



Pharmacy Grand Rounds

200 First Street SW
Rochester, Minnesota 55905
<https://ce.mayo.edu/pharmacy-grandrounds2021>

Don't Lose Your Nerve: Supporting the Denervated Heart after Cardiac Transplantation

Session Date: 08/01/2023

Session Time: 11:00 – 11:45 AM (CST)

Target Audience

This continuing education (CE) session was planned to meet the needs of professional staff who deal with the selection and monitoring of medication(s) as part of their patient care duties, including pharmacists, RNs, APRNs, PAs, MDs.

Activity Overview

Under normal conditions, cardiac inotropy and chronotropy are regulated through hormones, sympathetic innervation, and parasympathetic innervation. After undergoing orthotopic heart transplant, sympathetic and parasympathetic innervation is lost. This significantly impacts baroreceptor and chemoreceptor reflexes, how the heart responds to exercise, and response to certain antiarrhythmic medications. Chronotropic incompetence due to sinus node dysfunction in the immediate post-operative setting which necessitates epicardial pacing and may require the use of pharmacologic agents such as theophylline, terbutaline, albuterol, or isoproterenol. Tachyarrhythmias, which could be related to AV conduction disorders following initial transplant, rejection, or cardiac allograft vasculopathy (CAV), can occur at any time after transplantation. Furthermore, standard antiarrhythmics may be ineffective or require dose adjustments in the newly denervated heart. This presentation will review the literature assessing drug selection and dosing considerations for chronotropic and antiarrhythmic agents that may be utilized in the support of the denervated heart after cardiac transplantation.

Learning Objectives

At the conclusion of this knowledge-based CE session, participants should be able to:

1. Describe the physiological changes in the denervated heart.
2. Identify pharmacological agents for chronotropic support following heart transplantation.
3. Summarize antiarrhythmic selection and dosing considerations for heart transplant recipients.

Faculty Information

Tanner A. Melton, PharmD
PGY2 Solid Organ Transplant Pharmacy Resident
Mayo Clinic Hospital - Rochester, MN

Tanner received a Doctor of Pharmacy degree from the University of San Diego, Skaggs School of Pharmacy and Pharmaceutical Sciences and completed his PGY1 residency at Mayo Clinic Hospital – Rochester. He is the current PGY2 Solid Organ Transplant pharmacy resident at Mayo Clinic Hospital – Rochester. His practice interests include cardiothoracic transplant, pharmacogenomics, and clinical education.



Approved Provider Statement



JOINT ACCREDITATION™
INTERPROFESSIONAL CONTINUING EDUCATION

In support of improving patient care, this activity is planned and implemented by Mayo Clinic College of Medicine and Science. Mayo Clinic College of Medicine and Science is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC) to provide continuing education for the healthcare team.

Credit Statements

AMA

Mayo Clinic College of Medicine and Science designates this live activity for a maximum of 0.75 *AMA PRA Category 1 Credits™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

ACPE



ACPE Universal Activity Number (UAN): JA0000238-0000-22-139-L01-P

Mayo Clinic College of Medicine and Science designates this educational activity for a maximum of 0.75 ACPE Knowledge-based contact hours. Participants should claim only the credit commensurate with the extent of their participation in the activity

ANCC

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AAPA



Mayo Clinic College of Medicine and Science has been authorized by the American Academy of PAs (AAPA) to award AAPA Category 1 CME credit for activities planned in accordance with AAPA CME Criteria. This activity is designated for 0.75 AAPA Category 1 CME credits. PAs should only claim credit commensurate with the extent of their participation.

Educational Format and CE Requirements

This CE session is available as a live presentation, including live webcast.

Participants must complete the following to record attendance and obtain CE credit:

1. Attend the entire session.
2. Text the session code to 507-200-3010 within 48 hours of the live presentation to record attendance.
 - a. This number is only used for receiving text messages related to tracking attendance
 - b. Employees are encouraged to create a contact in their mobile phone, as the same number is used to record attendance for every session
3. Complete the online evaluation for the respective session within 2 weeks of live presentation.

Pharmacist CE credit is electronically transferred to the National Association of Boards of Pharmacy CPE Monitor. To track CE, please go to [NABP CPE Monitor](#).

Non-pharmacist attendees can print out a record of attendance at ce.mayo.edu after completing the evaluation and claiming credit.

[Live Webcast](#) - access during presentation times

[Video Recording](#) - access two weeks after session date

Disclosure Summary

As a provider accredited by Joint Accreditation for Interprofessional Continuing Education, Mayo Clinic College of Medicine and Science must ensure balance, independence, objectivity and scientific rigor in its educational activities. All who are in a position to control the content are required to disclose all financial relationships with any ineligible company. Faculty will also identify any off-label and/or investigational use of pharmaceuticals or instruments discussed in their content for FDA compliance.

Listed below are individuals with control of the content of this program:

The faculty report the following relationships:

- Tanner A. Melton, PharmD
 - Declares no financial relationship(s) pertinent to this session
 - Declares the following off-label use of medications will be discussed during this presentation
 - Theophylline
 - Terbutaline
 - Isoproterenol

Course Director and Planning Committee Members declare no relevant financial relationship(s) pertinent to this session. Members include:

- | | |
|---|--|
| • Jennifer Elmer, DNP, APRN, CCNS | • Wayne Nicholson, MD, PharmD, BCPS |
| • Andrew Herber, PA-C | • Garrett Schramm, PharmD, FASHP, FCCP |
| • Sarah Jane Kotval, BSW | • Sara Thompson, PharmD, BCACP |
| • Scott Nei, PharmD, BCPS, BCCCP, FCCM, FMSHP | |

All relevant financial relationships have been mitigated.

For additional disclosure information regarding Mayo Clinic School of Continuous Professional Development accreditation review committee members visit ce.mayo.edu, About Us, Disclosures - or -

<https://ce.mayo.edu/content/disclosures>

System and Technical Requirements

For participants viewing the webcast, sessions are delivered via Mayo Clinic intranet web browser and Adobe® PDF. For participants viewing outside the Mayo Clinic firewall, a VPN connection is required for remote access. Recommended web browser includes Google Chrome. This session is planned and coordinated by **the Department of Pharmacy, Mayo Clinic.**