

# Postgraduate Diploma

## The Comprehensive Management of Cardiotoxicity in the Oncologic Patient





## Postgraduate Diploma

### The Comprehensive Management of Cardiotoxicity in the Oncology Patient

Course Modality: **Online**

Duration: **6 months.**

Certificate: **TECH Technological University**

**17 ECTS Credits**

Teaching Hours: **425 hours.**

Website: [www.techtitute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-comprehensive-management-cardiotoxicity-oncology-patient](http://www.techtitute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-comprehensive-management-cardiotoxicity-oncology-patient)

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01

# Introduction

Cardiotoxicity produced by the oncologic process and its treatment is an important factor to be taken into account in the integral approach to the oncologic patient. Adequate follow-up is essential in the control of the disease process in order to try to reduce the risks of the different therapeutic options and to guarantee the patient's maximum wellbeing. This program is oriented towards facilitating the professional's update in a practical way and with the best educational technology.





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*This training will provide you with a sense of security in medical practice, which will help you grow personally and professionally”*

The specialist plays a fundamental role in the approach to the oncological process, and his diagnostic and therapeutic orientation is key. But equally, there are components of the disease process that require special monitoring to avoid risks and facilitate the greatest possible wellbeing for the patient.

Cardiotoxicity is routinely present as one of the side effects of many of the treatments for the oncology patient. The management of the medication, as well as of other therapeutic options, is fundamental in the adjustment of the appropriate dosage for medical practice, and its undesired effects must be managed with the utmost rigor. Keeping up to date with advances in cardiotoxicity in oncology patients is a key factor for doctors in their daily clinical practice.

This program is designed to facilitate the specialist's updating process, so that he/she can include in the clinical practice of their patients all the innovations and the latest knowledge about oncological therapeutics and its complications.

The **Postgraduate Diploma** contains the most complete and up to date scientific program on the market. The most important features of the program include:

- ♦ Development of case studies presented by experts in The Comprehensive Management of Cardiotoxicity in the Oncologic Patient. The graphic, schematic, and eminently practical contents with which they are created provide scientific and practical information on the disciplines that are essential for professional practice.
- ♦ New developments in cardiotoxicity of oncologic etiology.
- ♦ It contains practical exercises where the self-evaluation process can be carried out to improve learning.
- ♦ With special emphasis on innovative methodologies in cardiotoxicity.
- ♦ All of this will be complemented by theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments.
- ♦ Content that is accessible from any fixed or portable device with an Internet connection.



*Update your knowledge with the Postgraduate Diploma program in The Comprehensive Management of Cardiotoxicity in the Oncologic Patient"*

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*This postgraduate diploma may be the best investment you can make in the selection of a refresher program for two reasons: in addition to updating your knowledge in The Comprehensive Management of Cardiotoxicity in the Oncologic Patient, you will obtain an Postgraduate Diploma from TECH Technological University"*

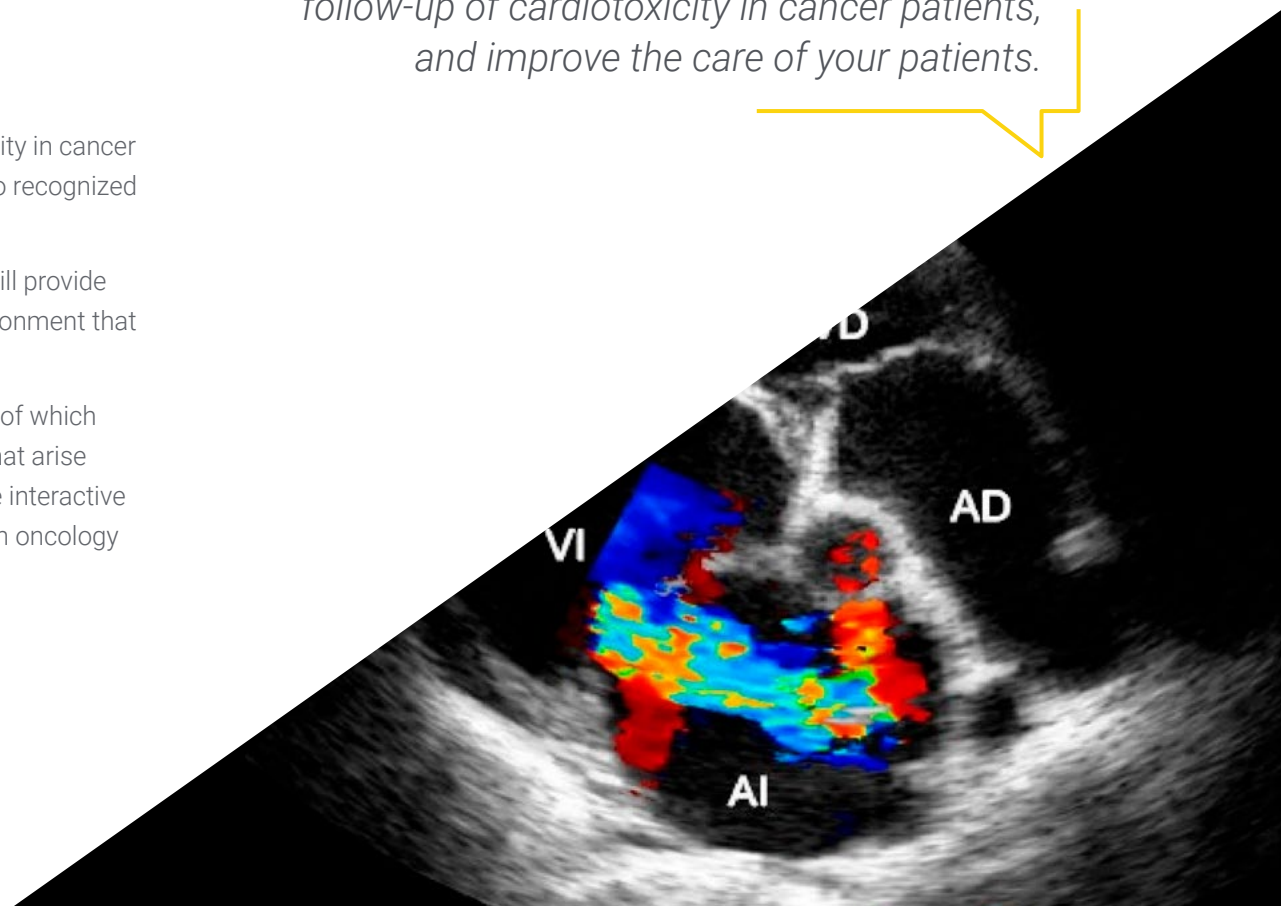
Its teaching staff includes professionals belonging to the field of cardiotoxicity in cancer patients, who bring to this training the experience of their work, in addition to recognized specialists belonging to prestigious reference societies and universities.

The multimedia content developed with the latest educational technology will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersive training program to train in real situations.

The design of this program is based on Problem-Based Learning, by means of which the student must try to solve the different professional practice situations that arise throughout the course. For this, the student will be assisted by an innovative interactive video system developed by recognized experts in the field of cardiotoxicity in oncology patients, with extensive teaching experience.

*Increase your decision-making confidence by updating your knowledge through this postgraduate course.*

*Make the most of this opportunity to learn about the latest advances in the approach and follow-up of cardiotoxicity in cancer patients, and improve the care of your patients.*



02

# Objectives

The Postgraduate Diploma in The Comprehensive Management of Cardiotoxicity in the Oncologic Patient is oriented to facilitate the updating of the physician responsible for the treatment and follow-up of the oncologic patient, in a simple and practical way, through the latest educational technology.







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*This Postgraduate Diploma is designed for you to update your knowledge in The Comprehensive Management of Cardiotoxicity in the Oncologic Patient, using the latest educational technology, to contribute with quality and safety to decision making"*



## General Objective

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- To update the knowledge of the specialist Cardiologist, Oncologist and Hematologist 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.
- To encourage professional stimulation through continuous education and research.





## Specific Objectives

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- ♦ Be able to perform a comprehensive risk assessment of patients undergoing oncologic treatment.
- ♦ Describe the monitoring required by patients during treatment with cardiotoxic therapies.
- ♦ Identify biomarkers as a method used to detect cardiotoxicity early, especially troponins and natriuretic peptides.
- ♦ Know the oncological treatments associated with the appearance of cerebral vascular disease.
- ♦ Learn the relationship of some oncological treatments with the development of pulmonary hypertension.
- ♦ Define strategies to identify and control risk factors to limit the development of cardiotoxicity related to oncologic drugs.
- ♦ Know the measures capable of limiting cardiac toxicity due to anthracyclines.
- ♦ Know the measures capable of limiting cardiac toxicity due to trastuzumab-type monoclonal antibodies.
- ♦ Know the measures capable of limiting cardiac toxicity related to cellular kinase inhibitors.
- ♦ Learn strategies to limit the risk of toxicity related to radiotherapy.
- ♦ Analyze the role of beta-blockers in cardioprotection.
- ♦ Analyze the role of angiotensin receptor inhibitors and antagonists in cardioprotection.
- ♦ Identify other pharmacological treatments with a possible cardioprotective effect.
- ♦ Become familiar with the monitoring required for patients with cardiac toxicity or at high risk of developing it.
- ♦ Explain the long-term follow-up of the patient who has received thoracic radiotherapy.
- ♦ Understand the occurrence and determine the clinical management of patients with established oncologic disease who present with an acute ischemic event.
- ♦ Understand the onset and determine the clinical management of the pediatric patient requiring potentially cardiotoxic oncologic treatment.
- ♦ Understand the onset and determine the clinical management of the geriatric patient requiring oncologic treatment.
- ♦ Get up to date on anticoagulant and antiplatelet therapy in oncology patients.
- ♦ Broaden knowledge in relation to oncology patients who exhibit arrhythmias and require implantable devices (pacemakers, defibrillators).
- ♦ Recognize the importance of research in the context of cardiotoxicity.
- ♦ Become familiar with current basic lines of research and future perspectives.
- ♦ Become familiar with current clinical lines of research and future perspectives.

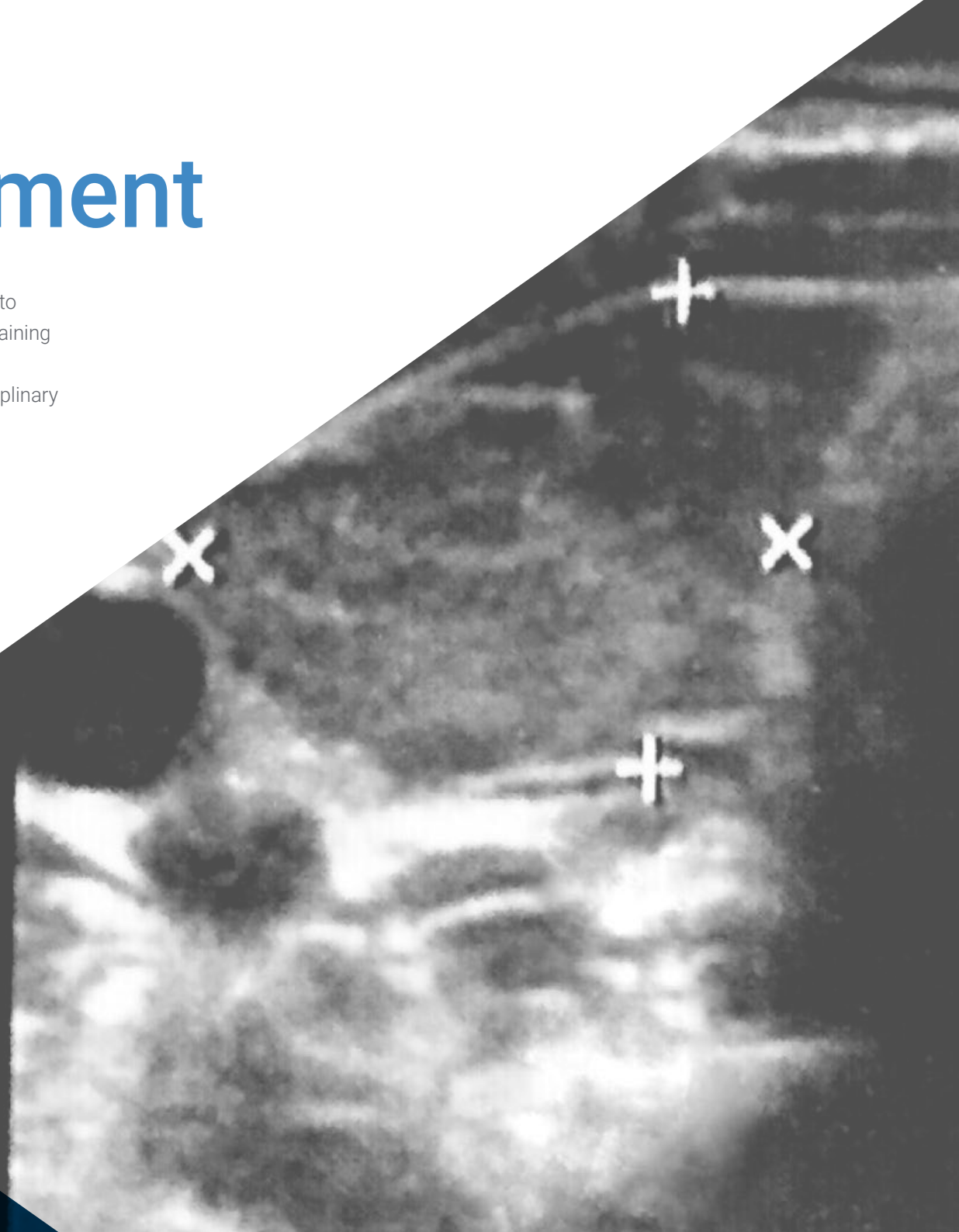


*Make the most of the opportunity and take the step to get up to date on the latest developments in **The Comprehensive Management of Cardiotoxicity in the Oncologic Patient**"*

03

# Course Management

The program includes in its teaching staff reference specialists in the approach to cardiovascular diseases that can present the cancer patient, who bring to this training the experience of their work. In addition, other specialists of recognized prestige participate in its design and elaboration, completing the program in an interdisciplinary manner.





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*Learn from leading professionals the latest advances in the treatment and monitoring of cardiotoxicity in cancer patients”*

## 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

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- 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

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

## Management



### 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.



## Coordinators



### 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).



### 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.

**Alonso, Cristina de la Fuente**

- ♦ Department of Radiation Oncology, University Hospital Puerta de Hierro Majadahonda, Madrid.

**Díaz Peláez, Elena**

- ♦ Cardiology Service, University Complex of Salamanca. Institute of Biomedical Research of Salamanca (IBSAL).

**Dr. Eiros Bachiller, María del Rocío**

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**Galán Arriola, Carlos**

- ♦ Carlos III National Center for Cardiovascular Research (CNIC).

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**Dr. Hernández Martos, Ángel Víctor**

- ♦ Cardiology Service of the University Health Complex of Salamanca.

**Dr. Laffond, Ana Elvira**

- ♦ Cardiology Service of the University Health Complex of Salamanca.

**Dr. Lobo González, Manuel**

- ♦ Cardiology Department at Ruber Juan Bravo Hospital Complex Quironsalud, Madrid. Carlos III National Center for Cardiovascular Research (CNIC).



**Dr. Martín García, Agustín Carlos**

- ♦ Cardiology Service, University Complex of Salamanca. Institute of Biomedical Research of Salamanca (IBSAL).

**Dr. Macías Álvarez, Laura**

- ♦ Cardiology Service of the University Health Complex of Salamanca.

**Dr. Mitroi, Cristina**

- ♦ Cardiology Department, University Hospital Puerta de Hierro Majadahonda, Madrid.

**Navarro Matilla, Belén**

- ♦ Hematology Department, University Hospital Puerta de Hierro Majadahonda, Madrid.

**Nuñez García, Beatriz**

- ♦ Medical Oncology Service, University Hospital Puerta de Hierro Majadahonda, Madrid

**Dr. Sánchez Fernández, Pedro Luis**

- ♦ Chief of Cardiology Service, University Health Care Complex of Salamanca.

**Dr. Sánchez Pablo, Clara**

- ♦ Cardiology Service of the University Health Complex of Salamanca.

**Dr. Valbuena López, Silvia Cayetana**

- ♦ Cardiology Department, University Hospital La Paz.

04

# Structure and Content

The structure of the contents has been designed by a team of professionals from the best hospitals and universities in the country, aware of the relevance of current training to be able to intervene in the toxic effects of oncological therapies at the cardiac level, and committed to quality teaching through new educational technologies.





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*The Postgraduate Diploma in The Comprehensive Management of Cardiotoxicity in the Oncologic Patient, contains the most complete and up to date scientific program on the market"*

### Module 1. Early Detection of Cardiotoxicity

- 1.1. Circulating Biomarkers: Troponins.
- 1.2. Circulating Biomarkers: Natriuretic Peptides.
- 1.3. Other Circulating Biomarkers for Early Detection of Cardiotoxicity.
- 1.4. Echocardiography.
- 1.5. Cardiovascular Magnetic Resonance Imaging.
- 1.6. Computerised Axial Tomography.

### Module 2. Therapies with Cardioprotective Effects

- 2.1. Identification and Control of Cardiotoxicity Risk.
  - 2.1.1. Treatment of Traditional Risk Factors.
  - 2.1.2. Treatment of Comorbidities.
- 2.2. Strategies to Limit Oncologic Drug-Related Cardiotoxicity.
  - 2.2.1. Anthracyclines.
  - 2.2.2. Monoclonal Antibodies. HER2 Inhibitors.
  - 2.2.3. Cell Kinase Inhibitors.
- 2.3. Strategies to Limit Cardiotoxicity Related to Thoracic Radiotherapy.
- 2.4. Role of Beta-Blockers in Cardioprotection.
- 2.5. Role of Angiotensin Receptor Inhibitors and Antagonists in Cardioprotection.
- 2.6. Other Interventions with a Possible Cardioprotective Effect.

### Module 3. Long-Term Monitoring Programs for Patients Who Have Received Cardiotoxic Therapies

- 3.1. Risk of Late Cardiotoxicity Secondary to Oncological Drugs.
- 3.2. Monitoring Protocol for the Detection of Late Cardiotoxicity.
- 3.3. Risk of Late Cardiotoxicity Secondary to Thoracic Radiotherapy.
- 3.4. Monitoring Protocol for Detecting Late Radiation-Induced Toxicity.



#### **Module 4.** The Future of Cardio-Oncology: Most Relevant Lines of Research

- 4.1. Basic Research.
- 4.2. Clinical Research.
- 4.3. Gaps in Evidence and Future Research.

#### **Module 5.** Multidisciplinary Cardio-Oncology Units

- 5.1. Objectives of the Cardio-Oncology Units.
  - 5.1.1. Care Objectives.
  - 5.1.2. Research Objectives.
  - 5.1.3. Teaching and Dissemination Objectives.
- 5.2. Components of Cardio-Oncology Equipment.
  - 5.2.1. Coordination between the In-Hospital and Out-of-Hospital Environment.
  - 5.2.2. Coordination between Different Healthcare Professionals.

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

therapy

diversity of modern treatment modalities  
ive set of treatment for each patient  
toxic, has no contraindications to re  
as high compared with standard

05

# Methodology

This training 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.





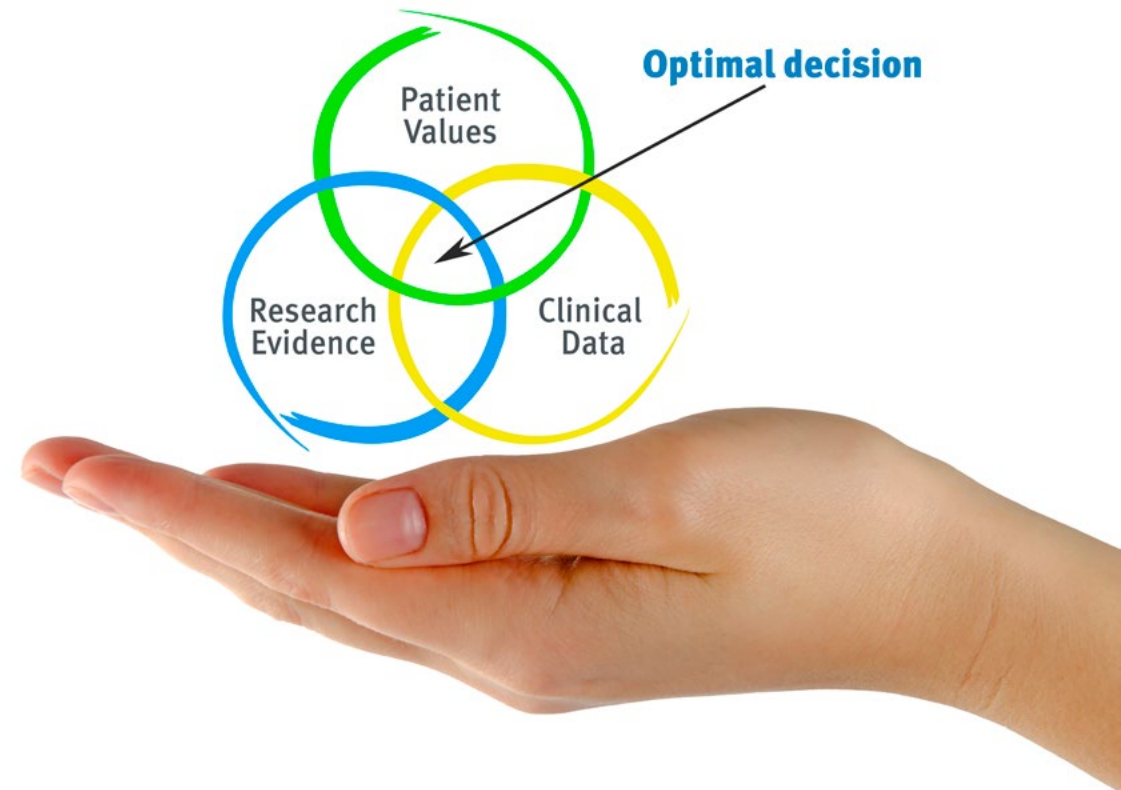
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*Discover Re-learning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*

## At TECH we use the Case Method

In a given situation, what would you do? Throughout the months of the training course, you will be presented with multiple simulated cases based on real situations in which you will have to investigate, establish hypotheses and finally resolve. 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. Gervas, 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 the physician's professional practice.

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*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 training, 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

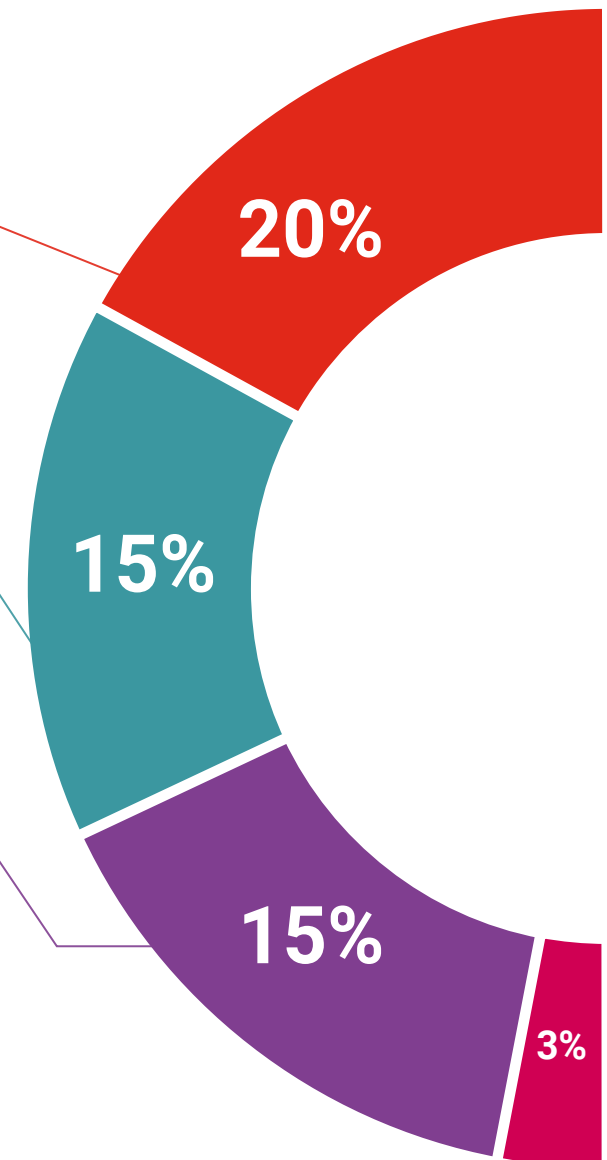
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

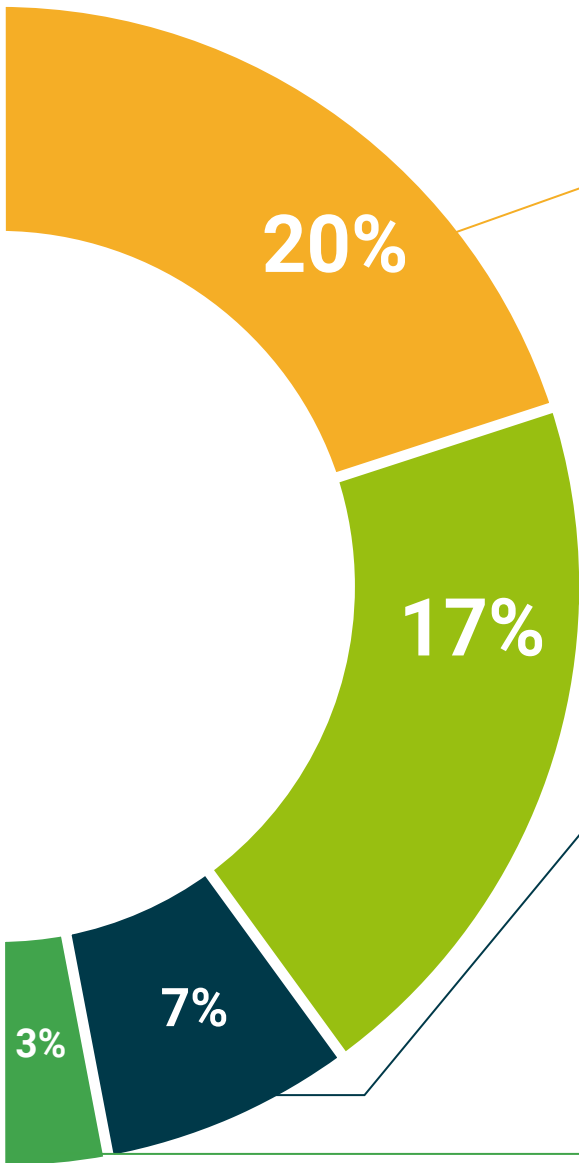
This unique training system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



#### 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 Diploma will guide you through focusing on and solving the different situations: a clear and direct way to achieve 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 Postgraduate Diplomas can be useful.

Learning from an Postgraduate Diploma 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 Diploma in The Comprehensive Management of Cardiotoxicity in the Oncologic Patient guarantees you, in addition to the most rigorous and up to date training, access to a Postgraduate Diploma certificate issued by TECH Technological University.





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*Successfully complete this training and receive your university degree without travel or laborious paperwork”*

This **Postgraduate Diploma in The Comprehensive Management of Cardiotoxicity in the Oncologic Patient** contains the most complete and up to date scientific program on the market.

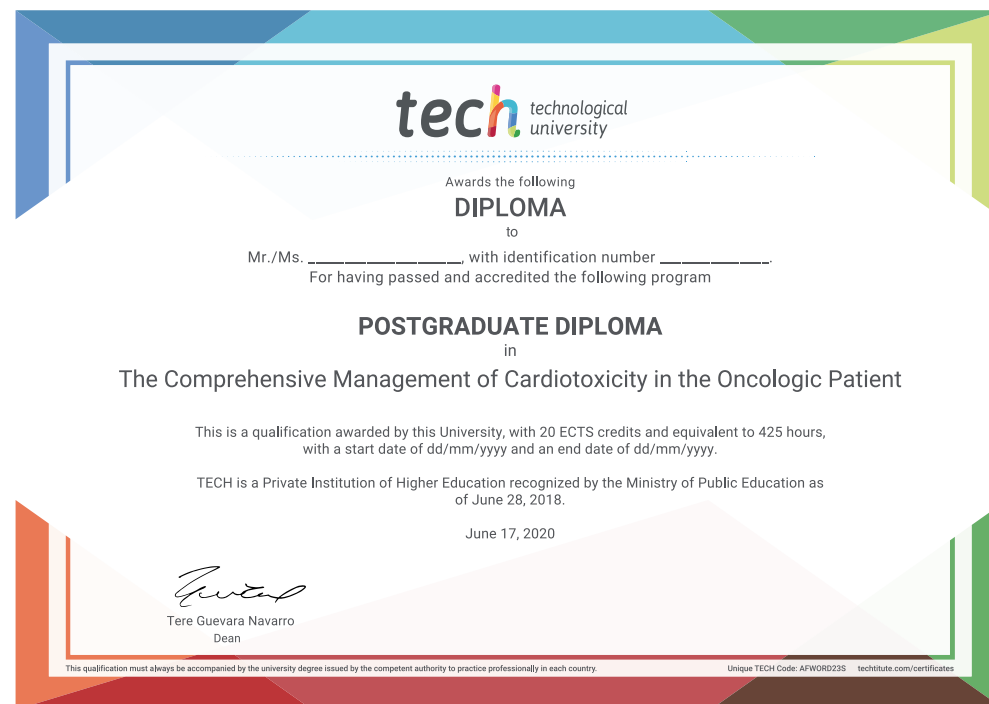
After the student has passed the evaluations, he/she will receive by mail with acknowledgment of receipt their corresponding **Postgraduate Diploma Certificate** issued by **TECH Technological University**.

The certificate issued by **TECH Technological University** will specify the qualification obtained through the postgraduate Diploma, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Postgraduate diploma in the Comprehensive Management of Cardiotoxicity in Oncology Patients.**

ECTS: **17**

Official Number of Hours: **425**



\*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.

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



## Postgraduate Diploma

Comprehensive  
Management of  
Cardiotoxicity in the  
Oncologic Patient

Course Modality: Online

Duration: 6 months.

Certificate: TECH Technological University

17 ECTS Credits

Teaching Hours: 425 hours.

# Postgraduate Diploma

The Comprehensive Management of  
Cardiotoxicity in the Oncologic Patient