

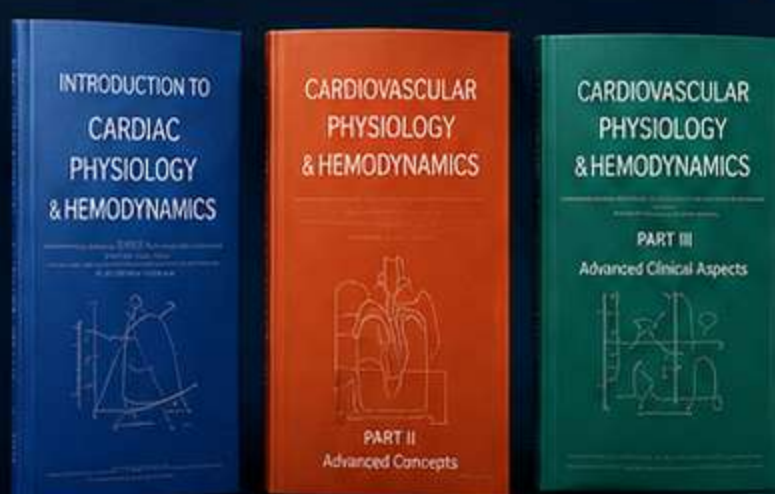


SOMECI
-Latam



Advanced Management of **HEART FAILURE**

SECOND EDITION



only on
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Presentation

The Advanced Heart Failure Management Program provides comprehensive training focused on the care of patients with advanced heart failure, from identification, stratification and medical treatment to mechanical circulatory support, long-term ventricular assist devices, heart transplantation and palliative care.

Through nine modules and interactive activities, the program seeks to strengthen clinical reasoning, hemodynamic interpretation, complex decision-making and multidisciplinary teamwork in high-complexity scenarios.



OBJECTIVES

FEBRUARY 2027

01.

Understand the clinical foundations of advanced heart failure, its classification, stratification tools and selection criteria for destination therapy, heart transplantation, long-term ventricular assist devices or palliative care.

04.

Master the clinical and technological foundations of long-term ventricular assist devices, including selection, perioperative management and early follow-up.

02.

Optimize pharmacologic and hemodynamic management of advanced patients, emphasizing rational use of inotropes, neurohormonal therapies and diuretics.

05.

Understand the comprehensive heart transplant process, from candidate evaluation through immunosuppression and initial postoperative follow-up.

03.

Integrate the principles of temporary circulatory support and vasoactive management in critical care, oriented toward ventricular assist support or heart transplantation.

06.

Strengthen decision-making and teamwork skills through advanced clinical simulation, addressing critical and complex scenarios in advanced heart failure.



Target audience

Cardiologists, intensivists, cardiovascular surgeons, cardiovascular anesthesiologists, and all health professionals who work in or intend to enter the field of heart failure or mechanical circulatory support.

MEET YOUR TUTOR



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Dr. Isabel Cristina Cárdenas Moreno



Cardiologist

Universidad El Bosque
Colombia



Specialist in

Heart Failure



PCHF

University of Zurich



Master's in Pulmonary Hypertension

Universidad Francisco de Vitoria



Former Vice President

SCC 2024-2026



**President, Heart Failure, Pulmonary
Hypertension and Heart Transplant Chapter**

SCC 2026-2028



Hospital Universitario

San Rafael



Experienced leader in heart failure, pulmonary hypertension and heart transplantation, dedicated to advancing cardiovascular care through **education, innovation and multidisciplinary collaboration.**

MEET YOUR TUTOR



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Dr. Paola Alejandra Morejón Barragán, MD

Cardiologist, subspecialist in advanced heart failure, heart transplantation, mechanical circulatory support and cardiovascular critical care, trained at Fundación Favaloro in Buenos Aires.



Past Chair of ISHLT en Español

Community of the International Society for Heart and Lung Transplantation; Society leader in heart transplantation and advanced therapies.



Has contributed decisively

to the implementation and consolidation of Ecuador's heart-transplant program and advanced cardiovascular critical-care therapies.



Leads professional training

in the cardiovascular field and maintains outstanding academic leadership in the region through participation as a lecturer, international faculty member, production of scientific work and development of initiatives focused on strengthening cardiovascular medicine in Latin America.



Committed to advancing cardiovascular medicine through **leadership, education, and collaboration** for better patient outcomes.



MODULE 1

Foundations of Advanced Heart Failure



Objectives

1

Define and categorize advanced heart failure according to clinical and functional criteria.

2

Identify key tools for prognostic assessment and severity stratification.

3

Recognize the appropriate time to consider advanced treatment strategies.



Lessons

01.

Definition, Identification, and Classification of Advanced Heart Failure

- Analyze the diagnostic criteria used to define advanced heart failure, based on the latest consensus of the European Society of Cardiology (ESC).

02.

Evaluation of Advanced Heart Failure – Risk Scores, Echocardiographic and Hemodynamic Criteria

- Analyze the main predictive risk scores used in the assessment of patients with advanced heart failure, including the Seattle Heart Failure Model, MAGGIC Score, and MECKI Score, among others, and their clinical applicability.

03.

When Should Advanced Therapies Be Considered in Patients with Heart Failure?

- Determine when long-term ventricular assist device (LVAD) therapy should be proposed as a bridge to transplantation or as destination therapy.

04.

Psychosocial Evaluation of Candidates for Advanced Therapies

- Identify the psychological criteria used to assess candidates for the transplant waiting list.



MODULE 2

Medical Management of Advanced Heart Failure



Objectives

1

Implement strategies to optimize medical treatment in advanced heart failure.

2

Identify effective approaches for controlling congestion and maintaining perfusion in patients with low cardiac output.

3

Analyze the impact and application of neurohormonal therapy in disease management.



Lessons

05.

Management of Refractory Congestion in INTERMACS 4 Patients

- Analyze protocols for effective decongestion, including evidence from the CARRESS-HF and SMART Trial studies.
- Understand the sequential and total nephron blockade approach in the management of refractory congestion.

06.

Inotropic Support in Patients with Low Cardiac Output (INTERMACS 3)

- Analyze the most commonly used inotropes in patients with advanced heart failure and their impact on hemodynamic stability.

07.

Role of Neurohormonal Therapy in Heart Failure

- Determine the limits of optimization and up-titration of neurohormonal therapy in patients with advanced heart failure.

08.

Role of Nursing in the Heart Failure Day Clinic

- Understand the role of remote monitoring during the vulnerable period following hospital discharge in patients with heart failure.



Workshop Harvi #1



Introduction to Harvi – Principles of Hemodynamics

Interactive

- Integrate the principles of preload, afterload, contractility, and cardiac output in the interpretation of hemodynamic profiles.
- Analyze the impact of interventions on key hemodynamic variables in patients with advanced heart failure.
- Correlate hemodynamic findings with clinical assessment and risk stratification of candidates for advanced therapies.



MODULE 3

Interventional Therapies in Advanced Heart Failure



Objectives

1

1. Evaluate the role of interventional procedures in the treatment of heart failure.

2

2. Analyze the usefulness of procedures such as MitraClip and myocardial revascularization.

3

3. Determine the role of right heart catheterization in advanced assessment.



Lessons

09.

09. MitraClip – How Long Does It Remain an Option in Heart Failure Management? Evidence from the COAPT Trial

- Identify the clinical and technical criteria for MitraClip implantation, as well as its contraindications.

10.

10. Myocardial Revascularization in Advanced Heart Failure – Benefits and Limitations

- Analyze the impact of myocardial revascularization on reducing mortality and hospitalizations in patients with advanced heart failure, based on evidence from the STICH and REVIVED trials.

11.

11. Heart Failure in Aortic Valve Disease – What Are the Limits of TAVI?

- Evaluate the indications, benefits, and limitations of TAVI in patients with heart failure.

12.

12. Right Heart Catheterization in Advanced Heart Failure

- Identify normal values and the main hemodynamic indices used during right heart catheterization.

13.

13. Role of Cardiac Rehabilitation in Heart Failure

- Analyze the importance of cardiac rehabilitation in improving functional capacity and quality of life in patients with advanced heart failure.

MODULE 4



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The Role of the Electrophysiologist in Advanced Heart Failure



OBJECTIVES

1

Analyze the impact of cardiac resynchronization therapy in the management of advanced heart failure.

2

Evaluate the efficacy of atrial fibrillation ablation and arrhythmogenic substrate modification in the treatment of ventricular tachycardia.



LESSONS

14

Cardiac Resynchronization Therapy: When Is It Still Useful?

- Understand the indications and contraindications for cardiac resynchronization therapy, including key technical and clinical considerations.



15

Atrial Fibrillation Ablation in Advanced Heart Failure

- Understand the indications and contraindications for atrial fibrillation (AF) ablation in the setting of advanced heart failure, as well as the key technical and clinical considerations for its application.



16

Arrhythmogenic Substrate Modification in Ventricular Tachycardia

- Understand the indications and contraindications for arrhythmogenic substrate modification in ventricular tachycardia, as well as the essential technical and clinical considerations during the procedure.



17

Frailty Assessment in Patients Being Considered for Advanced Therapies

- Understand the different types of frailty assessments, including their sensitivity and specificity in patients with cardiovascular disease.





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MODULE 5

Worsening Along the Heart Failure Trajectory



OBJECTIVES

1

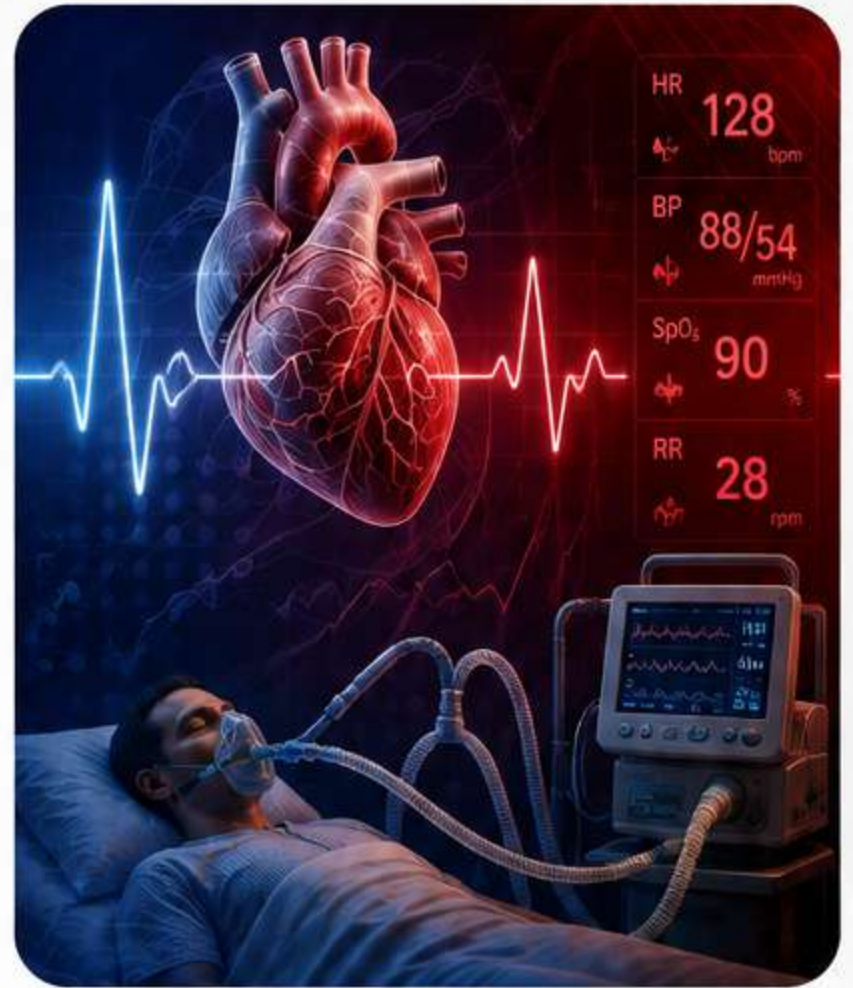
Identify effective strategies for managing clinical deterioration in patients with advanced heart failure.

2

Establish key criteria for medical optimization and the use of advanced support in the treatment of heart failure.

3

Address and manage critical situations, such as electrical storm, in the setting of advanced heart failure.



LESSONS

18

Management of Worsening in the Advanced Heart Failure Patient: Living Through the Heart Failure Trajectory

- Achieve hemodynamic and ventilatory stabilization in patients with advanced heart failure while optimizing available resources.



19

Electrical Storm in Advanced Heart Failure

- Understand the clinical definition of electrical storm in advanced heart failure and the strategies for its immediate management.



20

Mechanical Ventilation in Patients Experiencing Worsening Along the Heart Failure Trajectory

- Analyze the role of non-invasive ventilation in the management of patients with advanced heart failure, including the use of PS-CPAP, CPAP, and HFNC.



MODULE 6



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Now in the ICU!

Admission of the Patient with Low Cardiac Output and Need for Mechanical Circulatory Support



OBJECTIVES

1

Apply mechanical circulatory support strategies in patients with refractory cardiogenic shock, optimizing perfusion and hemodynamic stability.

2

Differentiate the characteristics, indications, and limitations of the different support devices: intra-aortic balloon pump (IABP), CentriMag, and veno-arterial ECMO.

3

Evaluate clinical criteria for selecting the most appropriate device and plan transitions between support systems according to the patient's clinical course.

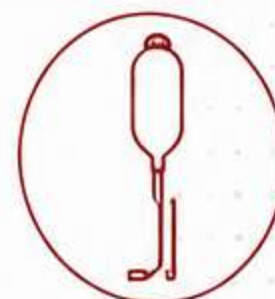


LESSONS

21

Use of the Intra-Aortic Balloon Pump (IABP)

- Understand the function of the intra-aortic balloon pump, including console interpretation and proper insertion technique.
- Understand the indications, contraindications, monitoring strategies, and IABP weaning criteria in patients with advanced heart failure.



22

Use of CentriMag in Advanced Heart Failure

- Understand how the CentriMag system works, including console visualization and key monitoring variables.



23

V-A ECMO in the INTERMACS 1 Patient: "Crash and Burn"

- Recognize patients in INTERMACS stages 1 and 2 who require immediate restoration of perfusion to prevent multiorgan deterioration.



MODULE 6

Now in the ICU!



Admission of the Patient with Low Cardiac Output and Need for Mechanical Circulatory Support



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2

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LESSONS

24

Left Ventricular Assist Device (LVAD) Following Bridge Support with ECMO

- Understand the clinical and functional criteria for reassessing and relisting a patient receiving mechanical support on the transplant waiting list.



25

Biventricular Support: Strategies and Decisions in the Critically Ill Patient

- Identify the clinical indications for right ventricular assist device (RVAD) support in the setting of advanced heart failure or severe right ventricular dysfunction.



26

Monitoring and Management of Emergencies in the ECMO Circuit

Speakers:

- Perform comprehensive and systematic monitoring of the ECMO circuit during the daily care of critically ill patients.
- Recognize the main mechanical, hemodynamic, and blood-gas-related emergencies that may occur during extracorporeal support.
- Apply systematic strategies for the safe and timely resolution of adverse circuit events, prioritizing patient stability and system integrity.
- Execute response algorithms for oxygenator, pump, or cannulation failure in accordance with international guidelines and recommendations (ELSO).



Workshop
Harvi #2

Veno-Arterial ECMO (V-A)

Interactive

- Identify clinical and hemodynamic criteria for initiating veno-arterial ECMO in patients with refractory cardiogenic shock.
- Analyze the impact of V-A ECMO on systemic perfusion, ventricular afterload, and ventricular-arterial interaction.
- Recognize the pathophysiological complications associated with V-A support and their relevance to clinical outcomes.





MODULE 7

Heart Transplantation



Objectives

1

1. Analyze the comprehensive logistics of heart transplantation, from donor selection to graft allocation.

2

2. Recognize key aspects of heart transplantation surgery and postoperative management, with emphasis on early rehabilitation.

3

3. Identify and manage critical postoperative complications, such as immune rejection and primary graft dysfunction, using advanced monitoring and treatment strategies.



Lessons

27.

27. History of Heart Transplantation

- Identify key historical milestones in the development of heart transplantation, from the earliest attempts to the most recent advances.

28.

28. Databases and Organization – Waiting Lists and Recipient Selection Criteria

- Understand the functioning and structure of key organizations involved in heart transplantation, such as UNOS (United Network for Organ Sharing) and ISHLT (International Society for Heart and Lung Transplantation), and their impact on clinical practice.

29.

29. Donor Evaluation, Procurement, and Organ Traceability in Heart Transplantation

- Describe current criteria for cardiac donor assessment, including donation after brain death (DBD) and controlled donation after circulatory death (DCD), to ensure appropriate organ selection and utilization.
- Review strategies for cardiac procurement and preservation, comparing conventional cold transport with ex vivo preservation systems, including their indications and outcomes.
- Recognize key components of heart-transplant traceability and logistics, ensuring safety, quality, and continuity throughout the process from donor to recipient.

30.

30. Surgical and Perioperative Factors in Heart Transplantation

- Surgical and perioperative factors influencing early outcomes after heart transplantation, perioperative complications, and the effect of ischemia and surgical technique according to ISHLT.

31.

31. Heart Transplantation in a Hostile Chest: Surgical Strategies in the Complex Reoperative Patient

- Identify specific surgical challenges faced by patients with previous cardiac surgery at the time of transplantation, including adhesions, anatomic distortion, and bleeding risk.



MODULE 7

Heart Transplantation



Continuing Lessons

32.

32. Postoperative Management After Heart Transplantation

- Understand strategies for hemodynamic and ventilatory monitoring in postoperative heart transplant patients.

33.

33. Immunology Applied to Transplantation – Principles of Allosensitization

Speaker: Dr. Renzo Paolo García Márquez

- Understand the immunological foundations of transplant rejection: analyze the cellular and humoral mechanisms involved in recognizing the graft as foreign, including hyperacute, acute, and chronic rejection and HLA antigens.

34.

34. Induction and Maintenance Therapy in Heart Transplantation

- Identify the clinical situations in which induction therapy is indicated in heart transplantation, as well as the risks and benefits associated with its use.

35.

35. Post-Transplant Complications: Rejection, Primary Graft Dysfunction, and Others

- Understand the pathophysiology, diagnosis, and management strategies for cellular and antibody-mediated rejection in heart transplantation.

36.

36. Cardiac Rehabilitation in the Heart Transplant Recipient

- Recognize the fundamental role of the occupational therapist in the functional recovery and adaptation of the transplant recipient to activities of daily living.



LONG-TERM VENTRICULAR ASSIST DEVICE SUPPORT (LVAD)



OBJECTIVES

1

Understand the principles of biotechnology and bioenergetics underlying the function of long-term ventricular assist devices.

2

Evaluate the clinical indications for LVAD implantation, as well as key aspects of postoperative management.

3

Identify and manage the most common complications associated with prolonged ventricular support, including thromboembolic events, infections, and device dysfunction.



LESSONS

37

Biotechnology and Bioenergetics of LVADs

- Understand the operating principles of fully magnetically levitated centrifugal pumps, including their design and energy efficiency.
- Interpret the HQ curve (relationship between flow and pressure) and its relationship with power consumption, as well as its clinical implications across different hemodynamic scenarios.



38

Surgery and Surgical Factors Influencing LVAD Implantation

- Understand the fundamental role of the cardiovascular surgeon in candidate selection, planning, and implantation of long-term ventricular assist devices (LVADs).



39

Anesthesia and Hemodynamic Optimization in Patients with LVADs

- Understand key aspects of pre-anesthetic assessment in patients with LVADs, as well as the role of advanced monitoring during the surgical procedure.



40

Immediate Postoperative Management of the Patient with an LVAD

- Apply specific hemodynamic and ventilatory management strategies for patients with an LVAD during the immediate postoperative period.



41

Right Ventricular Failure in Patients with LVADs

- Understand right ventricular physiology and ventricular interdependence in the setting of LVAD support.



MODULE 8



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LONG-TERM VENTRICULAR ASSIST DEVICE SUPPORT (LVAD)



OBJECTIVES

1

Understand the principles of biotechnology and bioenergetics underlying the function of long-term ventricular assist devices.

2

Evaluate the clinical indications for LVAD implantation, as well as key aspects of postoperative management.

3

Identify and manage the most common complications associated with prolonged ventricular support, including thromboembolic events, infections, and device dysfunction.



LESSONS

42

Infections in Patients with LVADs

- Understand the definition and classification of LVAD-related and non-LVAD-related infections, highlighting the main infectious complications in these patients.



43

Management and Follow-Up of Patients with LVADs

- Understand outpatient clinical monitoring strategies for patients with LVADs, including regular assessment of device function and the patient's overall clinical status.



44

Myocardial Recovery in Patients with LVADs — CLINICAL PERSPECTIVE

- Understand the pathophysiology of myocardial remodeling and the differences between myocardial remission and myocardial recovery in patients with LVADs.



45

Myocardial Recovery in Patients with LVADs — SURGICAL PERSPECTIVE

- Analyze surgical and clinical criteria for selecting patients with the potential for myocardial recovery. Identify preoperative and postoperative factors that predict possible functional myocardial recovery in patients receiving left ventricular assist device (LVAD) support.



46

The Role of Nursing in the Coordination of Patients with LVADs

- Understand the fundamental role of the LVAD coordinator in the care of patients before implantation, including initial assessment, education, and preparation for the procedure.



MODULE 9

Palliative Care and Ethics in Advanced Heart Failure

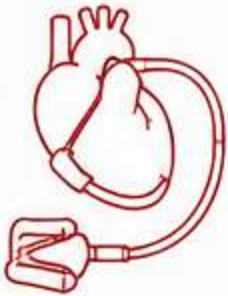


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WORKSHOP HARVI #3

Left Ventricular Support (LVAD/Impella)



- Understand the physiological principles of LVAD support and its interaction with native ventricular function.
- Develop clinical decision-making skills during simulated critical situations.



WORKSHOP HARVI #4

Right Ventricular Support (RVAD) Interactive



- Identify the characteristic hemodynamic findings of right ventricular dysfunction in different clinical scenarios.
- Analyze the impact of pharmacological and mechanical support on pulmonary circulation and cardiac output.
- Understand ventricular interdependence and its importance in patients receiving mechanical circulatory support.



OBJECTIVES

1

Identify palliative management strategies in patients with end-stage heart failure, with emphasis on symptom relief, pain control, and improvement in quality of life.

2

Address ethical issues related to withdrawal of mechanical circulatory support, taking into consideration respect for patient autonomy, family consensus, and appropriate clinical decision-making.

3

Integrate a multidisciplinary approach to the care of patients with advanced heart failure, promoting collaboration among physicians, nurses, psychologists, social workers, and other professionals in decision-making and comprehensive patient management.



LESSONS

47

Palliative Management in Advanced Heart Failure

- Recognize when not to escalate advanced support therapy by evaluating clinical and prognostic factors and quality-of-life considerations that guide the decision not to continue invasive treatments.



48

Ethics in Mechanical Circulatory Support

- Understand the ethical dilemmas involved in decisions regarding treatment escalation or palliation in patients receiving mechanical circulatory support (MCS), evaluating the balance between prolongation of life and quality of life.



49

Comprehensive Therapy in Patients Receiving Mechanical Circulatory Support

- Understand the role of physical rehabilitation in the comprehensive management of patients receiving mechanical circulatory support (MCS), focusing on improving mobility, strength, and quality of life.



50

Understanding Death and the Role of Psychology in Palliative Care Decisions

- Understand the role of psychology at the end of life, focusing on the emotional and psychological management of patients with chronic heart failure (CHF) in terminal stages and on the natural history of the disease.



WORKSHOP HARVI #5

Integrative Workshop: Mechanical Circulatory Support (IABP, ECMO, Impella, LVAD) Interactive

- Integrate clinical, hemodynamic, and disease-progression criteria to select temporary mechanical circulatory support strategies.
- Analyze escalation and transition scenarios among devices such as IABP, ECMO, and ventricular assist devices.
- Strengthen complex clinical decision-making in the management of patients with advanced heart failure.



MEET YOUR FACULTY

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Advanced Heart Failure • Transplantation • Mechanical Circulatory Support



**Dra. Isabel Cristina
Cárdenas Moreno**



**Dra. Adriana
Torres Navas**



**Dra. María Juliana
Rodríguez**



**Lic. Fabián Enrique
Abril Luna**



**Dra. Catalina
Gallego Muñoz**



**Lic. Rosalynn Denisse
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**Dr. Libardo Augusto
Medina López**



**Lic. Karen Tatiana
Cepeda Flórez**



**Lic. Cristhian Emigdio
López Pacheco**



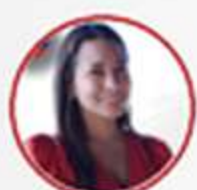
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