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ANESTHESIOLOGY's journal-based CME program is open to all readers. Members of the American Society of Anesthesiologists participate at a preferred rate, but you need not be an ASA member or a journal subscriber to take part in this CME activity. Please complete the following steps:

1. Read the article by Toller and Stranz entitled "Levosimendan, a new inotropic and vasodilator agent" on page 556 of this issue.
2. Review the questions and other required information for CME program completion (published in both the print and online journal).
3. When ready, go to the CME Web site: <http://www.asahq.org/journal-cme>. Submit your answers, form of payment, and other required information by December 31 of the year following the year of publication.

The American Society of Anesthesiologists is approved by the Accreditation Council for Continuing Medical Education (ACCME) to sponsor continuing medical education for physicians.

The American Society of Anesthesiologists designates this continuing medical education program for a maximum of 1 hour of Category 1 credit toward the AMA's Physician Recognition Award. Each physician should

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Purpose: The focus of the journal-based CME program, and the articles chosen for the program, is to educate readers on current developments in the science and clinical practice of the specialty of Anesthesiology.

Target Audience: Physicians and other medical professionals whose medical specialty is the practice of anesthesia.

Learning Objectives: After reading this article, participants should have a better understanding of the pharmacological treatment of heart failure with the new inotropic agent levosimendan.

Disclosure Information:

Authors - Wolfgang G. Toller, M.D., and Christian Stranz, M.D.

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Consultants or honoraria: None

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Question Writer - Peter L. Bailey, M.D.

Dr. Bailey has no grants, research support, or consultant positions, nor does he receive any honoraria from outside sources, which may create conflicts of interest concerning this CME program.

CME Article Questions

Based on the article by Toller and Stranz entitled "Levosimendan, a new inotropic and vasodilator agent" in the March issue of ANESTHESIOLOGY, choose the one correct answer for each question:

1. Which of the following statements concerning the effect of long-term treatment of heart failure with inotropic therapy on patient outcome is *most* likely true?
 - A. Catecholamine therapy decreases mortality.
 - B. Phosphodiesterase III inhibitor therapy decreases mortality.
 - C. Digoxin therapy increases mortality.
 - D. No inotrope currently available in the United States decreases mortality.
2. Which one of the following statements concerning mechanisms explaining why currently available inotropes in the United States do not improve the outcome of patients with heart failure is *least* likely true?
 - A. They do not share a common final pathway.
 - B. They produce an increase in cyclic adenosine monophosphate.
 - C. They increase intracellular calcium concentrations.
 - D. They enhance electrophysiological mechanisms that result in arrhythmias.

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3. When levosimendan is administered in the clinically recommended dosage range, which one of the following statements concerning its inotropic mechanism(s) of action is *most* likely true?
 - A. It works primarily through stimulation of phosphodiesterase III inhibitors.
 - B. It stabilizes the calcium bound conformation of troponin C.
 - C. It increases the rate of actin-myosin cross-bridge cycling.
 - D. It stimulates β -adrenergic receptors.
4. Which one of the following statements concerning the actions of levosimendan and/or milrinone is *most* likely true?
 - A. Milrinone sensitizes myofilaments to calcium.
 - B. Levosimendan metabolism results in a long-lasting active metabolite with similar calcium sensitizing properties to its parent compound.
 - C. Levosimendan therapy is associated with an incidence of arrhythmias, which is similar to that associated with milrinone therapy.
 - D. Levosimendan therapy at recommended doses carries a significant risk of worsening ischemia.
5. Treatment of patients with a reduced ejection fraction with levosimendan at the recommended doses ($6-24 \mu\text{g}/\text{kg}$ bolus over 10 minutes followed by an infusion of $0.05-0.2 \mu\text{g} \cdot \text{kg}^{-1} \cdot \text{min}^{-1}$) is *most* likely to result in which of the following?
 - A. A significant increase in myocardial oxygen demand
 - B. A significant increase in heart rate
 - C. A significant improvement in diastolic function
 - D. A significant increase in circulating levels of B-type natriuretic peptide
6. Which one of the following is *least* likely to attenuate the response of myofilaments to a given intracellular concentration of calcium?
 - A. α -Adrenergic agonists
 - B. Acidosis
 - C. Hypothermia
 - D. Sepsis

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If you have any questions regarding the ANESTHESIOLOGY continuing medical education program, please contact Ellen M. Bateman, Ed.D., Education Specialist, at (847) 825-5586 or via e-mail at e.bateman@asahq.org.