Postgraduate Diploma
Update on Diagnostic and Interventional Nephrology

tech global university

tech global university

Postgraduate Diploma

Update on Diagnostic and Interventional Nephrology

- Modality:**Online**
- Duration: **6 months.**
- Certificate: **TECH Global University**
- Credits: **18 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Website: **https://www.techtitute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-update-diagnostic-interventional-nephrology**

Index

01 Introduction p. 4

02 Objectives p. 8

03 Course Management p. 12

04 Structure and Content p. 16

05 Methodology p. 20

06 Certificate p. 28

01

Introduction

Thanks to technological development, nephrology has undergone a remarkable evolution in recent years. The advances in this field have facilitated the incorporation of advanced diagnostic and minimally invasive intervention techniques, leading to better detection and precise treatment of renal diseases. Consequently, identifying these advances is essential for physicians who wish to optimize their professional update. Because of this, TECH has designed this program, which provides the specialist with in-depth knowledge of the latest diagnostic strategies used in this area or the methods of catheter tunneling for hemodialysis. Furthermore, its 100% online modality will allow the student to study from any mobile device connected to the network.

With TECH, you will learn about the state-of-the-art ultrasound techniques that contribute to the detection of various types of renal pathologies".

The development of interventional techniques used in nephrology has had a significant impact on the surgical approach to renal diseases. In this regard, the adoption of minimally invasive methods has made it possible to reduce the risks of operations, reduce hospitalization times and improve patient recovery. Therefore, identifying and incorporating these advances in daily practice is crucial for any specialist who wishes to avoid being left behind with respect to the evolution of their sector.

For this reason, TECH has focused on developing this Postgraduate Diploma, through which the student will delve into the up to date diagnostic methods and surgical strategies used in Nephrology. Throughout this educational experience, students will learn about the use of the most modern ultrasound devices or the recent relative and absolute contraindications of Percutaneous Renal Biopsy in different clinical contexts. Likewise, you will delve into the sophisticated techniques of temporary catheter placement for hemodialysis.

This program is offered in a 100% online format, which allows specialists to adapt their learning to their daily schedules and responsibilities without time restrictions. In addition, the program's approach includes the implementation of *Relearning* learning methodology, which provides physicians with a solid and lasting understanding of key concepts. Through this technique, a continuous updating process is promoted that consolidates knowledge and improves clinical practice in the long term.

This **Postgraduate Postgraduate Diploma in Update on Diagnostic and Interventional Nephrology** contains the most complete and up-to-date scientific program on the market. Its most notable features are:

- Practical cases presented by specialists in Nephrology and Internal medicine.
- The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice.
- Practical exercises where self-assessment can be used to improve learning.
- Its special emphasis on innovative methodologies
- 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

Explore the resistance indexes and their usefulness in the diagnosis of renal alterations by means of Doppler ultrasound".

The online modality presented by this Postgraduate Diploma will allow you to optimize your learning from the place and at the time you wish".

TECH offers you the best didactic tools to provide you with an enjoyable and effective professional updating experience.

Thanks to this program, you will learn the latest techniques in temporary catheter placement for hemodialysis.

The program's teaching staff includes professionals from the field who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious 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 education programmed to learn in real situations.

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the academic year For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.

02

Objectives

The objective of this program is to provide the physician with the most up-to-date knowledge regarding the precise and efficient diagnosis of renal disorders, as well as their surgical treatment. In this way, the physician will be positioned as an advanced specialist in Nephrology, benefiting from an innovative educational methodology of excellent educational quality.

Identify, throughout this program, the revolutionary techniques used to treat simple renal cysts, Polycystic Kidney Disease and Angiomyolipomas".

General Objectives

- Care for patients with chronic kidney disease and its most frequent complications.
- Care for patients with acute renal failure and its complications, as well as to understand the objective of initiating renal replacement therapy, its indications and management.
- Have an overview of Nephrology as a specialty with its different branches of knowledge and a global approach to the patient.
- Understand and learn the branches that are emerging within the specialty such as diagnostic and interventional nephrology, onconephrology, or cardionephrology.

Incorporate the latest advances in Diagnostic and Interventional Nephrology to your daily practice in only 6 months".

Specific Objectives

Module 1. Chronic Kidney Disease(CKD)

- Understand and know CKD as a systemic disease, as well as its particularities.
- Understand the most common complications in patients with CKD.
- Know the particularities of patients with CKD in different special clinical situations (indication of anticoagulation, dyslipidemia, cardiovascular risk)

Module 2. Diagnostic and Interventional Nephrology

- Know in depth the growing applications of Diagnostic and Interventional Nephrology.
- Learn in depth the indications and contraindications of renal biopsy.
- Know in depth the indications and contraindications of temporary and/or tunneled catheter placement for hemodialysis.
- Know in depth the application of structural ultrasound and renal Doppler.

Module 3. Renal Replacement Therapy

- Know the best renal replacement technique for each patient, as well as the choice of the best vascular access in each case.
- Know in depth the indications to start a hemodialysis program.
- Understand the indications for initiating a home dialysis program in the form of home hemodialysis or peritoneal dialysis.
- Understand that there are contraindications to continue a hemodialysis program and understand the need for collaboration with a palliative program to respond to patients who withdraw from a dialysis program.

03

Course Management

This TECH Postgraduate Diploma has a faculty composed of outstanding professionals in the field of Nephrology. These specialists, who are actively working in in renowned hospitals, have extensive skills in the management of renal diseases, surgical procedures and dialysis therapies. Consequently, the knowledge that the student will acquire will be aligned with the latest advances in this field in order to apply it to daily practice.

Get up to date in Diagnostic and Interventional Nephrology with leading specialists in this area".

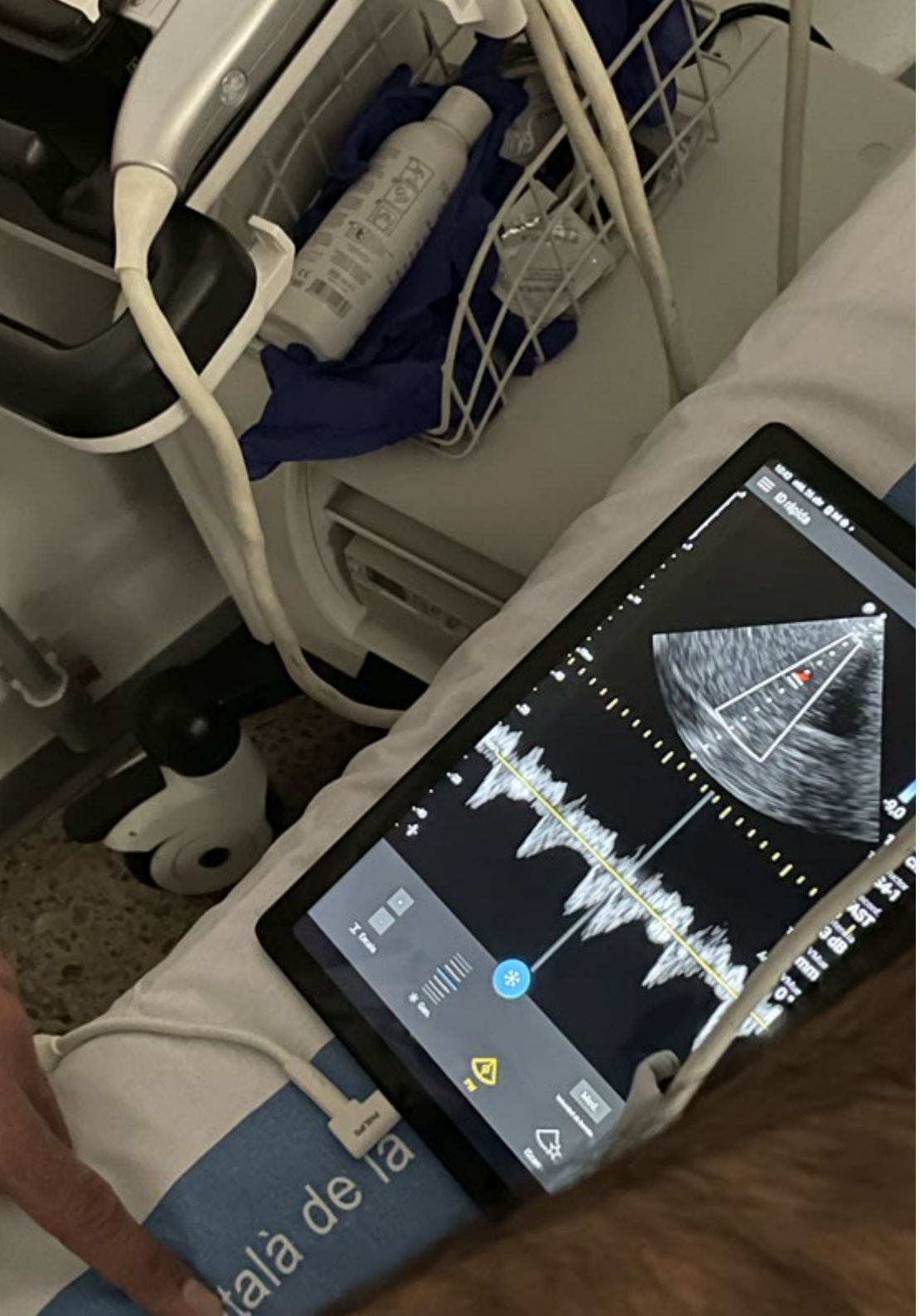
Address

Dr. Ribas Closa, Andrés

- Nephrologist at the Sant Jordi Clinic in Sant Andreu
- Nephrology Del Mar Hospital, Barcelona
- Expert in Clinical Ultrasound at the Francisco de Vitoria University.
- Master's Degree in Infectious Diseases and Antimicrobial Treatment from the CEU Cardenal Herrera University
- Degree in Medicine from the Autonomous University of Barcelona.

Dr. Angulo, Josep María

- Head of Nephrology Service at Fundació Althaia in Manresa
- Head of Nephrology Service at the Hospital de Palamós
- Professor of Nephrology at the International University of Catalonia
- Former President of the Catalan Societies of Nephrology and Arterial Hypertension
- Specialization in Nephrology by the Hospital de Bellvitge
- Postgraduate degree in Basic Nephrology from the University of Minnesota.
- Degree in Medicine and Surgery from the University of Barcelona
- Member of: Spanish Society of Nephrology and Arterial Hypertension



Professors

Dr. Galcerán, Isabel

- Specialist in Nephrology at Del Mar Hospital of Barcelona
- Bachelor in Medicine and Surgery from the Autonomous University of Barcelona

Dr. Outón, Sara

- Nephrologist at Consorci Sanitari Alt Penedès-Garraf
- Pediatric Nephrologist in the University of California
- Degree in Medicine from the University of Santiago de Compostela.

Dr. Pascual Sánchez, Sergio

- Specialized in Nephrology at Consorci Sanitari Alt Penedès-Garraf
- Psychiatric Monitor at CPB (Serveis Salut Mental)
- Master's Degree in Neurobiology and Behavior from the Instituto Superior de Estudios Psicológicos (Higher Institute of Psychological Studies)
- Degree in Medicine from the Autonomous University of Barcelona.
- Degree in Psychology from the Autonomous University of Barcelona.

04

Structure and Content

This qualification provides a comprehensive syllabus covering relevant topics in the field of nephrological diagnosis. Up to date content will be presented, covering key aspects of Chronic Kidney Disease, Percutaneous Renal Biopsy or the latest imaging techniques in Nephrology and Hemodialysis. To ensure the best learning experience, the program is delivered 100% online, allowing physicians to update their knowledge from wherever and whenever they wish.

With the Relearning method, you will avoid spending long hours studying and will be able to focus on the most important concepts of the syllabus in an efficient way".

Module 1. Chronic Kidney Disease(CKD)

1.1 Epidemiology and diagnosis of CKD
- 1.1.1. Epidemiology of CKD in our setting
- 1.1.2. *Global Burden of Disease*
- 1.1.3. Diagnosis. KDIGO 2021-2022 Guidelines
- 1.1.4. Chronic Kidney Disease vs. Renal Aging

1.2 Risk Factors
- 1.2.1. Non-modifiable risk factors
- 1.2.2. Modifiable risk factors
- 1.2.3. Sarcopenia and fragility

1.3 Anemia and Chronic Kidney Disease
- 1.3.1. Definition and management of Anemia in Chronic Kidney Disease Patients
- 1.3.2. New molecules for the treatment of anemia in CKD patients
- 1.3.3. Iron Metabolism in Chronic Kidney Disease

1.4 Bone mineral metabolism in CKD
- 1.4.1. Mineral metabolism alterations: Calcium, phosphorus, Klotho, PTH, FGF-23 and Vitamin D
- 1.4.2. Primary vs. secondary hyperparathyroidism in CKD patients
- 1.4.3. New molecules for the treatment of secondary hyperparathyroidism
- 1.4.4. Osteoporosis in CKD

1.5 Cardiovascular alterations and Inflammation in CKD
- 1.5.1. Cardiac remodeling in CKD
- 1.5.2. Vascular calcification in CKD
- 1.5.3. Cardiovascular study of the patient with CKD

1.6 Hyperkalemia in Chronic Kidney Disease
- 1.6.1. Management of the patient with hyperkalemia
- 1.6.2. New drugs for the treatment of hyperkalemia

1.7 Nutrition in Chronic Kidney Disease
- 1.7.1. Health education in the patient with CKD
- 1.7.2. Malnutrition in Chronic Kidney Disease
- 1.7.3. Nutritional Supplements

1.8 Anticoagulation in the CKD Patient
- 1.8.1. Indications in Atrial Fibrillation
- 1.8.2. Antivitamin K in CKD
- 1.8.3. New oral anticoagulants in CKD

1.9 Dyslipidemia and Cardiovascular Risk in CKD
- 1.9.1. Indication for treatment with lipid-lowering drugs in CKD
- 1.9.2. Global cardiovascular risk in patients with CKD

1.10 Immunological response in CKD
- 1.10.1. COVID19 infection and vaccines
- 1.10.2. Hepatitis B and C Virus Prophylaxis

Module 2. Diagnostic and Interventional Nephrology

2.1 Renal Doppler Ultrasound and Ultrasonography
- 2.1.1. Renal morphological characteristics by ultrasound
- 2.1.2. Resistance indices. Alterations and usefulness
- 2.1.3. Renal artery Doppler ultrasound

2.2 Doppler Ultrasound and Complications of Renal Transplantation
- 2.2.1. Venous Thrombosis
- 2.2.2. Arterio-Venous Fistula
- 2.2.3. Lymphocele/urinoma

2.3 Ultrasound of Renal Masses
- 2.3.1. Simple Renal Cysts
- 2.3.2. Polycystic Kidney Disease.
- 2.3.3. Angiomyolipomas

2.4 Vascular Ultrasound
- 2.4.1. Vascular mapping for vascular access
- 2.4.2. Vascular Ultrasound in Venous Access for Hemodialysis

2.5 Percutaneous Renal Biopsy
- 2.5.1. Indications
- 2.5.2. Techniques Relative and Absolute Contraindications
- 2.5.3. Complications
- 2.5.4. Transjugular Renal Biopsy. Indications and experience

2.6 Temporary Hemodialysis Catheter Placement
- 2.6.1. Indications for temporary catheter
- 2.6.2. Types of temporary catheters for hemodialysis
- 2.6.3. Seldinger technique Technique Complications

2.7 Tunneled hemodialysis catheter
- 2.7.1. Hemodialysis catheter tunneling technique
- 2.7.2. Technique Complications
- 2.7.3. Performance and duration of vascular access

2.8 Dialysis Catheter-Related Sepsis
- 2.8.1. Removal of tunneled dialysis catheter Indications
- 2.8.2. Tunneled Catheter Removal Technique
- 2.8.3. Infections by biofilm-producing germs

2.9 New Imaging Techniques in Nephrology
- 2.9.1. Ultrasound with contrast
- 2.9.2. Utility of nuclear magnetic resonance in Nephrology

2.10 Percutaneous Peritoneal Catheter Implantation
- 2.10.1. Implantation Techniques
- 2.10.2. Post implantation care
- 2.10.3. Complications

Module 3. Renal Replacement Therapy

3.1 Choice of Technique
- 3.1.1. Renal replacement Therapy indications
- 3.1.2. Contraindications of Renal Replacement Therapy
- 3.1.3. Choice of Treatment

3.2 Hemodialysis Vascular Access
- 3.2.1. Arterio-Venous Fistula
- 3.2.2. Prosthesis
- 3.2.3. Central venous Catheter
- 3.2.4. Choice of vascular access

3.3 Hemodialysis
- 3.3.1. High-Flow Hemodialysis
- 3.3.2. On-Line Hemodialysis. Indication, technique and adequacy of the same
- 3.3.3. Extended hemodialysis and incremental hemodialysis

3.4 Peritoneal Dialysis
- 3.4.1. Techniques, indications
- 3.4.2. Contraindications of Peritoneal Dialysis. Complications
- 3.4.3. Choice of Technique: APD or CAPD

3.5 Complications in Hemodialysis
- 3.5.1. Hypotension.
- 3.5.2. Arrhythmias in Hemodialysis Patients
- 3.5.3. Allergy to the dialyzer

3.6 Complications in Peritoneal Dialysis
- 3.6.1. PD catheter migration
- 3.6.2. Peritonitis in the PD patient

3.7 Home Hemodialysis.
- 3.7.1. Indications
- 3.7.2. Technique and contraindications
- 3.7.3. Origin of home hemodialysis. Future

3.8 Fragility in the Hemodialysis Patient
- 3.8.1. Sarcopenia
- 3.8.2. Undernourishment in the Hemodialysis Patient
- 3.8.3. Physical Exercise and Hemodialysis

3.9 Anticoagulation in Hemodialysis
- 3.9.1. Antivitamin K in Hemodialysis
- 3.9.2. Contraindications
- 3.9.3. Controversies in the Hemodialysis Patient
- 3.9.4. NACOS

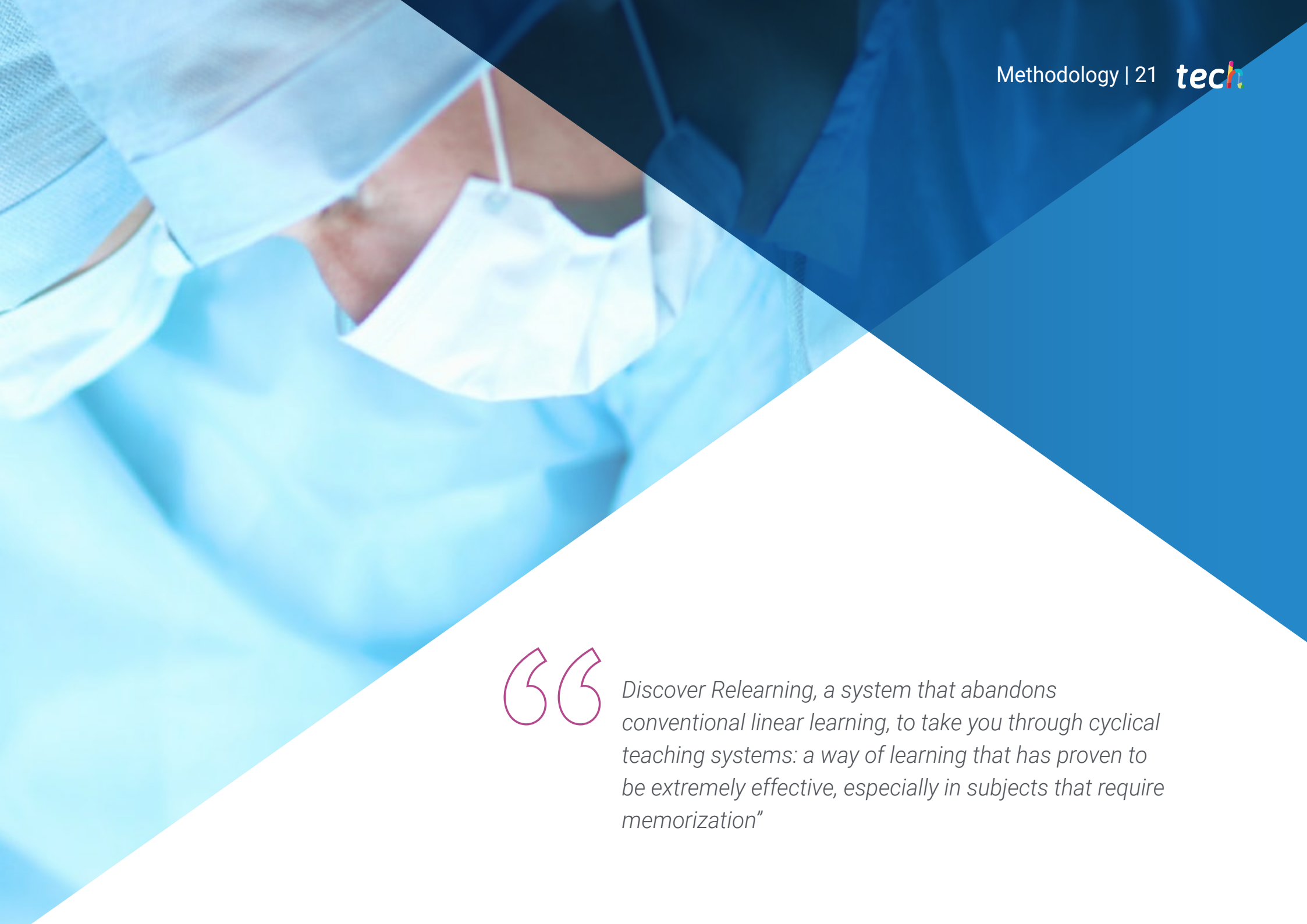
3.10 Withdrawal from the Hemodialysis Program
- 3.10.1. Indications
- 3.10.2. BORRAR
- 3.10.3. Palliative Care in Nephrology

05

Methodology

This program offers students a different way of learning. Our methodology uses a cyclical learning approach: ***Relearning***.

This teaching system is used, for example, 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 Relearning, 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

What should a professional do in a given situation? Throughout the program, students will face multiple simulated clinical cases, based on real patients, in which they will have to do research, establish hypotheses, and ultimately resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainable over time.

With TECH you will 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 power 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.

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 achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that assess real situations and the application of knowledge.
2. Learning is solidly translated into 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.

Relearning Methodology

TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

We enhance the Case Study with the best 100% online teaching method: Relearning.

Professionals will learn through real cases and by resolving 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 Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

With this methodology, more than 250,000 physicians have been prepared with unprecedented success in all clinical specialties regardless of surgical load. Our educational methodology is developed in a highly competitive environment, with a university student body with a strong socioeconomic profile and an average age of 43.5 years old.

Relearning 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 (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

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

This program offers the best educational material, prepared with professionals 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.

These contents are then adapted in audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high-quality pieces in each and every one of the materials that are made available to the student.

Surgical Techniques and Procedures on Video

TECH introduces students to the latest techniques, the latest educational advances and to the forefront of current medical techniques. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch the videos as many times as you like.

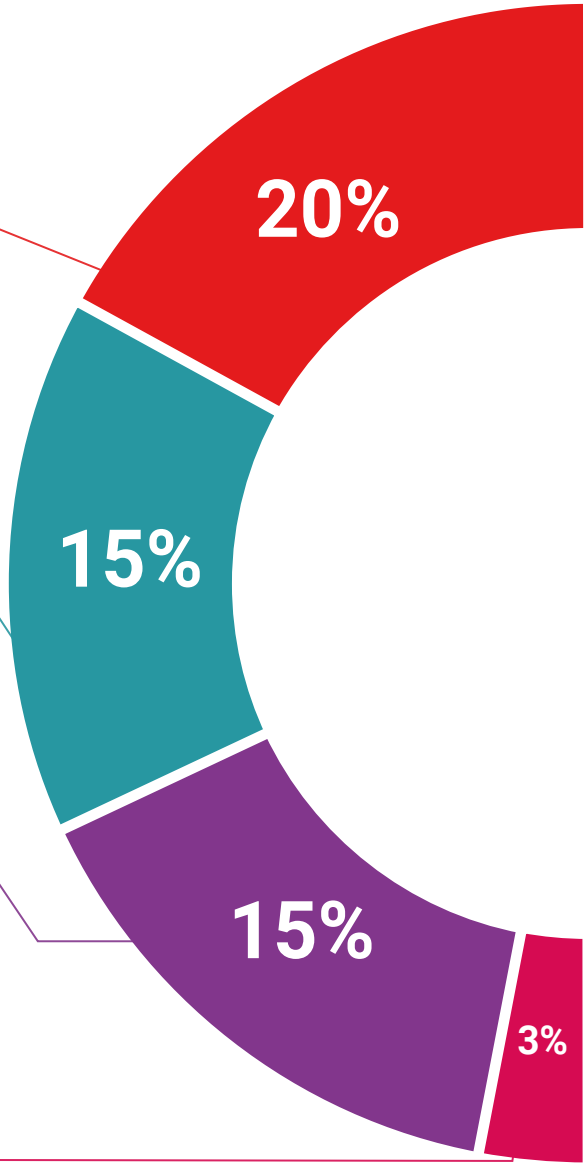
Interactive Summaries

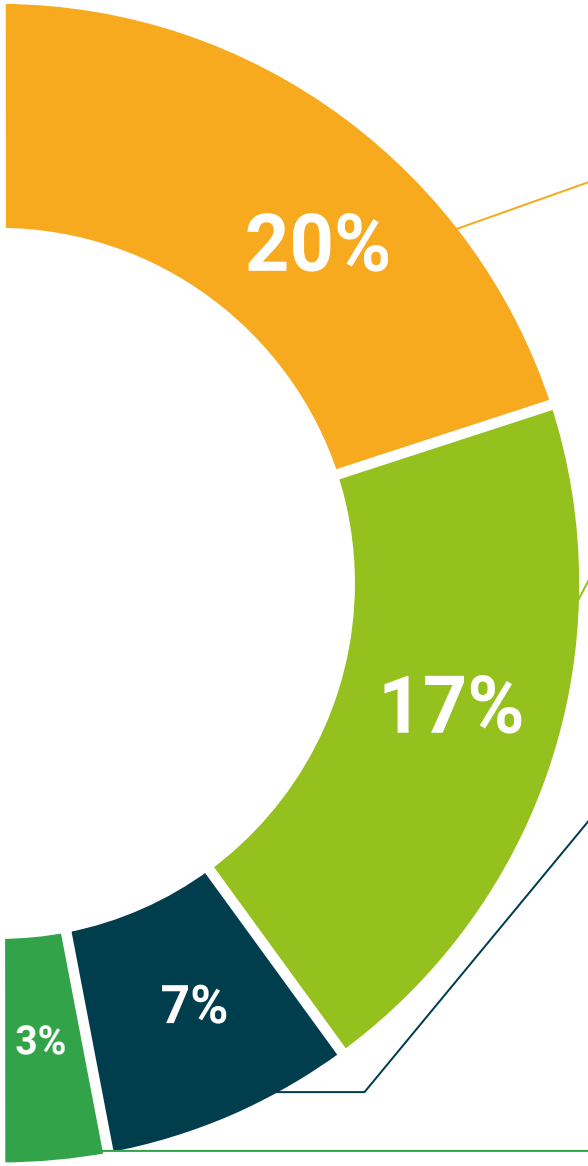
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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

Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, TECH presents real cases in which the expert will guide students, focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.

Testing & Retesting

We periodically assess and re-assess students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.

Classes

There is scientific evidence on the usefulness of learning by observing experts. The system known as Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical and effective way to help students progress in their learning.

06

Certificate

The Postgraduate Diploma in Update on Diagnostic and Interventional Nephrology guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Global University.

Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork"

This program will allow you to obtain your **Postgraduate Diploma in Update on Diagnostic and Interventional Nephrolog** 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 Diploma in Update on Diagnostic and Interventional Nephrolog**

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**

Mr./Ms. _____, with identification document _____
has successfully passed and obtained the title of:

Postgraduate Diploma in Update on Diagnostic and Interventional Nephrolog

This is a program of 450 hours of duration equivalent to 18 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
Rector

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. Unique TECH Code: AFWORD23S techtitute.com/certificates

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

tech global university

Postgraduate Diploma
Update on Diagnostic and Interventional Nephrology

- Modality:**Online**
- Duration: **6 months.**
- Certificate: **TECH Global University**
- Credits: **18 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Postgraduate Diploma
Update on Diagnostic and Interventional Nephrology

tech global university