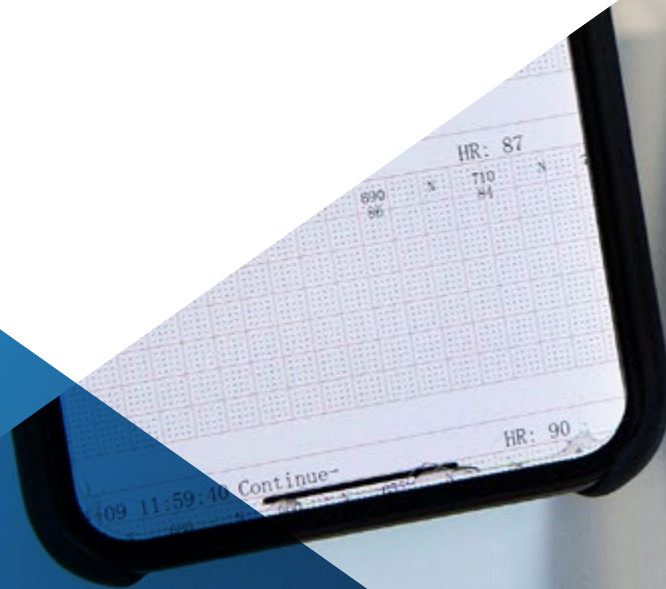


# Postgraduate Certificate

Arrhythmias, Valvulopathies  
and Pericardial Involvement  
in Cardiotoxicity in the  
Oncologic Patient





## Postgraduate Certificate

### Arrhythmias, Valvulopathies and pericardial Involvement in Cardiotoxicity in the Oncologic Patient

- » Modality: online
- » Duration: 8 weeks
- » Certificate: TECH Global University
- » Credits: 9 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/medicine/postgraduate-certificate/arrhythmias-valvulopathologies-pericardial-involvement-cardiotoxicity-oncologic-patient](http://www.techtute.com/us/medicine/postgraduate-certificate/arrhythmias-valvulopathologies-pericardial-involvement-cardiotoxicity-oncologic-patient)

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# 01

# Introduction

Arrhythmias, valvular heart disease and pericardial conditions resulting from cardiotoxicity are recurrent pathologies in cancer patients. Their early detection is essential for the prognosis and future well-being of the patient. This course is oriented to update the specialist's knowledge with the latest advances and techniques in the field, in order to provide the best medical practice to their patients.



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*Improve your knowledge in Oncological Cardiology through this course, where you will find the best didactic material with real case studies”*

Cardiac toxicity (CT) occurs in 30% of the millions of patients treated today for oncological processes. This is a "serious complication that usually debuts as heart failure and negatively affects the prognosis" of patients. The onset and severity of CT related to oncologic treatment are varied, depending mainly on each patient's individual susceptibility, the mechanism of action of the therapy, the capacity for early detection and the establishment of targeted treatment.

The objective of this course is to offer updated training in an area of current relevance from the clinical point of view, whose knowledge is advancing at a dizzying pace, focused on the training of professionals interested in the subject.

Cardiologists, oncologists and hematologists with special interest in this field have with this course the opportunity to complete and update their knowledge in oncologic cardiology. The final objective of this training will be that students learn the pathophysiological basis of the genesis of CT, as well as the ways to detect and treat it. Students will get to know, understand and apply the latest diagnostic techniques, and preventive and therapeutic measures specific to CT in oncology patients.

Emphasis will be placed on solving complex clinical problems by performing case studies based on real-life situations. In addition, it offers a unique opportunity to learn about the latest research advances in this high-demand field.

This Postgraduate Certificate in Arrhythmias, Valvulopathies and Pericardial Affectation in Cardiotoxicity in the Oncologic Patient offers you the characteristics of a course of high scientific, teaching and technological level. These are some of its most notable features:

- Latest technology in online teaching software.
- Highly visual teaching system, supported by graphic and schematic contents that are easy to assimilate and understand.
- Practical cases presented by practising experts.
- State-of-the-art interactive video systems.
- Teaching supported by telepractice.
- Continuous updating and recycling systems.
- Self-regulating learning: full compatibility with other occupations.
- Practical exercises for self-evaluation and learning verification.
- Support groups and educational synergies: questions to the expert, debate and knowledge forums.
- Communication with the teacher and individual reflection work.
- Content that is accessible from any fixed or portable device with an Internet connection.
- Banks of complementary documentation permanently available, even after the course.



*Learn about the latest advances in the specialty to be able to perform a quality medical practice"*



“

*This course may be the best investment you can make in choosing a refresher program for two reasons: in addition to updating your knowledge in Arrhythmias, Valvulopathies and Pericardial Affectation Involvement in Cardiotoxicity in the Oncologic Patient, you will obtain a Postgraduate Certificate from TECH Global University"*

Our teaching staff is composed of professionals belonging to the field of Oncologic Cardiology. In this way we ensure that we provide you with the targeted capacitive upgrade we intend. A multidisciplinary team of doctors trained and experienced in different environments, who will develop the theoretical knowledge in an efficient way, but, above all, will put at the service of the Course the practical knowledge derived from their own experience: one of the differential qualities of this Course.

This mastery of the subject is complemented by the effectiveness of the methodological design of this course. Developed by a multidisciplinary team of e-learning experts, it integrates the latest advances in educational technology. This way, you will be able to study with a range of comfortable and versatile multimedia tools that will give you the operability you need in your training.

The design of this program is based on Problem-Based Learning: an approach that conceives learning as an eminently practical process. To achieve this remotely, we will use *telepractice*: with the help of an innovative interactive video system, and *learning from an expert*, you will be able to acquire the knowledge as if you were facing the scenario you are learning at that moment. A concept that will allow you to integrate and fix learning in a more realistic and permanent way.

*It includes clinical cases that bring the development of the program as close as possible to the reality of medical care.*

*You will have professionals in the sector to guide you throughout the training process.*



# 02

# Objectives

This training aims to train highly qualified professionals for work experience. An objective that is complemented, moreover, in a global manner, by promoting human development that lays the foundations for a better society. This objective is focused on helping medical professionals reach a much higher level of expertise and control. A goal that, in only 2 months you will be able to achieve, with a course of high intensity and precision.







“

*Develop your skills and abilities in Oncologic Cardiology with this highly scientifically rigorous program"*



## General Objective

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- Update Cardiologists, Oncologists, and Hematologists's knowledge in the field of Cardio-Oncology.
- Promote work strategies based on a comprehensive approach to the patient as a standard model for achieving excellent care.
- Encourage the acquisition of technical skills and abilities, through a powerful audio-visual system, and the possibility of development through online simulation workshops and/or specific training.
- Encourage professional stimulus through continuing education and research.
- Know the risk of developing ventricular arrhythmias and their specific treatment.
- Identify strategies to prevent prolongation of the QT interval on the electrocardiogram.
- Define the implications of prolongation of the QT interval on the electrocardiogram and the appearance of ventricular arrhythmias on the continuity of specific treatment.
- Recognize the clinical relevance and mechanisms of atrial tachyarrhythmias, especially atrial fibrillation in oncology patients.
- Recognize the clinical significance of bradyarrhythmias related to oncologic treatment.
- Learn the oncological treatments that are associated with the development of bradyarrhythmias and their therapeutic implications.
- Know the potential toxic effects of oncological treatments at the valvular level.
- Acquire updated knowledge on the attitude towards chronic valvular patients and patients with valvular prosthesis receiving oncologic treatment.







## Specific Objectives

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- Identify individual susceptibility factors, both genetic and acquired, for the occurrence of cardiac toxicity.
- Perform a comprehensive risk assessment of the patient who is going to undergo oncologic treatment.
- Describe the monitoring required by patients during treatment with cardiotoxic therapies.

*Learn new diagnostic and therapeutic procedures from specialists in the field.*

03

# Course Management

The program's teaching staff includes leading specialists in Cardio-Oncology, and other related areas, who bring their years of work experience to this training program. Additionally, other recognized specialists participate in its design and preparation, which means that the program is developed in an interdisciplinary manner. A unique opportunity to learn from the best.





“

*Learn about the latest advances in Cardio-Oncology procedures from leading professionals"*



## International Guest Director

Dr. Arjun Ghosh is recognized in the healthcare field for his many efforts to improve the quality of care at the University College London Hospital (UCLH) and Barts Heart Center. Both institutions have become international references in Cardiology, an area in which this doctor is considered a true eminence.

From his position as Head of the Clinical Service at UCLH, the expert has devoted great efforts to the care of patients with cancer and to reduce the cardiac side effects that may result from aggressive treatments such as chemotherapy, radiotherapy and surgery. Thanks to his extensive experience in this field, he is a consultant specialist in the Long-Term Follow-Up Unit, created to monitor the evolution of people who have survived tumors.

Dr. Ghosh's research has been at the forefront of clinical innovation throughout his career. His PhD, for example, was defended at the Imperial College of London and subsequently presented to the British Parliament. This merit is only plausible for studies that make unquestionable contributions to society and science. The thesis has also received numerous national and international awards. It has also been endorsed by presentations at various congresses around the world.

The famous cardiologist is also a specialist in advanced Diagnostic Imaging techniques, using state-of-the-art tools: Magnetic Resonance Imaging and Echocardiography. He also has a broad academic vocation that led him to complete a Master's degree in Medical Education, obtaining accreditations from the Royal College of Physicians of the United Kingdom and University College London.

Dr. Ghosh is also the Director of the Foundation Program at St. Bartholomew's Hospital and holds various positions in local and international societies, such as the American College of Cardiology.



## Dr. Arjun Ghosh

---

- Specialist in Cardio-Oncology and Advanced Cardiac Imaging
- Head of Clinical Service University College London Hospital (UCLH)
- Consultant Cardiologist at the Barts Heart Center
- Director of the St Bartholomew's Hospital Foundation Program
- Doctorate in Cardiology at Imperial College London
- Master's Degree in Medical Education from the Royal College of Physicians of the United Kingdom and University College London
- Member of:
  - American College of Cardiology
  - British Cardiovascular Society
  - Royal Society of Medicine
  - International Society of Cardio-Oncology



*Thanks to TECH, you will be able to learn with the best professionals in the world"*

## Management



### Dr. Macía Palafox, Ester

- Clinical Manager of the Cardio-Oncology Unit of the Fundación Jiménez Díaz University Hospital in Madrid.
- Degree in Medicine from the Complutense University Madrid.
- Cardiology Specialist at La Paz University Hospital in Madrid..
- TECH Master's Degree in Clinical Arrhythmology (Complutense University of Madrid).
- Fellowship in Investigative Arrhythmology (Columbia University, New York).
- Member of the Spanish Society of Cardiology. Cardio-Oncology Work Group.

## Co-Director



### Dr. García-Foncillas, Jesús

- Director of the Chair of Molecular Individualized Medicine of the Autonomous University of Madrid (UAM-Merck).
- Director of the Oncology Institute "OncoHealth".
- Director of the Oncology Department of the University Hospital "Fundación Jiménez Díaz".
- Director of the Translational Oncology Division of the Health Research Institute FJD-UAM.
- Professor of Oncology, Autonomous University of Madrid.



### Dr. Ibáñez Cabeza, Borja

- Head of the Fundación Jiménez Díaz Cardiology Research Unit.
- Director of the Clinical Research Department of the Carlos III National Center for Cardiovascular Research (CNIC).

## Coordinators

### Dr. Porta Sánchez, Andreu

- Cardiologist. Quironsalud University Hospital, Madrid Carlos III National Center for Cardiovascular Research (CNIC)

### Dr. Gómez Rubín, María Carmen

- Cardiology Service at the Ruber Juan Bravo Hospital Complex Quironsalud, Madrid

## Professors

### Dr. Casado Álvarez, Raquel

- Cardiology Department, Quironsalud University Hospital, Madrid

### Dr. Montañés, Óscar Salvador

- Cardiology Department at the Quironsalud University Hospital Madrid

### Dr. Vega Primo, Alejandro

- Cardiology Department at the Ruber Juan Bravo Hospital Complex Quironsalud, Madrid

05

# Structure and Content

The structure of the contents has been designed by a team of professionals from the best hospitals and universities in Spain, aware of the relevance of current training to intervene in the diagnosis and treatment of cardiological problems in oncology patients through the use of Oncological Cardiology, and committed to quality teaching through new educational technologies.







“

*Train with renowned professionals, who will provide you with their knowledge and experience in Cardio-Oncology”.*

## Module 1. Arrhythmias and Cardiotoxicity

- 1.1. Incidence and Pathophysiology of Cardiac Arrhythmias Related to Oncologic Treatments.
- 1.2. QT Interval Prolongation: Causative Drugs and Associated Risk Factors.
- 1.3. QT Interval Prolongation: Diagnostic Criteria and Risk Stratification of Ventricular Arrhythmias.
- 1.4. QT Interval Prolongation: Prevention Strategies and Implications on the Continuity of Specific Treatment.
- 1.5. Atrial Fibrillation: Incidence, Risk Factors, and Clinical Presentation.
- 1.6. Atrial Fibrillation: Oncologic Treatments Involved in its Development.
- 1.7. Atrial Fibrillation: Anticoagulant Treatment.
  - 1.7.1. Thrombotic and Hemorrhagic Risk Assessment.
  - 1.7.2. Anticoagulation with Heparin.
  - 1.7.3. Anticoagulation with Dicoumarinics.
  - 1.7.4. Direct-Acting Anticoagulants.
- 1.8. Treatment Strategy in Atrial Fibrillation: Rate Control versus Rhythm Control.
- 1.9. Bradyarrhythmias Associated with Oncologic Treatment.
  - 1.9.1. Sinus Dysfunction.
  - 1.9.2. Atrioventricular Block.
  - 1.9.3. Therapeutic Implications.





## Module 2. Valvular and Pericardial Involvement Related to Cardiotoxicity

- 2.1. Oncologic Treatments that May Lead to the Development of Valvulopathies.
  - 2.1.1. Pharmacological Treatments.
  - 2.1.2. Thoracic Radiotherapy.
- 2.2. Management of Chronic Valvular Patients Receiving Oncologic Treatment.
  - 2.2.1. Mitral Valve Disease.
  - 2.2.2. Aortic Valve Disease.
  - 2.2.3. Valve Prosthesis.
- 2.3. Pharmacological Treatments that May Lead to the Development of Pericardial Disease.
  - 2.3.1. Incidence and Physiopathology.
  - 2.3.2. Clinical Presentation and Diagnosis.
  - 2.3.3. Approach to Pericardial Effusion Secondary to Treatment.
- 2.4. Thoracic Radiotherapy and Pericardial Disease.
  - 2.4.1. Acute Pericarditis.
  - 2.4.2. Chronic Pericarditis.
- 2.5. Assessing Patients with Metastatic Pericardial Involvement.

“

*A unique, key, and decisive training experience to boost your professional development”*

06

# Methodology

This training program provides you with a different way of learning. Our methodology uses a cyclical learning approach: *Re-learning*.

This teaching system is used in the most prestigious medical schools in the world, and major publications such as the *New England Journal of Medicine* have considered it to be one of the most effective.



“

*Discover Re-learning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*



## At TECH we use the Case Method

In a given situation, what would you do? Throughout the program, you will be presented with multiple simulated clinical cases based on real patients, where you will have to investigate, establish hypotheses and, finally, resolve the situation. There is abundant scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

*With TECH you can experience a way of learning that is shaking the foundations of traditional universities around the world.*



According to Dr. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching potential or because of its uniqueness or rarity. It is essential that the case is based on current professional life, trying to recreate the real conditions in professional medical practice.

“

*Did you know that this method was developed in 1912 at Harvard for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method”*

The effectiveness of the method is justified by four fundamental achievements:

1. Students who follow this method not only grasp concepts, but also develop their mental capacity by evaluating real situations and applying their knowledge.
2. The learning process has a clear focus on practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.



## Re-Learning Methodology

At TECH we enhance the Harvard case method with the best 100% online teaching methodology available: Re-learning.

Our University is the first in the world to combine the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, which represent a real revolution with respect to simply studying and analyzing cases.

*The physician will learn through real cases and by solving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.*





At the forefront of world teaching, the Re-learning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best Spanish-speaking online university (Columbia University).

With this methodology we have trained more than 250,000 physicians with unprecedented success, in all clinical specialties regardless of the surgical load. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

*Re-learning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.*

In our program, learning is not a linear process, but rather a spiral (we learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

The overall score obtained by our learning system is 8.01, according to the highest international standards.



In this program you will have access to the best educational material, prepared with you in mind:



#### Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.



#### Latest Techniques and Procedures on Video

We introduce you to the latest techniques, to the latest educational advances, to the forefront of current medical techniques. All this, in first person, with the maximum rigor, explained and detailed for your assimilation and understanding. And best of all, you can watch them as many times as you want.



#### Interactive Summaries

We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This unique multimedia content presentation training system was awarded by Microsoft as a "European Success Story".



#### Additional Reading

Recent articles, consensus documents, international guides. in our virtual library you will have access to everything you need to complete your training.





**Postgraduate Diploma-Led Case Studies and Case Analysis**

Effective learning ought to be contextual. Therefore, we will present you with real case developments in which the Postgraduate holder will guide you to approach and solve the different situations: a clear and direct way to reach the highest degree of understanding.



**Testing & Re-testing**

We periodically evaluate and re-evaluate your knowledge throughout the program, through assessment and self-assessment activities and exercises: so that you can see how you are achieving your goals.



**Classes**

There is scientific evidence suggesting that observing third-party experts can be useful.

Learning from an expert strengthens knowledge and memory, and generates confidence in our future difficult decisions.



**Quick Action Guides**

We offer you the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help you progress in your learning.





# 06 Certificate

The **Postgraduate Certificate in Arrhythmias, Valvulopathies and Pericardial involvement in Cardiotoxicity in the Oncological Patient** guarantees you, in addition to the most rigorous and up to date training, the access to a Postgraduate Certificate issued by TECH Global University.



“

*Include in their training a Postgraduate Certificate in Arrhythmias, Valvulopathies and Pericardial involvement in Cardiotoxicity in the Oncologic Patient: a highly qualified added value for any medical professional”*

This program will allow you to obtain your **Postgraduate Certificate in Arrhythmias, alvulopathies and pericardial Involvement in Cardiotoxicity in the Oncologic Patient** endorsed by **TECH Global University**, the world's largest online university.

**TECH Global University** is an official European University publicly recognized by the Government of Andorra ([official bulletin](#)). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

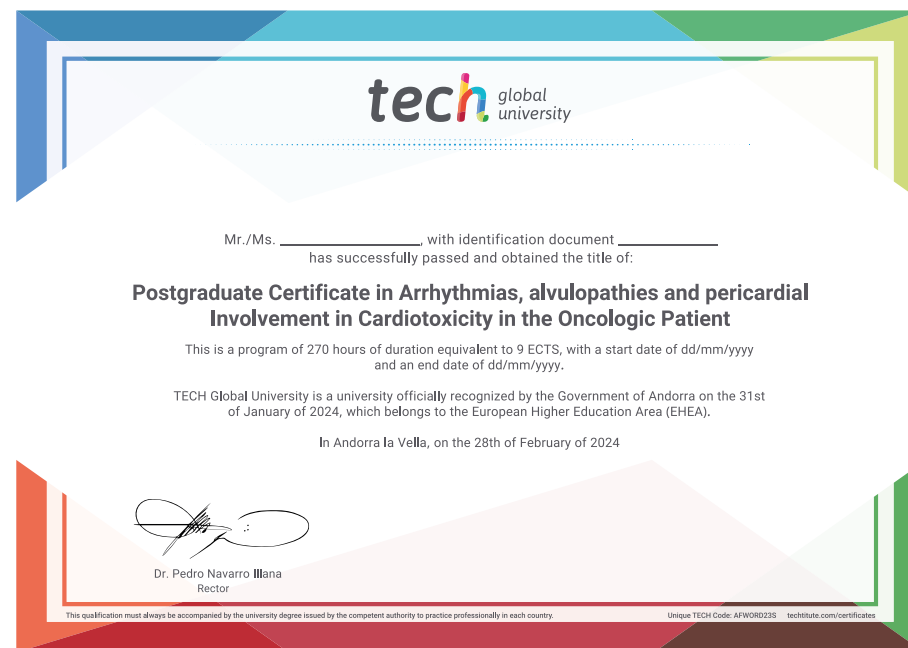
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Arrhythmias, alvulopathies and pericardial Involvement in Cardiotoxicity in the Oncologic Patient**

Modality: **online**

Duration: **8 weeks**

Accreditation: **9 ECTS**



health future  
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education information tutors  
guarantee accreditation teaching  
institutions technology learning  
community commitment  
personalized service innovation  
knowledge preservation  
online teaching  
development languages  
virtual classroom



## Postgraduate Certificate Arrhythmias, Valvulopathies and pericardial Involvement in Cardiotoxicity in the Oncologic Patient

- » Modality: online
- » Duration: 8 weeks
- » Certificate: TECH Global University
- » Credits: 9 ECTS
- » Schedule: at your own pace
- » Exams: online



# Postgraduate Certificate

Arrhythmias, Valvulopathies  
and Pericardial involvement  
in Cardiotoxicity in the  
Oncologic Patient