV pacing site in CRT (location and number). An anatomical feature of the coronary venous network will then be introduced as a new way to access unexplored LV pacing regions using an appropriate new micro-catheter guided lead. Finally we will look at how cardiac modeling might support the choice of a satisfactory LV pacing location in the future.

- 12:45 › Finding the right place on the left side.  
Is there a better Left Ventricle (LV) pacing site than the best fluoroscopic site? 759  
F. Leyva (Birmingham, GB)
- 13:05 › Opening a new route for LV pacing in CRT.  
Navigating the coronary venous collaterals system: the Axone project. 760  
F. Anselme (Rouen, FR)
- 13:25 › How will digitalization remodel the future?  
Cardiac modeling to optimize LV pacing sites. 761  
M. Sermesant (Sophia Antipolis, FR)

12:45 - 13:45 SATELLITE SYMPOSIUM SENNING

### Latest developments in implantable cardiac devices & patient management

Sponsored by Medtronic

Chairperson(s): J. Steffel (Zurich, CH); C. Leclercq (Rennes, FR)

Learn about the indications for and clinical results with his bundle pacing.

Learn how bluetooth technology in implantable cardiac devices enables communication with mobile devices and patient empowerment.

Learn about the latest real-world clinical results with a transcatheter pacing system.

- 12:45 › Introduction - Latest developments in implantable cardiac devices & patient management. 762  
C. Leclercq (Rennes, FR)
- 12:50 › His bundle pacing: which patients and what are the results? 763  
D. Keene (London, GB)
- 13:05 › New devices & app based patient management: bridging the gap between patients and physicians. 764  
A. Zaidi (Manchester, GB)
- 13:20 › Clinical experience with transcatheter pacing: where we are now and what is the future? 765  
A. Sultan (Cologne, DE)
- 13:35 › Conclusions - Latest developments in implantable cardiac devices & patient management. 766  
J. Steffel (Zurich, CH)

12:45 - 13:45 SATELLITE SYMPOSIUM WENCKEBACH

### Treating heart failure (HF) with device therapies : what's new?

Sponsored by Abbott

Chairperson(s): J. J. Bax (Leiden, NL); M. M. Oliveira (Lisbon, PT)

- Get an overview about device-based solutions and evidences supporting their value for chronic Heart Failure patients.
- Depending on the underlying disease (Functional Mitral Regurgitation) or the stage of the Heart Failure disease, Abbott offers different treatments in the HF continuum of care. In this context, you will understand who would best benefit from Transcatheter Mitral Valve Repair (TMVR) or LVAD therapy and when refer your patients

12:45 >	Introduction - Treating heart failure (HF) with device therapies : what's new? M. M. Oliveira (Lisbon, PT)	767
12:47 >	Important targets for device therapy. N. Ajmone Marsan (Leiden, NL)	768
12:59 >	Treating Functional Mitral Regurgitation (FMR) in HF: What COAPT & MitraFR tell us. C. Butter (Bernau/Berlin, DE); M. Senni (Bergamo, IT)	769
13:21 >	Referring the right patient at the right time for Left Ventricular Assist Device (LVAD) implantation. H. S. Lim (Birmingham, GB)	770
13:40 >	Conclusion & take home message - Treating heart failure (HF) with device therapies : what's new? J. J. Bax (Leiden, NL)	771

12:45 - 13:45 SATELLITE SYMPOSIUM MOBITZ

### New frontiers in diagnosis: implantable cardiac monitors

Sponsored by Abbott

Chairperson(s): J.-C. Deharo (Marseille, FR); S. Beggs (Glasgow, GB)

New applications for implantable cardiac monitors: AF, syncope and stroke. And the influence and added value of the new technologies on these monitoring devices.

12:45 >	Improvement of traditional remote monitoring through new technologies. F. Quartieri (Reggio Emilia, IT)	772
13:05 >	Atrial Fibrillation (AF): application of novel technologies for diagnose and management. P.J. Attanasio (Berlin, DE)	773
13:25 >	Application of new implantable cardiac monitoring devices for the management of cryptogenic stroke. I. C. Van Gelder (Groningen, NL)	774

12:45 - 13:45 SATELLITE SYMPOSIUM MIROWSKI

### Illuminating electrophysiology: from the simple to complex procedures

Sponsored by Boston Scientific

Chairperson(s): P. Jais (Bordeaux, FR); E. Hoffmann (Munich, DE)

Provide information how through new technologies a more in depth understanding of arrhythmogenic conditions can be achieved triggering more efficient ablation strategies.

12:45 >	Introduction: Illuminating electrophysiology: from the simple to complex procedures. P. Jais (Bordeaux, FR)	775
12:50 >	Personalized single shot therapies: innovative hot and cold balloons. S. Boveda (Toulouse, FR)	776
13:05 >	Driving minimal ablation in ultra high-density atrial mapping with local impedance. C. Meyer (Hamburg, DE)	777

(to be continued)

(continued)

- 13:20 › Accelerating clinical decisions by simplifying the analysis of ultra high-density ventricular tachycardia mapping. 778  
P. Della Bella (Milan, IT)
- 13:40 › Conclusion: Illuminating electrophysiology: from the simple to complex procedures. 779  
E. Hoffmann (Munich, DE)

12:45 - 13:45 SATELLITE SYMPOSIUM FURMAN

### Our quest for durable pulmonary vein isolation: new technologies and clinical evidence

Sponsored by Biosense Webster - Johnson & Johnson Institute

**Chairperson(s): P.P. Adragao (Carnaxide, PT)**

*Explain and discuss outcome of relevant recent clinical trials with contact force technology in treating Atrial Fibrillation (AF) patients*

*Discuss procedural workflows with latest technologies in Radio Frequency (RF) ablation and substrate mapping*

- 12:45 › Results from the VISTAX study. 780  
M. Duytschaever (Brugge, BE)
- 13:00 › Results from the PRAISE-AF study. 781  
D. Gupta (Liverpool, GB)
- 13:15 › Temperature-controlled ablation mode. 782  
T. De Potter (Aalst, BE)
- 13:30 › Panel discussion - Our quest for durable pulmonary vein isolation: new technologies and clinical evidence. 783  
T. De Potter (Aalst, BE); M. Duytschaever (Brugge, BE); D. Gupta (Liverpool, GB)

12:45 - 13:45 SATELLITE SYMPOSIUM COURCEL

### Can lead extraction decrease future device infection rates?

Sponsored by Philips

**Chairperson(s): C. E. H. Kennergren (Goteborg, SE); B. L. Wilkoff (Cleveland, US)**

*Newest data confirm worse outcome for infected device patients, even if intra-procedural outcome is similar. So, avoiding infection should become more important. Extraction instead of capping might be an increasing approach for specific patients in future, as current data suggest, keeping in mind the high success and very low complication rate with extraction.*

- 12:45 › Introduction - Can lead extraction decrease future device infection rates? 784  
C. E. H. Kennergren (Goteborg, SE); B. L. Wilkoff (Cleveland, US)
- 12:50 › Infected patients: worse outcomes? 785  
S. Hakmi (Hamburg, DE)
- 13:05 › Abandoning leads: do you think about the future risk of infection? 786  
G. Hindricks (Leipzig, DE)
- 13:25 › Lead extraction in experienced hands is a safe and successful procedure. 787  
P. Mazzone (Milano, IT)
- 13:40 › Concluding remarks - Can lead extraction decrease future device infection rates? 788  
C. E. H. Kennergren (Goteborg, SE); B. L. Wilkoff (Cleveland, US)

12:45 - 13:45 SATELLITE SYMPOSIUM DAMATO

**Who should receive the Wearable Cardioverter Defibrillator (WCD)? Evidence and risk stratification for prevention of sudden cardiac death**

Sponsored by ZOLL

Chairperson(s): G. L. Botto (Rho, IT); O. Piot (Saint-Denis, FR)

This program will focus on which patient should receive the Wearable Cardioverter Defibrillator (WCD) as well as on the evidence and risk stratification for the prevention of sudden cardiac death.

Presentations will include an overview of the most important WCD data including the first randomized device trial, VEST, as well as consistent registry data of about 20,000 patients and will discuss the implications of these data in clinical practice. The faculty will also review strategies for screening and identifying which patients should be protected with the WCD and will review the impact of those patients who choose to wear it.

12:45 ›	Introduction - Who should receive the Wearable Cardioverter Defibrillator (WCD)? Evidence and risk stratification for prevention of sudden cardiac death. G. L. Botto (Rho, IT)	789
12:50 ›	Distilling the clinical evidence behind the WCD - What have clinical trials and registries told us? S. Reif (Munich, DE)	790
13:05 ›	Strategies for screening and identifying which patients to protect with the WCD. J. R. Ehrlich (Frankfurt, DE)	791
13:20 ›	The impact of the WCD for patients who choose to wear it. D. Scherr (Graz, AT)	792
13:35 ›	Panel discussion and summary - Who should receive the Wearable Cardioverter Defibrillator (WCD)? Evidence and risk stratification for prevention of sudden cardiac death. O. Piot (Saint-Denis, FR)	793

12:45 - 13:45 SATELLITE SYMPOSIUM HIS

**Optimizing stroke prevention with NOACs: focus on Atrial Fibrillation (AF) patients with concomitant Acute Coronary Syndrome (ACS)**

Sponsored by BMS/Pfizer Alliance

Chairperson(s): S. H. Hohnloser (Frankfurt, DE)

To review recent achievements in stroke prevention in AF. To discuss current clinical practice and latest evidence of using NOACs in patients with AF and concomitant ACS / undergoing Percutaneous Coronary Intervention

12:45 ›	NOACs for stroke prevention: achievements to date and impact on AF patient outcomes. S. H. Hohnloser (Frankfurt, DE)	755
12:55 ›	AF patients with ACS: the evolving landscape. R. Storey (Sheffield, GB)	756
13:10 ›	AF patients with ACS: recent insights from AUGUSTUS and other trials. R. D. Lopes (Durham, US)	757
13:35 ›	Panel discussion / Q&A - Optimizing stroke prevention with NOACs: focus on Atrial Fibrillation (AF) patients with concomitant Acute Coronary Syndrome (ACS). S. H. Hohnloser (Frankfurt, DE)	758



14:00 - 15:30 MAIN SESSION SOKOLOV

### Late-breaking trials 3

**Chairperson(s): M. M. Oliveira (Lisbon, PT); C. Blomstrom-Lundqvist (Uppsala, SE)**

- 14:00 › Uninterrupted edoxaban versus vitamin k antagonists for ablation of atrial fibrillation: the ELIMINATE-AF Trial 794  
*S. H. Hohnloser (Frankfurt, DE)*
- 14:10 › ELIMINATE-AF Trial - Discussion 795  
*TS. Potpara (Belgrade,RS)*
- 14:15 › Internal vs. external electrical cardioversion of atrial arrhythmias in patients with an implantable cardioverter- defibrillator: a randomised controlled clinical trial 796  
*J. Luker (Cologne, DE)*
- 14:25 › Internal vs. external electrical cardioversion of atrial arrhythmias in patients with an implantable cardioverter- defibrillator: a randomised controlled clinical trial - Discussion 797  
*C. W. Israel (Bielefeld,DE)*
- 14:30 › Thromboembolic risk in patients with atrial fibrillation and valvular heart disease according to the EHRA Type 2 definition: beyond mitral stenosis and mechanical prosthetic heart valve. 798  
*L. Melgaard (Aalborg, DK)*
- 14:40 › Thromboembolic risk in patients with atrial fibrillation and valvular heart disease according to the EHRA Type 2 definition: beyond mitral stenosis and mechanical prosthetic heart valve - Discussion 799  
*P. Kirchhof (Birmingham,GB)*
- 14:45 › Wait-and-see versus acute cardioversion in recent-onset AF 800  
*H. J. G. M. Crijns (Maastricht, NL)*
- 14:55 › Wait-and-see versus acute cardioversion in recent-onset AF - Discussion 801  
*A. J. Camm (London,GB)*
- 15:00 › Temporal association of atrial fibrillation with device based heart failure status in patients with CRT 802  
*A. Capucci (Torrette Di Ancona, IT)*
- 15:10 › Temporal association of atrial fibrillation with device based heart failure status in patients with CRT - Discussion 803  
*J. Healey (Hamilton,CA)*
- 15:15 › Panel discussion. 804

14:00 - 15:30 MAIN SESSION SENNING

### Direct His bundle pacing - True physiological stimulation

Joint session with the Heart Rhythm Society (HRS) 

**Chairperson(s): H. Burri (Geneva, CH); A. Russo (Moorestown, US)**

*This joint session with HRS gives a 360° overview of direct His bundle pacing, which is now mainstream treatment of bradycardia and heart failure.*

- 14:00 › Physiology of direct His bundle pacing 805  
*F. Zanon (Rovigo, IT)*
- 14:22 › Current indications 806  
*P. Vijayaraman (Wilkes Barre, US)*
- 14:45 › Implantation technique 807  
*G. Dandamudi (Carmel, US)*
- 15:07 › Programming and follow-up 808  
*Z. I. Whinnett (London, GB)*

14:00 - 15:30 SYMPOSIUM WENCKEBACH

**Interventional strategies for treating ventricular fibrillation****Chairperson(s): R. Cappato (Rozzano, IT); T. Deering (Atlanta, US)**

- 14:00 › Does ventricular tachycardia ablation impact ventricular fibrillation occurrence 809  
*P. Jais (Bordeaux, FR)*
- 14:22 › Catheter ablation for Brugada syndrome 810  
*K. Nademanee (Los Angeles, US)*
- 14:45 › Catheter ablation for short-coupled Torsade de Pointes 811  
*M. Haissaguerre (Pessac Cedex, FR)*
- 15:07 › Sympathetic denervation 812  
*J. Mcleod (Rochester, US)*

14:00 - 15:30 HOW-TO SESSION MOBILTZ

**Invasive treatment of ventricular arrhythmias in distinct scenarios and etiologies**Mobile App interactive session - Ask questions **Chairperson(s): H. Estner (Munich, DE); A. M. Saguner (Zurich, CH)***To learn how to approach ventricular tachycardia in patients with non-ischemic substrates and mechanical assist devices. Presenters will provide a clinical case and panelists will discuss and may suggest different approaches*

- 14:00 › In arrhythmogenic right ventricular dysplasia 813  
*E. Gandjbakhch (Paris, FR)*
- 14:18 › In the presence of mechanical assist devices 814  
*C. Biscaglia (Milan, IT)*
- 14:36 › In dilated cardiomyopathy 815  
*D. Muser (Udine, IT)*
- 14:54 › In Brugada syndrome 816  
*F. Sacher (Bordeaux Pessac, FR)*
- 15:12 › Panel discussion 817  
*E. Mikhaylov (Saint-Petersburg, RU); A. P. Wijnmaalen (Leiden, NL)*

14:00 - 15:30 SYMPOSIUM MIROWSKI

**2018 ESC Guidelines for the diagnosis and management of syncope - Recommendations and key messages**Mobile App interactive session - Ask questions **Chairperson(s): J. G. van Dijk (Leiden, NL); P. Vardas (Athens, GR)***To identify appropriate tests and candidates for specific therapies for syncope.*

- 14:00 › My Top 10 messages from the ESC Guidelines 2018 818  
*M. Brignole (Lavagna, IT)*
- 14:22 › Definition and classification of syncopal and non-syncopal forms of transient loss of consciousness 819  
*A. Moya I Mitjans (Barcelona, ES)*
- 14:45 › Management in the emergency department - Immediate risk stratification 820  
*A. Fedorowski (Malmo, SE)*
- 15:07 › Algorithms for selecting the most appropriate therapy 821  
*R. A. Kenny (Dublin 8, IE)*

14:00 - 15:30 SPECIAL SESSION FURMAN

**EHRA device tracings open**Special Session, Mobile App interactive session - Ask questions  **Chairperson(s): C. W. Israel (Bielefeld, DE); D.A.M.J. Theuns (Rotterdam, NL)**

CIED tracings will be presented to the audience with multiple choice questions, and then commented by the panel.

14:00 ›	Quiz 1	822
14:07 ›	Quiz 2	823
14:14 ›	Quiz 3	824
14:21 ›	Quiz 4	825

14:00 - 15:30 SPECIAL SESSION COUMEL

**Sudden cardiac arrest - European perspectives and solutions** 

Special Session in collaboration with the European Sudden Cardiac Arrest network: towards Prevention, Education, New Effective Treatment (ESCAPE-NET)

**Chairperson(s): P.J. Schwartz (Milan, IT); J. T. Tfelt-Hansen (Copenhagen, DK)**

Sudden cardiac arrest is a catastrophic event and remains a major challenge. This session will present the background, objectives, relevant aspects and perspectives of the ESCAPE-NET, an EU-funded network for sudden cardiac arrest research.

Grant Agreement number: 733381

14:00 ›	Building an EU-funded network for sudden cardiac arrest research - ESCAPE-NET H. Tan (Amsterdam, NL)	826
14:22 ›	Tripling survival rates after sudden cardiac arrest before the cath lab - How did we do that and how can we do even better? B. W. Boettiger (Cologne, DE)	827
14:45 ›	Indications for ICD implantation for prevention of sudden cardiac death - Current practice and challenges N. Dagues (Leipzig, DE)	828
15:07 ›	Worth the efforts! Long-term outcome after sudden cardiac arrest in 2019 M. T. Blom (Amsterdam, NL)	829

14:00 - 15:30 DEBATE SESSION HIS

**Debates in ICD indications** 

Mobile App interactive session - Ask questions

**Chairperson(s): C. Leclercq (Rennes, FR); N. Pavlovic (Zagreb, HR)**

To gain a critical appraisal of sudden death preventative strategies in the setting of non-Ischaemic heart disease, and of its maintenance in the elderly population at the time of CRTD replacement

14:00 ›	Opening question	830
14:05 ›	Primary prophylactic ICD in non-ischaemic cardiomyopathy - Prophylactic ICD for almost everyone M. Madeira (Coimbra, PT)	831
14:15 ›	Primary prophylactic ICD in non-ischaemic cardiomyopathy - Prophylactic ICD only for highly selected patients J. Nielsen (Aarhus N, DK)	832
14:25 ›	Rebuttal M. Madeira (Coimbra, PT)	833
14:30 ›	Rebuttal J. Nielsen (Aarhus N, DK)	834
14:35 ›	Chairperson conclusion & closing question	835
14:45 ›	Opening question	836
14:50 ›	The elderly CRT-D patient needs a replacement - Downgrade to CRT-P? B. A. Schaer (Basel, CH)	837

(to be continued)

(continued)

15:00 ›	The elderly CRT-D patient needs a replacement - Stick to CRT-D? <i>V. Zaca' (Colle Di Val D'elsa, IT)</i>	838
15:10 ›	Rebuttal <i>B. A. Schaer (Basel, CH)</i>	839
15:15 ›	Rebuttal <i>V. Zaca' (Colle Di Val D'elsa, IT)</i>	840
15:20 ›	Chairperson conclusion & closing question	841

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14:00 - 15:30	SYMPOSIUM	DAMATO
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### The new kids on the block - Mapping and ablation of atrial fibrillation in 2020

**Chairperson(s): M. Duytschaever (Brugge, BE); E. Hoffmann (Munich, DE)**

*Pulmonary vein isolation is the cornerstone in catheter ablation of atrial fibrillation. The objective of this main session is to present emerging technologies for pulmonary vein isolation.*

14:00 ›	Globe mapping <i>P. Sommer (Leipzig, DE)</i>	842
14:22 ›	High power short duration radio frequency applications <i>P. Neuzil (Praha, CZ)</i>	843
14:45 ›	Balloon technologies <i>C. Tondo (Milan, IT)</i>	844
15:07 ›	Electroporation <i>P. Loh (Utrecht, NL)</i>	845

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14:00 - 15:30	ORAL ABSTRACT SESSION	AGORA
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### Best graded abstracts

**Chairperson(s): C. Piorkowski (Dresden, DE); S.A. Chen (Taipei, TW)**

14:00 ›	Phrenic nerve injury during pulmonary vein isolation using the second-generation cryoballoon: first results of the worldwide YETI registry <i>C.H. Heeger, A. Pott, A. Rillig, A. Metzner, S. Cay, N. Grosse, S. Miyazaki, A. Arash, J.R. Ehrlich, H. Wirth, V. Tscholl, K.H. Kuck, T. Dahme, R.R. Tilz (Luebeck, Ulm, Hamburg, Wiesbaden and Berlin, DE; Ankara, TR; Tsuchiura, Ibaraki, JP; Sacramento, US)</i>	846
14:15 ›	Catheter ablation versus medical therapy for treatment of symptomatic frequent ventricular premature complexes as a first-line therapy in pediatric population: One-year follow up of a randomized study <i>A. Romanov, V. Shabanov, I. Mikheenko, D. Losik, D. Elesin, I. Stenin, S. Bayramova, I. Peregudov, R. Zhizhov, S. Termosov, A. Cheysnoits, E. Pokushalov, J.S. Steinberg (Novosibirsk and Moscow, RU; Minsk, BY; Rochester, US)</i>	847
14:30 ›	Pulmonary vein isolation by high-power short-duration radiofrequency applications: short term efficacy and safety in patients with atrial fibrillation <i>S. Castrejon Castrejon, M. Martinez-Cossiani, M. Ortega-Molina, C. Escobar-Cervantes, C. Froilan-Torres, N. Gonzalo-Bada, M. Diaz De La Torre, J.M. Suarez-Parga, M. Batlle, R. Gonzalez-Davia, J.L. Lopez-Sendon, J.L. Merino (Madrid, ES)</i>	848
14:45 ›	Novel ultra-low temperature cryoablation system: safety, efficacy and long-term durability <i>F. Bourrier, M. Takigawa, A. Lam, D. Cabrita, J. Cox, A. Babkin, F. Sacher, P. Jais, M. Haissaguerre, M. Hocini (Bordeaux-Pessac, FR; Laguna Hills, US)</i>	849

(to be continued)

(continued)

- 15:00 › Association between QRS shortening and mortality after implantation of cardiac resynchronization therapy: results from the DANISH study 850  
C. Lund-Andersen, D. Hoefsten, J.J. Thune, B.T. Philbert, J.C. Nielsen, A.M. Thøgersen, J. Haarbo, L. Videbaek, J.H. Svendsen, S. Pehrson, L. Koeber (Copenhagen, Aarhus, Aalborg and Odense, DK)
- 15:15 › Haemodynamically compromising ventricular tachycardia assessed under haemodynamic support depends on functional conduction properties of borderzone tissue 851  
J. Whitaker, S. Kim, A. Connolly, J. Julia, R. Neji, S. Williams, L. Camporota, S. Niederer, M. Wright, J. Silberbauer, S. Roujol, M. Bishop, R. Razavi, M. O'Neill (London and Brighton, GB; Minneapolis, US)

15:35 - 16:25

SPECIAL SESSION

INNOVATIONS STAGE

**EHRA Innovation Award 2019**

Special Session

**Chairperson(s): F. Prinzen (Maastricht, NL)**

Judge(s): G. A. Dan (Bucharest, RO); M.M. Farkowski (Warsaw, PL); M. Finlay (London, GB); K. Jubele (Riga, LV)

- 15:35 › Finalist 1 1357
- 15:45 › Finalist 2 1358
- 15:55 › Finalist 3 1359

15:35 - 16:25

SPECIAL EVENT

COUMEL

**EHRA General Assembly**

- › Welcome address  
Prof. Hein Heidbüchel - EHRA President, FESC, FEHRA
- › Main themes for the current Board  
Prof. Hein Heidbüchel - EHRA President, FESC, FEHRA
- › Changes to the EHRA Constitution  
Prof. Jose Luis Merino - «EHRA Secretary», FEHRA
- › 2019 Forecast  
Prof. Helmut Puererfellner - EHRA Treasurer, FESC
- › An open invitation for science  
Assoc. Prof. Tatjana Potpara - EHRA Scientific Initiatives Chair, FESC
- › Questions & Answers

15:35 - 16:25

MODERATED POSTERS

MODERATED EPOSTER 1

**Moderated ePosters 10: clinical AF****Chairperson(s): E. Nof (Tel Hashomer, IL); C. Blomstrom-Lundqvist (Uppsala, SE)**Moderated posters are on display at their assigned Moderated Poster Session from 14:00 to 18:00  
Presentation and discussion moderated by the chairpersons take place between 15:35 - 16:25

- The association between atrial fibrillation and alzheimer's disease: fact or fallacy? A systematic review and meta-analysis. 858  
R. Vio, A. Chiocchini, F. Rivezzi, L. Licchelli, A. Al Turki, R. Proietti (Padua, IT; Montreal, CA)
- Association of late gadolinium enhancement extent in the left atrium with left atrial pressure in patients with atrial fibrillation 859  
S.Y. Roh, D.I. Lee, K.N. Lee, D.H. Kim, Y.S. Baek, J.H. Ahn, J.M. Shim, J.I. Choi, Y.H. Kim (Goyang-si, Cheongju, Seoul, Bucheon, Incheon and Pusan, KR)

(to be continued)

(continued)

- Atrial fibrillation is an independent predictor of falls risk, syncope & orthostatic intolerance in older adults: a systematic review and meta-analysis 860  
*V. Malik, C. Gallagher, D. Linz, A. Elliott, T. Agbaedeng, M. Emami, R. Mishima, J. Hendriks, R. Mahajan, L.F. Arnolda, D.H. Lau, P. Sanders (Adelaide and Wollongong, AU)*
- Upstream therapy using preoperative renin-angiotensin system inhibitors in prevention of postoperative atrial fibrillation and adverse events: a collaborative pooled-analysis over 27,000 patients 861  
*S. Chen, B. Schmidt, P. Sommer, S. Liu, M. Krucoff, M. Kiuchi, B. Andrea, W. Acou, A. Schratte, T. Nagase, Z. Ling, Y. Yin, G. Hindricks, H. Puererfellner, J. Chun (Frankfurt am Main and Leipzig, DE; Shanghai and Chongqing, CN; Durham, US; Rio de Janeiro, BR; Roeselare, BE; Vienna and Linz, AT)*
- Sex differences in prevalence, treatment and outcomes in patients with atrial fibrillation: a population-based cohort study 862  
*I. Marzona, M. Proietti, T. Vannini, A. Nobili, M.C. Roncaglioni (Milan, IT)*
- Development of a prognostic model for recurrent atrial fibrillation using individual patient data from 2429 patients with AF: preliminary results of the CATCH ME study. 863  
*W. Chua, C. Easter, E. Guasch, A. Sitch, B. Casadei, D. Haase, S. Hatem, S. Kaab, L. Mont, U. Schotten, M. Sinner, K. Hemming, J. Deeks, P. Kirchhof, L. Fabritz (Birmingham and Oxford, GB; Barcelona, ES; Muenster and Munich, DE; Paris, FR; Maastricht, NL)*
- Optimal blood pressure control for lowering dementia risk in patients with atrial fibrillation: nationwide data covering the entire Korean population 864  
*D. Kim, P.S. Yang, E. Jang, H.T. Yu, T.H. Kim, J.S. Uhm, J.Y. Kim, J.H. Sung, H.N. Pak, M.H. Lee, B. Joung (Seoul and Seongnam, KR)*

15:35 - 16:25

MODERATED POSTERS

MODERATED EPOSTER 2

**Moderated ePosters 11: AF: stroke and anticoagulation****Chairperson(s): P. Kirchhof (Birmingham, GB)**

*Moderated posters are on display at their assigned Moderated Poster Session from 14:00 to 18:00  
 Presentation and discussion moderated by the chairpersons take place between 15:35 - 16:25*

- Diabetes mellitus, time in the therapeutic range and adverse outcomes in patients with atrial fibrillation: insights from the AFFIRM study 865  
*M. Proietti, G.F. Romiti, B. Olshansky, G.Y.H. Lip (Birmingham, GB; Rome, IT; Iowa City, US)*
- Different obesity paradox of ischemic stroke without and with atrial fibrillation 866  
*Y. S. Baek, P.S. Yang, H.N. Pak, M.H. Lee, B.Y. Joung, D.H. Kim (Incheon and Seoul, KR)*
- Usefulness of CHADS2-VASc score in predicting stroke in patients with atrial fibrillation and heart failure with preserved ejection fraction 867  
*A. Berkovitch, I. Mazin, A. Younis, N. Shlomo, E. Nof, I. Goldenberg, R. Beinart (Tel Hashomer, IL; Rochester, US)*
- Thromboembolic events associated with cardioversion of atrial fibrillation in patients randomized to antiplatelet treatment in the ACTIVE trials 868  
*W.F. McIntyre, S.J. Connolly, J. Wang, S. Masiero, J.A. Wong, D. Conen, J.S. Healey (Hamilton, CA)*
- Prediction of Thromboembolic Events in Anticoagulated Patients with Atrial Fibrillation: Comparison of CHA2DS2-VASc and GARFIELD-AF Stroke Risk Scores 869  
*M. Proietti, J.M. River-Caravaca, M.A. Esteve-Pastor, F. Marin, G.Y.H. Lip (Birmingham, GB; Murcia, ES)*
- Thromboembolism after electrical isolation of the left atrial appendage: a new indication for interventional closure 871  
*N. Zender, F.W. Weise, S.B. Bordingon, E.H. Herrmann, A.K. Konstantinou, F.B. Bologna, T.N. Nagase, S.C. Chen, J.C. Chun, B.S. Schmidt (Frankfurt am Main, DE)*

15:35 - 16:25

MODERATED POSTERS

MODERATED EPOSTER 3

**Moderated ePosters 12: Challenges in clinical rhythm management****Chairperson(s): To be announced***Moderated posters are on display at their assigned Moderated Poster Session from 14:00 to 18:00**Presentation and discussion moderated by the chairpersons take place between 15:35 - 16:25*

- Time-dependent prediction of arrhythmia recurrences over 3 years follow-up using apple and mb-later scores in patients undergoing catheter ablation of atrial fibrillation 873  
*J. Kornej, K. Schumacher, S. Zeynalova, P. Sommer, B. Dinov, A. Arya, A. Bollmann, D. Husser, G. Hindricks (Leipzig, DE)*
- Clinical impact of adherence to non-vitamin k antagonist oral anticoagulants in real-world patients with atrial fibrillation: nationwide cohort data covering the entire korean population 874  
*D. Kim, P.S. Yang, E. Jang, H.T. Yu, T.H. Kim, J.S. Uhm, J.Y. Kim, J.H. Sung, H.N. Pak, M.H. Lee, G. Lip, B. Joung (Seoul and Seongnam, KR; Birmingham, GB)*
- High-risk features and event predictors in patients with unexplained syncope from the young SCD-SOS cohort 875  
*M. Carrington, J. Pais, R. Teixeira, L. Goncalves, R. Providencia (Evora and Coimbra, PT; London, GB)*
- Effects of low-energy photon beam radiation therapy on cardiac implantable devices: a prospective, blinded, randomized, in-vitro study 876  
*E. Di Girolamo, M. Faustino, N. Furia, M. Appignani, C. Di Carlo, D. Genovesi, M.D. Falco (Chieti, IT)*
- The clinical and financial impact of a new nurse-led service for insertion of implantable loop recorders at the university hospital 877  
*S. Armstrong, L. Bracaloni, R. Chelliah, R. K. Pathmanathan, W. I. Loke, W. B. Nicolson, P. J. Stafford, A. J. Sandilands, R. Somani, G. A. Ng (Leicester, GB)*
- Diagnostic value of cardiac magnetic resonance after aborted sudden cardiac death 878  
*C. Czibalmos, L. Szabo, I. Csecs, A. Toth, F.I. Suhai, E. Zima, D. Becker, L. Geller, B. Merkely, H. Vago (Budapest, HU)*
- Infection of cardiac implantable electronic devices and the need for subsequent re-implantation 879  
*M. Doring, L. Heinicke, H. Knopp, N. Dages, A. Muessigbrodt, K. Bode, M. Kuehl, G. Hindricks, S. Richter (Leipzig, DE)*
- Prophylactic implantable cardioverter defibrillator implantation in heart failure patients with a reduced ejection fraction: does New York Heart Association class really matter? 880  
*A.C.J. Van Der Lingen, S.A.J. Timmer, L.J.H. Allaart, M.T. Rijniere, P.M. Van De Ven, A.C. Van Rossum, M.J.B. Kemme, V.P. Van Halm, C.P. Allaart (Amsterdam, NL)*

15:45 - 16:15

SATELLITE SYMPOSIUM - EXPERTS ON THE SPOT

DAMATO

**Optimizing stroke prevention with NOACs: practical tips and recommendations****Sponsored by BMS/Pfizer Alliance****Chairperson(s): J. Steffel (Zurich, CH)***Interactive session to discuss practical tips and recommendations on using NOACs for stroke prevention in non-valvular atrial fibrillation. A large part of the session will be dedicated to answer questions from delegates.*

- 15:45 › Optimizing stroke prevention with NOACs: practical tips and recommendations. 881  
*I. Savelieva (London, GB); J. Steffel (Zurich, CH)*

15:45 - 16:15 SATELLITE SYMPOSIUM - EXPERTS ON THE SPOT AGORA

**Transcatheter Mitral Valve Repair (TMVR) in Functional Mitral Regurgitation (FMR) : time to treat!**

Sponsored by Abbott

**Chairperson(s): J. J. Bax (Leiden, NL)**

Learn about recent data in treating FMR in Heart Failure (COAPT &amp; MitraFR)

Define patient who would benefit from Transcatheter Mitral Valve Repair therapy and right timing for treatment

- |         |   |     |
|---------|---|-----|
| 15:45 › | COAPT & MitraFR results presentation.<br>M. Senni (Bergamo, IT)             | 882 |
| 16:00 › | Who & when should I consider TMVR for my patient?<br>J. J. Bax (Leiden, NL) | 883 |

16:30 - 18:00 HOW-TO SESSION SENNING

**Premature ventricular complex ablation in patients with heart failure - What have we learned?****Chairperson(s): P. Maury (Toulouse, FR); A. L. Parreira (Setubal, PT)**

To learn how to identify the optimal candidate for ablation of frequent PVCs. To understand the available tools to precisely predict de PVC site of origin beyond ECG. To know the distribution of PVC site of origin in patients with heart failure and to learn how to approach challenging sites. To know the impact of PVC ablation on clinical outcomes.

- |         |  |     |
|---------|--|-----|
| 16:30 › | Optimal candidates for ablation in different clinical scenarios. Just a question of burden?<br>S. Willems (Hamburg, DE)        | 884 |
| 16:52 › | How to predict the site of origin - Increasing efficiency by using all the available tools<br>D. Penela (Piacenza, IT)         | 885 |
| 17:15 › | Challenging premature ventricular contractions sites in patients with systolic dysfunction<br>P. Santangeli (Philadelphia, US) | 886 |
| 17:37 › | How to anticipate clinical outcomes. Any impact on mortality?<br>A. Berruezo Sanchez (Barcelona, ES)                           | 887 |

16:30 - 18:00 HOW-TO SESSION WENCKEBACH

**Difficult supraventricular tachycardia - How to survive in the lab**Mobile App interactive session - Ask questions **Chairperson(s): P. Brugada Terradellas (Brussels, BE); V. Traykov (Sofia, BG)**

Practising electrophysiologists during SVT ablation sometimes unexpectedly encounter patients with more complex arrhythmias. The purpose of this practical session is to learn useful tips and tricks for the diagnosis and ablation of challenging SVT-s from experienced electrophysiologists through illustrative cases

- |         |  |     |
|---------|--|-----|
| 16:30 › | EP manoeuvres that can save you in the lab<br>J. Farre (Madrid, ES)                                | 888 |
| 16:48 › | Challenging accessory pathways<br>G. Van Hare (Saint Louis, US)                                    | 889 |
| 17:06 › | Difficult atrioventricular nodal reentry tachycardia<br>J.L. Merino (Madrid, ES)                   | 890 |
| 17:24 › | Wide QRS with one-to-one conduction<br>A. Sarkozy (Edegem, BE)                                     | 891 |
| 17:42 › | Panel discussion<br>J.G.L.M. Luermans (Maastricht, NL); J.A. Sieira Rodriguez-Moret (Brussels, BE) | 892 |



16:30 - 18:00 HOW-TO SESSION MOBITZ

### My way for safe and effective pacemaker therapy

**Chairperson(s):** N. Clementy (Tours, FR); P.P. Mitkowski (Poznan, PL)

*Focus on core principles for Pacemaker implantation and programming*

- |         |  |     |
|---------|--|-----|
| 16:30 › | Procedure planning, vein access and lead placement - Transvenous pacemakers<br><i>S. M. A. Sohaib (London, GB)</i> | 893 |
| 16:52 › | Procedure planning, vein access and pacemaker placement - Leadless pacemakers<br><i>C. Steinwender (Linz, AT)</i>  | 894 |
| 17:15 › | Minimise bleeding complications - How to manage heparin, warfarin and NOACs?<br><i>M. Biffi (Bologna, IT)</i>      | 895 |
| 17:37 › | Pacemaker programming - How to optimise therapy efficacy?<br><i>S. Tzeis (Maroussi, GR)</i>                        | 896 |

16:30 - 18:00 SPECIAL SESSION MIROWSKI

### Live case session - Lead extraction

Special Session 

**Chairperson(s):** M. G. Bongiorno (Pisa, IT); A. Rinaldi (London, GB)

- |         |  |     |
|---------|--|-----|
| 16:30 › | Live from Leipzig - Mechanical sheaths<br><i>C. T. Starck (Berlin, DE)</i>     | 897 |
| 17:00 › | Live in the box - Hybrid approach<br><i>C. E. H. Kennergren (Goteborg, SE)</i> | 898 |
| 17:30 › | Live in the box - Femoral snares<br><i>F. A. L. E. Bracke (Eindhoven, NL)</i>  | 899 |

16:30 - 18:00 MAIN SESSION FURMAN

### Atrial fibrillation and heart failure

**Joint session with the Heart Failure Association of the ESC**

**Chairperson(s):** A. J. Camm (London, GB); P. Seferovic (Belgrade, RS) atrial fibrillation and heart failure often coincide.

*This joint session with the Heart Failure Association will give you more insights from an electrophysiologists and heart failure specialists perspective*

- |         |   |     |
|---------|---|-----|
| 16:30 › | Atrial fibrillation and heart failure - Current knowledge<br><i>I. C. Van Gelder (Groningen, NL)</i>  | 900 |
| 16:52 › | Atrial remodeling in heart failure with and without preserved ejection fraction<br><i>J. Bauersachs (Hannover, DE)</i>  | 901 |
| 17:15 › | Optimal therapy of atrial fibrillation in patients with heart failure - Role of risk factor management and upstream therapies<br><i>A. Goette (Paderborn, DE)</i> | 902 |
| 17:37 › | Optimal therapy of heart failure in patients with atrial fibrillation<br><i>M. F. Piepoli (Piacenza, IT)</i>  | 903 |

16:30 - 18:00 MAIN SESSION COUMEL

### Sports and arrhythmias - When does good become bad?

**Chairperson(s): L. Mont (Barcelona, ES); A. Pelliccia (Rome, IT)**

*Sports in patients at risk for arrhythmias and sudden death is a clinical conundrum which is covered in this session by experts in this field.*

- |         |  |     |
|---------|--|-----|
| 16:30 › | ARVC and sports<br><i>H. Calkins (Baltimore, US)</i>                           | 904 |
| 16:52 › | Hypertrophic cardiomyopathy and sports<br><i>S. Sharma (London, GB)</i>        | 905 |
| 17:15 › | Channelopathies and sports<br><i>M. Ackerman (Rochester, US)</i>               | 906 |
| 17:37 › | CIEDs and sports - Special considerations<br><i>C. Sticherling (Basel, CH)</i> | 907 |

16:30 - 18:00 SYMPOSIUM HIS

### (Sino-)Atrial electrophysiology and cardiac arrhythmia

*Session from the 43<sup>rd</sup> Annual Meeting of the ESC Working Group on Cardiac Cellular Electrophysiology*

**Chairperson(s): G. L. Smith (Glasgow, GB); D. Thomas (Heidelberg, DE)**

- |         |   |     |
|---------|---|-----|
| 16:30 › | Intracellular calcium handling in different models of sinus node dysfunction  | 908 |
| 16:48 › | Massive expansion of native human atrial cardiomyocytes by immortogenetics for multiscale arrhythmia research<br><i>N. Harlaar, L. Volkers, J. Liu, P.R.R. Van Gorp, A.A. Ramkisoensing, T.J. Van Brakel, D.A. Pijnappels, A.A.F. De Vries (Leiden, NL)</i>   | 909 |
| 17:06 › | Concomitant genetic ablation of L-type Cav1.3 and T-type Cav3.1 Ca <sup>2+</sup> channels disrupts heart automaticity.<br><i>M. Baudot, P. Mesirca, A.G. Torrente, I. Bidaud, L. Talssi, H.S. Shin, J. Striessnig, J. Narjeot, S. Barrere-Lemaire, M.E. Mangoni (Montpellier, FR; seoul, KR; Innsbruck, AT)</i>                           | 910 |
| 17:24 › | Investigation of the Na <sup>+</sup> /Ca <sup>2+</sup> -exchanger-funny current crosstalk in sinus-node and Purkinje fibre assessed by a novel NCX inhibitor ORM-10962<br><i>N. Toth, Z.S. Kohajda, J. Szlovak, A. Loewe, P. Gazdag, J. Prorok, P. Pollesello, J. G.Y. Papp, A. Varro, N. Nagy (Szeged, HU; Karlsruhe, DE; Espoo, FI)</i> | 911 |
| 17:42 › | Gain-of-function mutation in the cardiac kv4.2 potassium channel underlies paroxysmal atrial fibrillation<br><i>M. Drabkin, N. Zilberberg, S. Menahem, W. Mulla, D. Halperin, Y. Yogev, O. Wormser, Y. Etzion, A. Katz, O.S. Birk (Beer Sheva, IL)</i>  | 912 |

16:30 - 18:00 HOW-TO SESSION DAMATO

### Case-based optimal therapy of atrial fibrillation

Mobile App interactive session - Ask questions 

**Chairperson(s): C. A. Martin (Cambridge, GB); C. Pappone (San Donato Milanese, IT)**

*Case based session on how to choose optimal therapy in patients with different type of AF and comorbidities*

- |         |   |     |
|---------|---|-----|
| 16:30 › | Male 50 years, hypertension, BMI 35, coronary stenting and persistent atrial fibrillation<br><i>M. Rienstra (Groningen, NL)</i> | 913 |
| 16:48 › | Female, 80 years with paroxysmal atrial fibrillation and falls<br><i>N. Cortez-Dias (Lisbon, PT)</i>                            | 914 |
| 17:06 › | 60 year male, cardiomyopathy, LVEF 35% and persistent atrial fibrillation<br><i>S. A. Trines (Leiden, NL)</i>                   | 915 |
| 17:24 › | Male 50 years persistent atrial fibrillation no symptoms<br><i>E. Arbelo (Barcelona, ES)</i>                                    | 916 |
| 17:42 › | Panel discussion<br><i>J. Kosiuk (Leipzig, DE); P. Lodzinski (Warsaw, PL)</i>   | 917 |

16:30 - 18:00

RAPID FIRE ABSTRACTS

AGORA

**Rapid Fire 5: improving the response to cardiac resynchronization therapy: emerging technologies****Chairperson(s): C. Linde (Stockholm, SE)**

- 16:30 > Survival after cardiac resynchronization therapy: results from 50,084 implantations 918  
A. Zegard, O. Okafor, J. Debono, D. McNulty, A. Ahmed, H. Marshall, D. Ray, T. Qiu, F. Leyva (Birmingham and London, GB)
- 16:50 > Electrical activation versus mechanical contraction in cardiac resynchronization therapy recipients: comparison between electroanatomical mapping and feature-tracking cardiovascular magnetic resonance 921  
O. Okafor, F. Umar, A. Zegard, H. Marshall, S. Flannigan, M. Lencioni, J. De Bono, M. Griffith, F. Leyva (Birmingham, GB)
- 17:00 > Italian multicenter experience with a new active fixation quadripolar left ventricular lead 922  
M. Ziacchi, T. Infusino, M. Mezzetti, F. Urraro, S. Savastano, F. Solimene, M. Landolina, A. Capucci, S. Iacopino, G. Luzzi, R. Foti, T. Agricola, D. Pecora, W. Rauhe, M. Biffi (Bologna, Catanzaro, Urbino, Benevento, Pavia, Mercogliano, Crema, Ancona, Cotignola, Bari, Taormina, Pescara, Brescia and Bolzano, IT)
- 17:10 > Acute electrical and hemodynamic effects of CRT pacing using a micro-catheter guided LV lead in the preclinical setting - the Axone European project 923  
L. I. B. Heckman, M. Kuiper, F.W. Ziglio, N. Shan, K. Vernooy, F.W. Prinzen (Maastricht, NL; Clamart, FR)
- 17:20 > Left ventricular septal pacing as a single ventricular lead approach to cardiac resynchronization therapy: acute hemodynamic and electrophysiological effects 924  
F.C.W.M. Salden, J.G. Luermans, R. Cornelussen, S. Ghosh, F.W. Prinzen, K. Vernooy (Maastricht, NL; Mounds View, MN, US)
- 17:30 > Long term experience of the efficacy and safety of the transeptal endocardial left ventricular lead implantation - An alternative technique in cases of failed cardiac resynchronization therapy 925  
L. A. Geller, Z. Sallo, L. Molnar, T. Tahin, S.Z. Szilagyi, P. Abraham, N. Szegedi, E. Zima, A. Apor, A.I. Nagy, E.E. Ozcan, K.V. Nagy, S.Z. Herczeg, B. Merkely (Budapest, HU)
- 17:40 > Wireless LV endocardial cardiac resynchronisation therapy is safe & effective; results from a multicentre international study 926  
B. Sieniewicz, T.R. Betts, S. James, A. Turley, M. Seifert, L.V.A. Boersma, S. Riaha, M. Arnold, M. Biffi, I. Diemberger, P. Defaye, J.C. Deharo, A. Chow, R. Schilling, C.A. Rinaldi (London, Oxford and Middlesborough, GB; Bernau bei Berlin and Erlangen, DE; Nieuwegein, NL; Aalborg, DK; Bologna, IT; Grenoble and Marseille, FR)
- 17:50 > His Bundle Pacing plus LV lead in heart failure patients candidate to CRT 927  
L. Marcantoni, M. Zuin, G. Pastore, E. Baracca, C. Picariello, S. Aggio, S. Giatti, A. Maddalozzo, K. D'elia, M. Carraro, D. Lanza, P. Galasso, L. Roncon, F. Zanon (Rovigo, IT)

08:30 - 18:00

POSTER SESSION

POSTERS

## Poster session 2

## Basic Science

- Managing the reperfusion ventricular tachyarrhythmias-focus on a perfused myocardium P928  
*O. G. Bernikova, K.A. Sedova, J.E. Azarov (Syktyvkar, RU)*
- Gender differences of atrial innervation P929  
*A. Patsouk, L. Mitrofanova, E. Mikhaylov, D. Lebedev (Saint Petersburg, RU)*
- 19 gene panel analysis for latvian arrhythmogenic right ventricular cardiomyopathy patients P930  
*L.B. Bidina, D. Rots, L. Caunite, K. Kupics, O. Kalejs, L. Gailite (Riga, LV)*
- Long-term effects of transient intermittent negative upper airway pressure on atrial remodeling in a novel rat model for obstructive sleep apnea P931  
*D. Linz, M. Hohl, B. Linz, D. Lau, M. Boehm, P. Sanders (Adelaide, AU; Homburg, DE)*
- Electrophysiologic investigation of exercise-induced cardiac hypertrophy in a rodent model of athletes heart P932  
*A. Olah, B.A. Barta, A.A. Sayour, E. Urban, A. Gephard, D. Kellermayer, E. Virag-Tulassay, M. Ruppert, B. Merkely, T. Radovits (Budapest, HU)*
- Association of the atrial fibrillation and sinus bradycardia with the polymorphism of the calcium-transporting proteins of the sarcoplasmic reticulum of cardiomyocytes P933  
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*M. Biffi, E. Ammendola, E. Menardi, P. De Filippo, M. Manzo, G. Stabile, D. Potenza, M. Iori, M. Ziacchi, P. Sabbatani, V. Zaca', G. Boggian, E. Viviani, M. Malacrida, F. Zanon (Bologna, Naples, Cuneo, Bergamo, Salerno, San Giovanni Rotondo (FG), Reggio Emilia, Cesena, Siena, Milan and Rovigo, IT)*
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*M. Peyracchia, P. Golzio, D. Errigo, S. Frea, D. Castagno, C. Budano, E. Gallo, C. Giustetto, M. Rinaldi (Turin, IT)*
- Ultrasound guided axillary vein puncture for cardiac devices implantation, time to rethink the vascular access technique P1192  
*C. Slater, L.E. Camanho, L.A. Oliveira Inacio Jr, L. Carvalho Dias, E.B. Saad (Rio de Janeiro, BR)*
- Factors associated with presence of ghosts after lead extraction. P1193  
*S. Lorenzetti, G. Massaro, J. Frisoni, C. Martignani, M. Ziacchi, A. Angeletti, G. Statuto, V. Marinelli, F. Sanguettoni, M. Biffi, I. Diemberger (Bologna, IT)*
- One year survival after transvenous lead extraction in patients with lead-associated endocarditis: the importance of pocket involvement. P1194  
*I. Diemberger, G. Massaro, J. Frisoni, R. Bonfiglioli, R. Mei, S. Lorenzetti, A. Angeletti, G. Statuto, V. Marinelli, F. Sanguettoni, M. Ziacchi, C. Martignani, M. Biffi (Bologna and Milan, IT)*

08:30 - 18:00

POSTER SESSION

POSTERS

**Clinical case corner 2**

## Congenital Heart Disease and Pediatric Cardiology

- Complex approach to treatment of severe catecholaminergic polymorphic ventricular tachycardia in a 12-years-old boy P1195  
*T.S. Loevets, D.S. Lebedev, E.S. Vasichkina, S.V. Gureev, V.K. Lebedeva, T.A. Lyubimtseva, S.A. Termosesov, A.A. Kostareva, S.V. Garkina, R.B. Tatarsky, T.M. Pervunina, T.L. Vershinina (Saint Petersburg, Moscow and Saint-Petersburg, RU)*

## e-Cardiology

- Usefulness of simultaneous position analysis during ambulatory electrocardiogram monitoring P1196  
*J. Ahn, J.S. Park, H.W. Lee, J.H. Choi, H.C. Lee, K.S. Cha, T.J. Hong (Busan, KR)*

## Device Therapy

- Leadless pacemaker implantation in subacute humoral rejection in cardiac transplantation P1197  
*G. Palmiero, S. De Vivo, P. Caso, A. D'onofrio (Naples, IT)*

- Automatic pacing output failure as a cause of repeated syncope P1198  
*M. Markovic, M. Stipinovic, D. Pocanic, I. Premuzic Mestrovic (Zagreb, HR)*

- An unusual pacemaker-induced tachycardia P1199  
*M. Coutinho Cruz, G. Portugal, A. Viveiros-Monteiro, A. Lousinha, B. Valente, P. Silva-Cunha, R. Cruz-Ferreira, M. Martins-Oliveira (Lisbon, PT)*

- Endocardial left ventricular pacing and AV node ablation in a patient with ebsteins anomaly and mechanical tricuspid valve replacement with an inaccessible coronary sinus P1200  
*M. Chapman, J. McMinn, S. James, A.J. Turley (Middlesbrough, GB)*

- Repeated MRI and cyberknife therapy for Parkinson's disease in a patient with epicardial leads. P1201  
*T. Skowerski, A. Kulach, Z. Gasior (Katowice, PL)*

- Decrease of the pacing rate after chemotherapy in a patient with sick sinus syndrome due to cardiac tumor infiltration. P1202  
*T. Yamada, N. Nishiyama, Y. Isonaga, M. Morise, C. Komiyama, A. Harima, M. Kuwabara, Y. Tomita, T. Kodama, Y. Fujimoto, M. Wakatabe, A. Sato, K. Tanaka, Y. Naruse, H. Mitani (Tokyo, JP)*

- Challenging implantation of a transvenous implantable cardioverter-defibrillator system in a patient with congenitally corrected transposition of the great arteries and dextrocardia P1203  
*I. Kaiser, D. Chung, A. Schlichting, E. Zengin, S. Hakmi, S. Willems, N. Gosau (Hamburg, DE)*

- Noise oversensing caused by involuntary muscle response inhibits detection of ventricular fibrillation during defibrillation testing P1204  
*S.W.E. Baalman, K.M. Kooiman, A.B.E. Quast, P.G. Postema, S. Donnelley, R.E. Knops (Amsterdam, NL; Minneapolis, US)*

- Endocardial ICD system implantation in children by epicardial approach: case series P1205  
*M. Sayed, O.M.N.I.A. Kamel, H. Hosney (Aswan, EG)*

- Subcutaneous ICD and elbow plank: chronicle of an inappropriate shock P1206  
*S.I. Llerena Butron, N. Rivas-Gandara, I. Roca-Luque, J. Perez-Rodon, J. Francisco-Pascual, A. Santos-Ortega, J. Rodriguez-Garcia, G. Pascual-Gonzalez, H. Tornos-Millet, L. Duran-Casademont, A. Salvador-Catalan, A. Aguilar-Palacios, M. Riera-Musach, I. Gonzalez-Marquez, D. Garcia-Dorado (Barcelona, ES)*

- Radiation therapy in patients with cardiac implantable electronic devices - findings and experiences after 1300 sessions P1207  
*J. T. Niedziela, E. Gadula-Gacek, J. Gorol, A. Kurek, S. Blamek, P. Plaza, L. Mischczyk, M. Tajstra, M. Gasior (Katowice, Gliwice and Ostrowiec Swietokrzyski, PL)*

- Thoracic magnetic resonance imaging performed safely in a pacing-dependent patient with a non-conditional implantable cardioverter-defibrillator and multiple abandoned leads P1208  
*S. Siddiqui, G. Dimitropoulos, A. Patwala (Stoke-on-Trent, GB)*
- DF-4 systems are not always interchangeable between different manufacturers P1209  
*L. Binner, S. Katthoefer, L. Allaria, C. Bothner, J. Mccarthy, W. Rottbauer (Ulm and Trier, DE; Tolothenaz, CH; Minneapolis, US)*
- Acute hemodynamic effects of combined dynamic cardiomyoplasty and cardiac resynchronisation therapies in a patient with dilated cardiomyopathy P1210  
*C. Bonanno, L. Le Vecchia, M. Barbiero, P. A. Grandjean, J. Schreuder (Vicenza and Legnago, IT; Maastricht and Hengelo, NL)*

08:30 - 18:00

POSTER SESSION

POSTERS

**Poster session 2 - 43rd EWGCCE Meeting****Session from the 43<sup>rd</sup> Annual Meeting of the ESC Working Group on Cardiac Cellular Electrophysiology**

- Changes in transcriptomics, protein expression and tissue structure underlie ventricular arrhythmogenesis in mitochondrial dysfunction. P1211  
*K. R. Chadda, C.E. Edling, H. Valli, S. Ahmad, C.L.H. Huang, K. Jeevaratnam (Surrey and Cambridge, GB)*
- Dynamic clamp facilitates drug studies in atrial myocytes from patients with atrial fibrillation P1212  
*A.O. Verkerk, G.A. Marchal, J.G. Zegers, M. Kawasaki, C.A. Remme, A.H.G. Driessen, J.R. De Groot, R. Wilders (Amsterdam, NL)*
- Acetylcholine attenuates pinacidil-induced abbreviation of the action potential in canine cardiac Purkinje fibers and papillary muscles P1213  
*B. Paszti, T. Magyar, T. Arpadffy-Lovas, A. Gyokeres, Z.S. Gurabi, N. Jost, A. Varro, L. Virag, C. Antzelevitch, I. Koncz (Szeged, HU; Wynnewood, US)*
- Functional characteristics of mutations identified in patients with long QT syndrome type 1, T309I and R562S P1214  
*M. Bebarova, O. Svecova, L. Baiazitova, M. Policarova, J. Hosek, T. Novotny (Brno, CZ)*
- Ectopic activity from optogenetically depolarized zone evoked by resonant activity of cardiac rhythm P1215  
*A.S. Teplenin, A.A.F. De Vries, A.V. Panfilov, D.A. Pijnappels (Leiden, NL; Ghent, BE)*
- In vivo optical mapping of cardiac action potentials in zebrafish larvae P1216  
*E. Sieliwarczyk, D. Schepers, E. Simons, M. Alaerts, L. Vergauwen, D. Knapen, J. Huisken, B. Loeys (Antwerp, BE; Madison WI, US)*
- Arrhythmia analysis of electrogram and optical data in electromap: a novel, open-source software platform. P1217  
*C. O'shea, J. Winter, A.P. Holmes, T.Y. Yu, S.P. Wells, J. Correia, X. Li, G.S. Chu, G.A. Ng, P. Kirchhof, L. Fabritz, K. Rajpoot, D. Pavlovic (Birmingham and Leicester, GB)*
- Nanosecond pulsed electric field excites cardiac myocytes via induction of slow sustained depolarization P1218  
*I. E. Azarov, I. Semenov, M. Casciola, A. G. Pakhomov (Norfolk, US)*
- Nuclear Ca homeostasis and mechanisms of remodeling in heart failure mediated atrial cardiomyopathy P1219  
*F. Hohendanner, D. Bode, S. Reimers, D. Lindner, M. Schwarzl, D. Westermann, U. Primessnig, N. Rolim, B. Pieske, F. Heinzel (Berlin and Hamburg, DE; Trondheim, NO)*
- Electrical substrate mapping of spontaneous ventricular fibrillation during acute myocardial infarction in a porcine model P1220  
*S.M. Sattler, E. Hesselkilde, M. Orini, P. Taggart, S. Pehrson, T. Jespersen, J. Tfelt-Hansen (Copenhagen, DK; London, GB)*
- Atrial conduction velocity, and novel fibrillation indices shannon entropy and magnitude squared coherence correlate with interstitial fibrosis P1221  
*J. A. B. Zaman, S.A. Aidarous, R.A. Chowdhury, J.D. Simonotto, P.M. Patel, N.S. Peters (Cambridge and London, GB)*
- Irreversible electroporation effect on cardiac cells investigated through phenotypic response P1222  
*G. Caluori, M. Tedesco, M. Pesl, R. Raiteri, Z. Starek (Brno, CZ; Genoa, IT)*
- Sodium channels play a key role in pacemaker excitability of the 10-day-old chick embryo right auricle. P1223  
*V. Golovko, E. Lebedeva (Syktyvkar, RU)*
- Angiotensin II-mediated oxidative stress increased the vulnerability of ventricular arrhythmia in cardiac hypertrophy rabbit model, which is suppressed by CaMKII inhibitor P1224  
*Y.S. Lee, D.G. Shin, B.C. Jung, H.W. Park (Daegu and Seoul, KR)*
- The increase of spontaneous action potential frequency in the sinoauricular area strips during mouse embryo development and effects of ivabradine. P1225  
*M. Gontkov, V. Golovko (Syktyvkar, RU)*



- Introducing simulated IK1 and leak compensation into human iPSC-cardiomyocytes using dynamic clamp on an automated patch clamp system P1226  
*A. Horvath, N. Becker, A. Fabbri, C. Grad, M. George, N. Fertig, T. De Boer (Munich, DE; Utrecht, NL)*
- Inappropriate conversion of current magnitude to current density may misinterpret results P1227  
*R. Kula, M. Bebarova, J. Simurda, M. Pasek (Brno, CZ)*
- Selective stimulation of m3 receptors leads to the suppression of I-type calcium current in rat myocardium at the late stages of ontogenesis. P1228  
*S. Tapilina, D. Abramochkin (Moscow, RU)*
- New classification of antiarrhythmic drugs P1229  
*M.I.N.G. Lei, L.I.N. Wu, D.E.R.E.K. Terrar, C., L.-H. Huang (Oxford and Cambridge, GB; Beijing, CN)*

## Tuesday 19 March



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# **AFIB MATTERS**

ATRIAL FIBRILLATION

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Millions of people have atrial fibrillation this website can help to understand

**What is Atrial Fibrillation?**  
**What are the signs & symptoms?**  
**How to live with Atrial Fibrillation?**

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**ESC**  
European Society  
of Cardiology

08:00 - 08:25 MAIN SESSION MOBITZ

**EHRA expert consensus papers - Key messages 3**

**Chairperson(s): C. Brunckhorst (Zurich, CH); S. Manola (Zagreb, HR)**

*This session will cover the key messages of the recent EHRA expert consensus paper on the subject.*

08:00 › Antithrombotic therapy in atrial fibrillation associated with acute coronary syndrome and/or PCI - The 2018 joint European consensus document 1230  
*L. Fauchier (Tours, FR)*

08:15 - 09:45 SYMPOSIUM SENNING

**How to tailor your EP procedure based on ECG findings**

**Chairperson(s): D. Katritsis (Athens, GR); N. Derval (Pessac, FR)**

*To identify key features of the ECG that can be helpful in planning the EP procedure*

08:15 › ECG localisation of accessory pathways 1231  
*F. G. Cosio (Getafe, ES)*

08:37 › Atrial tachycardia localisation based on the P wave 1232  
*J.M. Kalman (Victoria, AU)*

09:00 › Premature ventricular contraction localisation based on the ECG 1233  
*P. Santangeli (Philadelphia, US)*

09:22 › How to master ECG ventricular tachycardia morphology to direct ablation and define strategy 1234  
*M. Shenasa (San Jose, US)*

08:30 - 10:00 MAIN SESSION SOKOLOV

**Late-breaking trials 4**

**Chairperson(s): K. Zeppenfeld (Leiden, NL); H. Burri (Geneva, CH)**

08:30 › Optimising pacemaker and medical therapy in pacemaker patients for heart failure - the opt-pace trial 1235  
*M. Paton (Leeds, GB)*

08:40 › Optimising pacemaker and medical therapy in pacemaker patients for heart failure - the opt-pace trial - Discussion 1236

08:45 › The GermAn Laser Lead Extraction Registry: GALLERY 1237  
*S. Hakmi (Hamburg, DE)*

08:55 › GALLERY - Discussion 1238  
*M G Bongiorno (Pisa,IT)*

09:00 › Trial to be announced 1239

09:15 › Periprocedural edoxaban management in routine clinical practice is associated with low bleeding risk: outcomes from the prospective multicentre, multinational EMIT AF/VTE study 1241  
*P. Colonna (Bari, IT)*

09:25 › EMIT AF/VTE study - Discussion 1242  
*To be announced*

09:30 › Utility of thirty-day continuous ambulatory monitoring to identify patient with delayed occurrence of atrioventricular block after transcatheter aortic valve replacement 1243  
*Y.-M. Cha (Rochester, US)*

09:40 › Utility of thirty-day continuous ambulatory monitoring to identify patient with delayed occurrence of atrioventricular block after transcatheter aortic valve replacement - Discussion 1244

09:45 › Panel discussion. 1245

08:30 - 10:00 MAIN SESSION WENCKEBACH

**Unanswered but key aspects in atrial fibrillation**

**Chairperson(s): T. De Potter (Aalst, BE); A. Vora (Mumbai, IN)**

*Although atrial fibrillation has been the focus of intense research over the last two decades, there remain many open questions. This session overviews some of the unanswered questions in atrial fibrillation.*

- 08:30 › Genetics in atrial fibrillation 1246  
*P. Ellinor (Boston, US)*
- 08:52 › Mortality in atrial fibrillation 1247  
*N. Marrouche (Salt Lake City, US)*
- 09:15 › Sex differences in atrial fibrillation 1248  
*R. B. Schnabel (Hamburg, DE)*
- 09:37 › Atrial fibrillation and sport 1249  
*E. Marijon (Paris, FR)*

08:30 - 10:00 MAIN SESSION MOBITZ

**EHRA expert consensus papers - Key messages 4**

**Chairperson(s): F. Duru (Zurich, CH); A. Abdrakhmanov (Astana, KZ)**

- 08:30 › EHRA expert consensus statement on lead extraction 1250  
*N. Lever (Auckland, NZ)*
- 08:52 › Antiarrhythmic drugs-clinical use and clinical decision making 1251  
*G. A. Dan (Bucharest, RO)*
- 09:15 › Arrhythmias in emergency presentations and acute revascularisation 1252  
*Z. Kalarus (Zabrze, PL)*
- 09:37 › Arrhythmia management and device therapies in endocrine disorders 1253  
*F. Marin (Murcia, ES)*

08:30 - 10:00 SYMPOSIUM MIROWSKI

**Difficult tracings with interactive discussion**

**Educative session by RETAC group**

**Chairperson(s): L. De Roy (Wavre, BE); X. Vinolas Prat (Barcelona, ES)**

*This highly interactive joint session with RETAC will present clinical cases with practical discussions.*

- 08:30 › Narrow QRS tachycardias - Part 1 1254  
*T. Arentz (Bad Krozingen, DE)*
- 08:45 › Narrow QRS tachycardias - Part 2 1255  
*C.I. Park (Meyrin, Geneva, CH)*
- 09:00 › Broad QRS tachycardias - Part 1 1256  
*S. Venier (Grenoble, FR)*
- 09:15 › Broad QRS tachycardias - Part 2 1257  
*J. M. Guerra Ramos (Barcelona, ES)*
- 09:30 › Device implanted patients - Part 1 1258  
*P. Defaye (Grenoble, FR)*
- 09:45 › Device implanted patients - Part 2 1259  
*S. Boveda (Toulouse, FR)*

08:30 - 10:00 SYMPOSIUM MIROWSKI

**Device therapy - 60 years later**

**Chairperson(s): F. Braunschweig (Stockholm, SE); C. Butter (Bernau/Berlin, DE)**

*Perspective on new developments for non-transvenous and leadless device therapy. Understanding the challenge of energy supply.*

- 08:30 › Enabling antitachycardia pacing and pacing in extravascular ICDs 1260  
L. V. A. Boersma (Nieuwegein, NL)
- 08:52 › Leadless dual chamber pacing 1261  
G. Z. Duray (Budapest, HU)
- 09:15 › String defibrillator 1262  
P. Neuzil (Praha, CZ)
- 09:37 › Energy harvesting and rechargeable technology 1263  
T. Reichlin (Bern, CH)

08:30 - 10:00 HOW-TO SESSION COUMEL

**How to ablate persistent atrial fibrillation?**

**Chairperson(s): C. Blomstrom-Lundqvist (Uppsala, SE); T. Rostock (Mainz, DE)**

*The best strategy for ablating persistent atrial fibrillation is under debate. The aim of this 'how-to-session' is to discuss different approaches for ablating persistent atrial fibrillation.*

- 08:30 › Electrogram mapping and inducibility testing 1264  
D. Shah (Geneva, CH)
- 08:52 › Rotor and phase mapping and ablation 1265  
S. Knecht (Brugge, BE)
- 09:15 › Scar mapping and ablation 1266  
A.S. Jadidi (Bad Krozingen, DE)
- 09:37 › Forget mapping - Lines and predefined ablation 1267  
D. Scherr (Graz, AT)

08:30 - 10:00 MAIN SESSION HIS

**Cardiac monitors in heart rhythm disorders - From A to Z**

**Chairperson(s): F. Moscoso Costa (Lisboa, PT); R. Beinart (Ramat Gan, IL)**

*To explain the use of heart rhythm monitors as well describe their advantages and limitations of different types of heart rhythm monitors in clinical use*

- 08:30 › Is there still a role for holters and traditional ILRs? 1268  
A. Jaswal (New Delhi, IN)
- 08:52 › ECG patches 1269  
H. V. Huikuri (Oulu, FI)
- 09:15 › ILR monitoring in 2019 for arrhythmia detection - When and in whom 1270  
M. Stuehlinger (Innsbruck, AT)
- 09:37 › Smartphone and smartwatch arrhythmia detection 1271  
J. Eckstein (Basel, CH)

08:30 - 10:00 HOW-TO SESSION DAMATO

**Daily business in the pacemaker & arrhythmia clinic**

**Chairperson(s): M. Joao Ferreira (Coimbra, PT); T.M. Norekval (Bergen, NO)**

- 08:30 › Novel oral anticoagulant drugs or oral anticoagulant - What is best for the patient? 1272  
*V. Oriolo (Clevedon, GB)*
- 08:52 › Atrioventricular block with transcatheter aortic valve implantation is it still a problem 1273  
*K. Wilson (Tonbridge, GB)*
- 09:15 › CRT in a patient that did benefit and one that did not why? 1274  
*P. Nolan (Galway, IE)*
- 09:37 › Is MRI a risk for the patient? 1275  
*L. Hinterbuchner (Bergheim, AT)*

08:30 - 10:00 RAPID FIRE ABSTRACTS AGORA

**Rapid Fire 6: supraventricular tachycardia: new tools and techniques**

**Chairperson(s): P.P. Mitkowski (Poznan, PL); P. Chevalier (Lyon, FR)**

- 08:30 › Mechanisms of recurrent atrial tachycardia after radiofrequency catheter ablation in patients with congenital heart disease 1276  
*C. Brouwer, J. Hebe, P. Lukac, J.H. Nuernberg, J.C. Cosedis Nielsen, M. De Riva Silva, N. Blom, K. Zeppenfeld (Leiden, NL; Bremen, DE; Aarhus, DK)*
- 08:39 › A novel electrocardiographic sign to differentiate posteroseptal accessory pathways ablated from the right endocardium from those requiring a left-sided or inside the coronary sinus approach 1277  
*P. Pascale, S. Hunziker, L. Roten, D. Scherr, A. Denis, M. Daly, Y. Komatsu, A.J. Shah, M. Lebloa, E. Pruvot, F. Sacher, N. Derval, M. Hocini, P. Jais, M. Haissaguerre (Lausanne and Bern, CH; Bordeaux, FR)*
- 08:48 › Slow pathway localization using high resolution mapping of the triangle of Koch 1278  
*S. Bailin, T. Aung, C. Arter, C. Kocheria (Iowa City and Cambridge, US)*
- 08:57 › Antegrade conduction improvement with fast atrial pacing during radiofrequency ablation of atrioventricular nodal re-entrant tachycardia to predict slow pathway conduction disappearance 1279  
*S.S. Bun, A.M. Wedn, K. Hasni, N. Saoudi, D.G. Latcu, B. Enache, C. De Zuloaga (Monaco, MC; Buenos Aires, AR)*
- 09:06 › Safety, effectiveness and long-term outcome of maximum voltage-guided approach for cavotricuspid isthmus: preliminary results from LEONARDO registry 1280  
*G. Maglia, F. Pentimalli, F. Solimene, L. Calo', T. Infusino, G.B. Perego, G. Stabile, A. Rago, C. Tomasi, G. Zingarini, C. Devecchi, C. La Greca, E. Viviani, M. Malacrida, R. Verlato (Catanzaro, Savona, Mercogliano, Rome, Milan, Naples, Ravenna, Perugia, Vercelli, Brescia and Camposampiero (PD), IT)*
- 09:15 › Accessory pathway localization using ultra high density mapping of the AV annulus 1281  
*S. Bailin, T. Aung, C. Arter, C. Kocheria (Iowa City and Cambridge, US)*
- 09:24 › Peri-mitral flutter ablation: where is the right way to isthmus block? 1282  
*I. S. S. Goncalves, G.L. Silva, N. Cortez-Dias, C. Arantes, A. Nunes-Ferreira, J. Rigueira, I.A. Ricardo, R. Santos, L. Carpinteiro, F.J. Pinto, J. Sousa (Lisbon and Braga, PT)*
- 09:33 › Efficacy and safety of left nodal extension ablation in patients with AV nodal reentrant tachycardia and right-sided ablation failure 1283  
*C. A. Alvarez-Ortega, G. Navarrete, A. Velez, C. Solorzano, A. Rivas, A. Dominguez, E. Magallanes, C. Escobar, R. Peinado (Madrid, Guadalajara and Alcorcon, ES)*
- 09:42 › Incidence of supraventricular tachycardia after catheter ablation of atrial fibrillation 1284  
*N.T. Naganuma, H.M. Mori, A.H. Hamabe, A.K. Kawai, T.K. Kimura, H.T. Tabata (Tokyo, JP)*
- 09:51 › First results of ultra-low cryoablation in patients with cavotricuspid isthmus dependent atrial flutter; procedural and outcome data on efficacy and safety 1285  
*M.N. Klaver, T. De Potter, K.E. Iliodromitis, D. Cabrita, L.V.A. Boersma (Nieuwegein, NL; Aalst, BE; Laguna Hills, US)*

10:05 - 10:55

MODERATED POSTERS

MODERATED EPOSTER 1

**Moderated ePosters 13: mobile and remote technologies: opportunities and challenges**

**Chairperson(s): E. Svennberg (Danderyd, SE); J. Lumens (Maastricht, NL)**

Moderated posters are on display at their assigned Moderated Poster Session from 08:30 - 12:30 Presentation and discussion moderated by the chairpersons take place between 10:05 - 10:55

Validation study of a pulse-deriving wrist band using spot-check measurements to detect atrial fibrillation 1286  
L. Dankers, A. Elaachiri, T. Proesmans, T. Reyskens, M. Genicot, A. Vanvinckenroye, W. Waaijer, K. Leysen, L. Grieten (Diepenbeek and Hasselt, BE)

The quality of smartphone based heart rhythm monitoring using PPG technology in a large-scale free-living setting 1287  
T. Proesmans, F. Verbrugge, J. Vijgen, W. Mullens, M. Rivero-Ayerza, H. Van Herendael, P. Vandervoort, D. Nuyens (Diepenbeek, Genk and Hasselt, BE)

EuroEco (European health economic trial on home monitoring in ICD and CRT-D patients): a provider perspective on follow-up costs of remote monitoring - results for the CRT-D arm 1288  
H. Heidbuchel, M. Rivero-Ayerza, J. Vijgen, K. Malinowski, R. Willems, L. Van Erven, A. Marek, R.F. Romero Garrido, E. Garcia Campo, G. Hindricks (Antwerp, Genk, Hasselt and Leuven, BE; Aue, Berlin and Leipzig, DE; Leiden, NL; Santa Cruz de Tenerife and Vigo, ES)

Preliminary experience of remote management of heart failure patients with the multisensor HeartLogic alert 1289  
A. D'onofrio, A. Capucci, A. Martino, N. Danisi, D. Pecora, S. Favale, G. Molon, S. De Martino, V. Bianchi, L. Cipolletta, K. Mahfouz, C. La Greca, R. Memeo, M. Campari, L. Calo' (Naples, Ancona, Rome, Ostia Lido (Rome), Brescia, Bari, Negrar-Verona, Pavia and Milan, IT)

Managed remote monitoring using a vendor-neutral software system: a retrospective analysis of >10,000 patients 1290  
C. O'shea, J. Hendriks, K. Campbell, A. Munawar, M. Emami, K. Khokhar, K. Kadhim, D. Linz, V. Malik, R. Mishima, A. Thiagarajah, D. Lau, R. Mahajan, P. Sanders (Adelaide, AU)

Insecurity by obscurity: a cybersecurity risk assessment of cardiac implantable electronic devices. 1291  
K.M. Dyrda, M.S. Ngamboe Mvogo, P. Berthier, J.M. Fernandez (Montreal, CA)

Remote monitoring an atrial fibrillation recurrence after ablation: defining a recurrence endpoint 1292  
C. Schwab, M. Forkmann, T. Fischer, A. Vevecka, O. Turchner, S. Butz, I. Ajmi, D. Edler, C. Mahnkopf, J. Brachmann, S. Busch (Coburg, DE)

10:05 - 10:55

MODERATED POSTERS

MODERATED EPOSTER 2

**Moderated ePosters 14: Best graded clinical cases. Unexpected challenges, complications and smart solutions for the interventional EP**

**Chairperson(s): S. Richter (Leipzig, DE); M. De Riva Silva (Leiden, NL)**

Moderated posters are on display at their assigned Moderated Poster Session from 08:30 - 12:30 Presentation and discussion moderated by the chairpersons take place between 10:05 - 10:55

Novel left parasternal epicardial access using a micropuncture kit 1293  
J. M. Behar, A. Graham, K. Savvatis, P.D. Lambiase, M. Dhinoja (London, GB)

Early hyperbaric oxygen therapy for cerebral air embolism during atrial fibrillation ablation 1294  
T.A.N.E.R. Ulus, E.R.D.I. Babayigit, E.Z.G.I. Camli, O.Z.L.E.M. Aykac, Z.E.H.R.A. Kocabas, A.T.I.L.L.A. Ozdemir, E.R.D.I.N.C. Ercan (Eskisehir, TR)

Bipolar radiofrequency ablation of parahisian premature ventricular contractions. 1295  
P.R. Futyma, P. Kulakowski (Rzeszów and Warsaw, PL)

Zigzag bipolar radiofrequency catheter ablation: a novel technique to achieve transmural lesions to eliminate ventricular arrhythmias 1296  
S.M. Maeda, M.G. Goya, T.Y. Yamamoto, M.N. Nakao, H.K. Kujiraoka, K.A. Akiyoshi, M.S. Sekigawa, A.Y. Yagishita, Y.T. Takahashi, M.K. Kawabata, K.H. Hirao (Tokyo, JP)



(to be continued)

(continued)

- Transvenous or epimyocardial? How dizziness and palpitations can lead to tricuspid valve surgery 17 years after implantation of a transvenous pacemaker for congenital heart block 1297  
*V. Rubesch-Kuetemeyer, K.J. Gutleben, K. Hakim-Meibodi, T. Eitz (Bad Oeynhausen, DE)*
- Pacing above and beyond: single chamber atrial pacing in a patient with a Mustard procedure and superior baffle obstruction 1298  
*C. Lozano-Granero, I. Sanchez-Perez, E. Franco, R. Matia, A. Hernandez-Madrid, A. Ayala, J.L. Zamorano, J. Moreno (Madrid, ES)*

10:05 - 10:55

MODERATED POSTERS

MODERATED EPOSTER 3

**Moderated ePosters 15: Implantable device therapy : the good, the bad and the ugly**

**Chairperson(s): C. T. Starck (Berlin, DE); C. Butter (Bernau/Berlin, DE)**

*Moderated posters are on display at their assigned Moderated Poster Session from 08:30 - 12:30 Presentation and discussion moderated by the chairpersons take place between 10:05 - 10:55*

- Are the risk factors different in pocket- and systemic device infections? data from the danish pacemaker and ICD register on 79,091 patients 1299  
*T. Olsen, O.D. Joergensen, B.T. Philbert, A.M. Thoegersen, J.C. Nielsen, J.B. Johansen (Odense, Copenhagen, Aalborg and Aarhus, DK)*
- Lead-related venous stenosis in CIED carriers - is there a chance for an effective use of venous approach for AV fistula and hemodialysis catheter? Findings of 2228 venographies before TLE. 1300  
*M. Czajkowski, L. Tulecki, K. Tomkow, A. Polewczyk, W. Jachec, M. Polewczyk, A. Kutarski (Lublin, Zamosc, Kielce and Zabrze, PL)*
- Concomitant anti-platelet therapy in warfarin-treated patients undergoing cardiac rhythm device implantation: a secondary analysis of the BRUISE CONTROL trial 1301  
*V. Essebag, A. Alturki, R. Proietti, J.S. Healey, G.A. Wells, D. Birnie (Montreal, Hamilton and Ottawa, CA; Padua, IT)*
- Port-a-caths infected or migrated, not removable by manual traction: the exit strategy of cardiac pacing leads extraction techniques 1302  
*R. De Lucia, G. Zucchelli, L. Segreti, A. Di Cori, V. Barletta, S. Viani, L. Paperini, E. Soldati, M.G. Bongiorno (Pisa, IT)*
- Transvenous leads extraction in elderly 1303  
*A. Polewczyk, W. Jachec, L. Segreti, M.G. Bongiorno, A. Kutarski (Kielce, Zabrze and Lublin, PL; Pisa, IT)*
- Unexpected technical problems during transvenous lead extraction. The experience among 2841 TLE procedures. 1304  
*A. Kutarski, L. Tulecki, K. Tomkow, W. Jachec, M. Polewczyk, D. Nowosielecka, M. Czajkowski (Lublin, Zamosc, Zabrze and Kielce, PL)*
- Lead related venous narrowing and occlusion. The scale of the problem - Lesson from 2105 TLE procedures. 1305  
*M. Czajkowski, L. Tulecki, K. Tomkow, A. Polewczyk, W. Jachec, M. Polewczyk, A. Kutarski (Lublin, Zamosc, Kielce and Zabrze, PL)*
- Routine needle aspiration for treating iatrogenic pneumothorax after cardiac electronic device implantation: a pilot study 1306  
*D. Domokos, A. Szabo, B. Polgar, Z. Bari, P. Bogyi, I. Marczell, L. Papp, R.G. Kiss, G.Z. Duray, I. Hizoh (Budapest, HU)*

10:15 - 10:45 SATELLITE SYMPOSIUM - EXPERTS ON THE SPOT AGORA

**Strategies to reduce implantable cardiac device infections**

Sponsored by Medtronic

Chairperson(s): **A. Goette (Paderborn, DE)**

Learn how an antibacterial envelope prevents cardiac implantable electronic device infection.

Learn and discuss the clinical results with an antibacterial envelope including the learnings from the WRAP-IT study.

- 10:15 › Introduction - Strategies to reduce implantable cardiac device infections. 1307  
A. Goette (Paderborn, DE)
- 10:20 › Reducing infection with an antibacterial envelope. 1308  
M. Biffi (Bologna, IT)
- 10:35 › Questions and answers - Strategies to reduce implantable cardiac device infections. 1309  
A. Goette (Paderborn, DE)

11:00 - 12:30 MAIN SESSION SOKOLOV

**State of the Art review of paroxysmal supraventricular tachycardia from a clinician's point of view**

Joint session with the Asian Pacific Heart Rhythm Society (APHRS) 

Chairperson(s): **A. Auricchio (Lugano, CH); J.M. Kalman (Victoria, AU)**

The purpose of this joint session with Asian Pacific Heart Rhythm Society (APHRS) is to update clinicians on recent developments in the management of supraventricular tachycardias in general and in some specific patient populations.

- 11:00 › Supraventricular tachycardia management in 2019 1310  
D. Katritsis (Athens, GR)
- 11:22 › Approaches to difficult supra ventricular tachycardia ablation 1311  
C.K. Ching (Singapore, SG)
- 11:45 › Asymptomatic Wolff-Parkinson-White syndrome - When not to ablate 1312  
J. M. Almendral Garrote (Madrid, ES)
- 12:07 › Approach to mapping and ablation of focal atrial tachycardia 1313  
H.N. Pak (Seoul, KR)

11:00 - 12:30 HOW-TO SESSION SENNING

**Indications for atrial fibrillation ablation in difficult scenarios**

Mobile App interactive session - Ask questions 

Chairperson(s): **S. Boveda (Toulouse, FR); J. M. Guerra Ramos (Barcelona, ES)**

Catheter ablation is indicated in symptomatic paroxysmal or persistent atrial fibrillation patients with limited structural heart disease. The aim of this case-based session is to learn when to perform ablation in patients with less clear indications starting from a representative case.

- 11:00 › The asymptomatic patient 1314  
O. Wazni (Cleveland, US)
- 11:18 › Mitral valve disease 1315  
M. De Riva Silva (Leiden, NL)
- 11:36 › Heart failure 1316  
J. Brachmann (Coburg, DE)
- 11:54 › Long lasting persistent atrial fibrillation 1317  
I. Deisenhofer (Munich, DE)
- 12:12 › Panel discussion 1318  
R.P. Martins (Rennes, FR); K.V. Nagy (Budapest, HU)

11:00 - 12:30 MAIN SESSION WENCKEBACH

**Image-guided approach to CRT**

**Chairperson(s): M. Gasparini (Rozzano, IT); M. Glikson (Jerusalem, IL)**

*Cardiac imaging to select patients for cardiac resynchronization therapy (CRT) and support the implantation of a CRT device is of paramount importance. This session is meant to provide the state-of-art in the field of image-guided approach to CRT.*

- 11:00 › Echocardiography. Does it still play a role? 1319  
*J. J. Bax (Leiden, NL)*
- 11:22 › Scar presence, heterogeneity and burden. That's all you need to know! 1320  
*J. Acosta Martinez (Sevilla, ES)*
- 11:45 › Electrocardiogram imaging - A nice-to-have or a must-have tool? 1321  
*K. Vernooy (Maastricht, NL)*
- 12:07 › Multimodality imaging in selecting and guiding left ventricular placement 1322  
*J. M. Behar (London, GB)*

11:00 - 12:30 MAIN SESSION MOBITZ

**Arrhythmias in special clinical contexts**

**Chairperson(s): R. Hatala (Bratislava, SK); G. M. Shaban (Cairo, EG)**

*This session covers management of arrhythmias occurring in specific clinical conditions or secondary to extra-cardiac disorders.*

- 11:00 › Arrhythmias in pregnancy 1323  
*E. Delacretaz (Lausanne, CH)*
- 11:22 › Gastro-intestinal disorders and arrhythmias 1324  
*H. J. G. M. Crijns (Maastricht, NL)*
- 11:45 › Sleep apnea and arrhythmias 1325  
*P.S. Sanders (Adelaide, AU)*
- 12:07 › Secondary atrial fibrillation - Does it recur? 1326  
*L. Fauchier (Tours, FR)*

11:00 - 12:30 SPECIAL SESSION MIROWSKI

**Live case session - Ablation of ischaemic ventricular tachycardia**

Special Session 

**Chairperson(s): K. Zeppenfeld (Leiden, NL); F. Marchlinski (Philadelphia, US)**

*To witness state of the art technology being used by exoerts for treating ventricular tachycardia*

- 11:00 › Live from Leipzig - Case of the day using Precision and a high density mapping catheter 1327  
*A. Arya (Leipzig, DE)*
- 11:30 › Live in the box - Pacemap-guided ablation in ischaemic ventricular tachycardia patient 1328  
*C. de Chillou (Vandoeuvre Les Nancy, FR)*
- 12:00 › Live in the box - Needle ablation 1329  
*J. L. Sapp (Halifax, CA)*

11:00 - 12:30 SPECIAL SESSION FURMAN

**EHRA EP tracings open**

Special Session, Mobile App interactive session - Ask questions  

**Chairperson(s): P. Peichl (Prague, CZ); S. Tzeis (Maroussi, GR)**

- 11:00 › Quiz 1 1330
- 11:07 › Quiz 2 1331
- 11:14 › Quiz 3 1332
- 11:21 › Quiz 4 1333

11:00 - 12:30 MAIN SESSION COUMEL

**Lifestyle modifications in CIED patients**

**Chairperson(s): L. Calo' (Marino, IT); B. Merkely (Budapest, HU)**

- 11:00 › Driving restrictions 1334  
*F. Merchant (Atlanta, US)*
- 11:22 › Fit to fly? 1335  
*L. Kappenberger (Lausanne, CH)*
- 11:45 › Scuba diving - Is it safe? 1336  
*N. Dayal (Prangins, CH)*
- 12:07 › Risk of electromagnetic interference in the daily environment 1337  
*C. Lennerz (Muenchen, DE)*

11:00 - 12:30 MAIN SESSION HIS

**Critical appraisal of antiarrhythmic drug therapy - The science behind trial-and-error**

**Chairperson(s): D. Dobrev (Essen, DE); C. A. Remme (Amsterdam ZO, NL)**

*Chemistry is one of the corner stones of clinical cardiology, but not without failure. The aim of this main session is to learn how anti-arrhythmic drug therapy has shaped the past and may shape the future of clinical cardiology by basic science contributing to more personalized and mechanism-based drug development.*

- 11:00 › The trials-and-errors of antiarrhythmic drug therapy 1338  
*A. J. Camm (London, GB)*
- 11:18 › Genetic basis for tailored drug therapy for ventricular arrhythmias 1339  
*K. E. Odening (Freiburg, DE)*
- 11:36 › Rationale behind development of novel drugs for atrial arrhythmias 1340  
*J. Heijman (Maastricht, NL)*
- 11:54 › Antiarrhythmic drugs - What, why, when to whom 1341  
*G. A. Dan (Bucharest, RO)*
- 12:12 › Panel discussion 1342  
*J.T. Koivumaeeki (Tampere, FI); N. Schmitt (Copenhagen N, DK)*

11:00 - 12:30 MAIN SESSION DAMATO

**Certification and advanced practice are we there yet?**

**Organised with the EU Regulatory Affairs Committee**

**Chairperson(s): M.S. Jesus Coelho (Coimbra, PT); S. Pedersen (Odense, DK)**

- 11:00 › Is certification realistic for nurses and allied health professionals in Europe? 1343  
*E. Kletsiou (Athens, GR)*
- 11:22 › The EHRA certification exam - What it is, and why you should have it 1344  
*B. G. F. Springorum (Amsterdam, NL)*
- 11:45 › Mock EHRA device certification exam, how knowledgeable are you? 1345  
*D.A.M.J. Theuns (Rotterdam, NL)*
- 12:07 › Working as an advanced nurse practitioner - Qualifications needed? 1346  
*J. M. L. Hendriks (Sittard, NL)*

11:00 - 12:30

RAPID FIRE ABSTRACTS

AGORA

**Rapid Fire 7: non-invasive rhythm diagnostic tools: what's new?**

**Chairperson(s): N. Varma (Cleveland, US); N. Antonio (Coimbra, PT)**

- 11:00 > Noninvasive panoramic mapping of electrical rotors with multivariate signal complexity analysis in patients with persistent atrial fibrillation 1347  
*M. Chmelevsky, M. Budanova, S. Zubarev, D. Potyagaylo, C. Sohns, C. Lemes, D. Kivelitz, A. Metzner, T. Treshkur, D. Lebedev, K.-H. Kuck (Saint-Petersburg, RU; Karlsruhe and Hamburg, DE)*
- 11:09 > Analysis of amplified sinus-p-wave to localise left atrial low voltage substrate and guide pulmonary vein isolation in persistent atrial fibrillation 1348  
*B. Mueller-Edenborn, J. Chen, J. Allgeier, H. Lehmann, F.-J. Neumann, T. Arentz, A. Jadidi (Bad Krozingen, DE)*
- 11:18 > Fully automated measurements of scar size on computed tomography relate to arrhythmia risk in post-infarction patients implanted with ICDs for primary prevention 1349  
*A. Lam, N. Cedilnik, K. Vlachos, M. Takigawa, J. Duchateau, N. Derval, A. Denis, M. Hocini, M. Haissaguerre, T. Reichlin, L. Roten, F. Sacher, P. Jais, M. Sermesant, H. Cochet (Bordeaux-Pessac and Nice, FR; Bern, CH)*
- 11:27 > Non-invasive atrial fibrosis assessment using LGE CMR imaging is reproducible using an open source, freely available software platform 1350  
*I. Sim, O. Razeghi, R. Karim, J. Whitaker, L. O'Neill, R.K. Mukherjee, C.H. Roney, R. Razavi, M. Wright, M. O'Neill, S. Niederer, S.E. Williams (London, GB)*
- 11:36 > A combined mri and ECG-imaging investigation to determine the electrophysiological manifestation of cardiac light-chain and transthyretin amyloidosis 1351  
*M. Orini, A.J. Graham, A. Martinez, A. Cambridge, S. Whittaker-Axon, H. Daw, M. Fontana, P.D. Lambiase (London, GB)*
- 11:45 > Direct Validation Electrocardiography Imaging (ECGi) by Epicardial Contact Mapping during VT Ablation 1352  
*A.J. Graham, M. Orini, E. Zacur, G. Dhillon, H. Daw, A. Cambridge, M. Dhinoja, A. Chow, S. Sporton, R. Hunter, P.D. Lambiase (London, GB)*
- 11:54 > Role of abnormal dispersion of ventricular repolarization as a risk factor for mortality in patients with noncompaction cardiomyopathy 1353  
*E.I. Cikirdekci, B. Bugan, N. Ozbilgin (Kyrenia, Mersin and Istanbul, TR)*
- 12:03 > Amplitude of inverted T-waves in arrhythmogenic cardiomyopathy in specific right ventricular leads 1354  
*S. Peters (Salzgitter, DE)*
- 12:21 > The impact of qt-interval duration on mortality in a large cohort of community based adult population with a long term follow-up 1356  
*B. Hunuk, O. Cagac, M.A. Simsek, K.E. Aslanger, O. Ozveren, A. Turer, B. Mutlu, C. Erol, M.M. Degertekin (Istanbul, Antalya and Ankara, TR)*

12:45 - 13:45

SATELLITE SYMPOSIUM

WENCKEBACH

**The growing prevalence of Atrial Fibrillation (AF): the need for devices that detect, reduce and respond to AF**

Sponsored by Medtronic

Chairperson(s): **W. Jung (Villingen-Schwenningen, DE); F. Arribas (Madrid, ES)**

Learn how implantable cardiac devices reliably detect atrial fibrillation and why early detection is important. Learn how dedicated algorithms in implantable cardiac devices result in a slower progression to persistent atrial fibrillation.

Learn how smart algorithms in cardiac resynchronization therapy devices ensure delivery of therapy during episodes of atrial fibrillation.

12:45 ›	Introduction - The growing prevalence of Atrial Fibrillation (AF): the need for devices that detect, reduce and respond to AF. <i>F. Arribas (Madrid, ES)</i>	1360
12:50 ›	Detect: how important is early and accurate detection of AF? <i>J. R. De Groot (Amsterdam, NL)</i>	1361
13:05 ›	Reduce: how do device algorithms reduce AF? <i>M.M. Martinek (Linz, AT)</i>	1362
13:20 ›	Respond: how to ensure therapy delivery during AF? . <i>S.C. Yap (Rotterdam, NL)</i>	1363
13:35 ›	Conclusions - The growing prevalence of Atrial Fibrillation (AF): the need for devices that detect, reduce and respond to AF. <i>W. Jung (Villingen-Schwenningen, DE)</i>	1364

12:45 - 13:45

SATELLITE SYMPOSIUM

MIROWSKI

**Catheter ablation and anticoagulation in patients with Atrial Fibrillation (AF): where do we stand?**

Sponsored by Daiichi Sankyo, Europe

Chairperson(s): **S. H. Hohnloser (Frankfurt, DE)**

- To discuss the results of the ELIMINATE-AF trial in perspective of existing NOAC trials in this setting
- To discuss which are the possible implications of NOAC trials in ablation practice
- To present the current recommendation from guidelines for Atrial Fibrillation (AF) patients undergoing ablation

12:45 ›	Welcome and Introduction - Catheter ablation and anticoagulation in patients with Atrial Fibrillation (AF): where do we stand? <i>S. H. Hohnloser (Frankfurt, DE)</i>	1365
12:50 ›	ELIMINATE-AF trial in the context of other non-vitamin K antagonist oral anticoagulant trials. <i>J. Kautzner (Prague, CZ)</i>	1366
13:05 ›	Implications of non-vitamin K antagonist oral anticoagulant trials in ablation practice. <i>M. Grimaldi (Bari, IT)</i>	1367
13:20 ›	Current recommendation for atrial fibrillation patients undergoing ablation. <i>J. Steffel (Zurich, CH)</i>	1368
13:35 ›	Panel discussion and closing remarks - Catheter ablation and anticoagulation in patients with Atrial Fibrillation (AF): where do we stand? <i>S. H. Hohnloser (Frankfurt, DE)</i>	1369

12:45 - 13:15

SPECIAL EVENT

AGORA

**Award Ceremony Focus On**

Chairperson(s): **I. C. Van Gelder (Groningen, NL); H. Heidbuchel (Antwerp, BE); H. Burri (Geneva, CH)**

12:45 › Acknowledgement of all poster presenters

14:00 - 15:30 SPECIAL SESSION SOKOLOV

**EHRA 2019 - Congress highlights**

Special Session



**Chairperson(s): H. Burri (Geneva, CH); H. Heidbuchel (Antwerp, BE); K. Zeppenfeld (Leiden, NL)**

14:00 ›	Introductions & Awards <i>K. Zeppenfeld (Leiden, NL)</i>	1370
14:10 ›	Basic science <i>D.A. Pijnappels (Leiden, NL)</i>	1371
14:20 ›	Clinical atrial fibrillation <i>I. C. Van Gelder (Groningen, NL)</i>	1372
14:30 ›	Atrial fibrillation ablation <i>M. Duytschaever (Brugge, BE)</i>	1373
14:40 ›	Ventricular tachycardia ablation <i>A. Berruezo Sanchez (Barcelona, ES)</i>	1374
14:50 ›	ECG, rhythm diagnostics & syncope <i>D. Scherr (Graz, AT)</i>	1375
15:00 ›	Pacemakers & ICDs <i>M. Biffi (Bologna, IT)</i>	1376
15:10 ›	CRT <i>A. Auricchio (Lugano, CH)</i>	1377
15:20 ›	Closing remarks <i>H. Burri (Geneva, CH)</i>	1378



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**ESC**  
European Society  
of Cardiology



08:30 - 12:30

POSTER SESSION

POSTERS

**Poster session 3**

**Rehabilitation and Sports Cardiology**

- Management of young athletes with ventricular arrhythmias P1379  
*D.Y.U. Alekseeva, S.V. Popov, I.A. Zemskov, E.S. Vasichkina, V.V. Grigoryev (Saint Petersburg, RU)*
- Disorders of rhythm and conduction in young athletes. Prospective observation data P1380  
*D.Y.U. Alekseeva, S.V. Popov, I.A. Zemskov, E.S. Vasichkina, V.V. Grigoryev (Saint Petersburg, RU)*
- Are heart rate variability and duration of intervals and components in resting electrocardiogram in elite athletes dependent on their sporting discipline? P1381  
*R. Ulinski, P. Stepek, H. Krysztofiak (Warsaw, PL)*
- Frequency and gender differences of minor ECG changes and their relation to cardiac structural remodelling in athletes P1382  
*B. K. Lakatos, O. Kiss, M. Tokodi, M. Major, J. Erdi, A. Fabian, Z.S. Komocsin, N. Sydo, A. Ujvari, B. Merkely, A. Kovacs (Budapest, HU)*
- Analysis of ECG repolarization parameters in young competitive athletes P1383  
*A. Orosz, I. Nikolic, T. Stojmenovic, N. Dikic, I. Nedeljkovic, V. Jakovljevic, A. Nemes, C. Lengyel, A. Varro, I. Baczko (Szeged, HU; Belgrade and Kragujevac, RS)*
- Fit-Obese and Unfit-obese: Is there a difference between cardiorespiratory fitness? Implications for AF recurrence P1384  
*M. E. Middeldorp, A.D. Elliott, A. Gupta, R.K. Pathak, D. Linz, J.M. Hendriks, C. Gallagher, D.H. Lau, P. Sanders (Adelaide, AU)*
- Atypical forms of AVNRT are more prevalent in athletes P1385  
*H. Miljoen, J. Ector, C. Garweg, J. Saenen, W. Huybrechts, A. Sarkozy, R. Willems, H. Heidbuchel (Antwerp and Leuven, BE)*

**Digital Health**

- Integrated screening after cryptogenic stroke using central longer-term trans-telephonic ECG monitoring P1386  
*V. Bulkova, D. Sanak, A. Tomek, M. Brozman, R. Mikulik, M. Nevsimalova, Z. Monhart, J. Gandalovicova, M. Kovar, D. Kovarikova, M. Taborsky, M. Fiala (Brno, Olomouc, Prague, Ceske Budejovice and Znojmo, CZ; Nitra, SK)*
- Implementation of a pulse-deriving smartphone application in high-risk populations for primary and secondary prevention of stroke P1387  
*T. Proesmans, B. Francois, M. Rivero-Ayerza, H. Van Herendael, D. De Cock, D. Nuyens, F. Provenier, T. Boussy, L. Desteghe, D. Berti, P. Dendale, J. Vijgen, W. Anne, K. Dujardin, P. Vandervoort (Diepenbeek, Gent, Genk, Ypres, Kortrijk, Hasselt and Roeselare, BE)*
- Impact and cost-effectiveness of long-term intermittent PPG monitoring in stroke patients P1388  
*T. Proesmans, L. Desteghe, D. Berti, D. De Cock, V. Soufflet, P. Vandervoort, V. Storms, P. Dendale, J. Vijgen, B. Van Gorp, D. Nuyens (Diepenbeek, Hasselt, Ypres and Genk, BE)*
- Is compliance to heart rhythm monitoring an indication of patient education? P1389  
*T. Proesmans, F. Verbrugge, J. Vijgen, W. Mullens, M. Rivero-Ayerza, H. Van Herendael, P. Vandervoort, D. Nuyens (Diepenbeek, Genk and Hasselt, BE)*
- Determining the diagnostic yield for atrial fibrillation using continuous smartwatch monitoring P1390  
*M. Genicot, A. Vanvinckenroye, T. Proesmans, J. Vranken, P. Vandervoort (Hasselt, Diepenbeek and Genk, BE)*
- The impact of signal quality on continuous arrhythmia monitoring using smartwatch technologies P1391  
*M. Genicot, A. Vanvinckenroye, T. Proesmans, J. Vranken, P. Vandervoort (Hasselt, Diepenbeek and Genk, BE)*
- Effect of age on the usability of a photoplethysmography based smartphone application P1392  
*A. Elaachiri, T. Proesmans, J. Van Der Auwera, L. Grieten (Diepenbeek and Hasselt, BE)*
- Handling of smartphone ECG: Is the elderly generation capable? P1393  
*H. Haverkamp, S. Fosse, P. Schuster (Bergen, NO)*

## Basic Science

- Bipolar electrogram morphology depends on conduction velocity, catheter orientation, scar size, and catheter type: in silico modeling study P1394  
M. Hwang, J.H. Kim, B. Lim, J.S. Song, B. Joung, H.N. Pak (Seoul, KR)
- Electrophysiological significance of inter-atrial conduction during atrial fibrillation ablation: in silico modeling study P1395  
B.H. Lim, M. Hwang, J. Kim, A.J. Ryu, I.S. Kim, H.T. Yu, B. Joung, E.B. Shim, H.N. Pak (Seoul and Chuncheon, KR)
- Anti-miR-21 loaded exosome as a potential regulator for myocardial infarction P1396  
J.Y. Kang, H.E. Kim, D.S. Mun, N.R. Yun, B.Y. Joung (Seoul, KR)
- Delivery of siRNAs to heart by cardiac targeting peptide-expressing exosomes. P1397  
H.E. Kim, D.S. Mun, J.Y. Kang, N.R. Yun, B. Joung (Seoul, KR)
- Antiarrhythmic effects of exosome extracted from serum of atrial fibrillation patients by inhibiting HDAC6 via miR-548az-5p P1398  
H.E. Kim, D.S. Mun, J.Y. Kang, N.R. Yun, B. Joung (Seoul, KR)
- Differential expression of miRNAs in circulating exosomes derived from patients with persistent atrial fibrillation P1399  
D. Mun, H.E. Kim, J.Y. Kang, N.R. Yun, B.Y. Joung (Seoul, KR)
- Specificity of myocardial depolarization in experimental alcoholic cardiomyopathy: electrophysiological study P1400  
I.M. Roshchevskaya, S.L. Smirnova, L.G. Kolik, A.D. Durnev, S.A. Kryzhanovskii (Moscow and Syktyvkar, RU)
- Impaired coronary blood flow at higher heart rates during atrial fibrillation P1401  
A. Saglietto, S. Scarsoglio, C. Gallo, L. Ridolfi, M. Anselmino (Turin, IT)

## Arrhythmias, General - Diagnostic Methods

- Epicardial activation patterns in heart failure patients with distinct conduction defects: insights from non-invasive electrocardiographic imaging P1402  
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# CALL FOR ABSTRACTS

- ◆ Submission Opens  
1 April 2019
- ◆ Submission Deadline  
30 June 2019
- ◆ Notification of Acceptance  
31 July 2019

## APHRS 2019 Highlights

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- ◆ Stroke Prevention: State of the Art by  
**Dr. Gregory YH Lip**
- ◆ Morning with  
**Dr. Sonny Jackman - AVNRT**
- ◆ Afternoon with  
**Dr. David Hayes - Device Troubleshooting**
- ◆ How to have fun implanting an LV lead by  
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**APHRS 2019**  
12<sup>th</sup> ASIA PACIFIC HEART RHYTHM  
SOCIETY SCIENTIFIC SESSION

## SAVE THE DATE

**24-27 October 2019**  
(THU-SUN)

Centara Grand & Bangkok Convention Centre  
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