

***Anesthesiology Rounds*  
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**Cardioprotection with Anesthetic Agents: Myth or Reality?  
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**Objectives:**

- ischemic preconditioning constitutes a powerful endogenous protective mechanism against the effects of prolonged myocardial ischemia
- some anesthetic agents demonstrate pharmacological preconditioning, which shares many similarities with the pathways involved in ischemic preconditioning
- volatile anesthetic agents have direct cardioprotective properties that cannot be explained by their effect on the myocardial oxygen balance, but instead relate to a preconditioning effect and an effect on the extent of reperfusion injury
- these cardioprotective effects of volatile anesthetic agents have clinical implications and result in better early postoperative cardiac function with a lower postoperative release of troponin in coronary surgery patients

**Answer the following questions (only 1 answer is correct)**

1. Ischemic preconditioning has the following properties, except:
  - a) results only in a shortlasting protection against ischemia
  - b) consists of two windows of protection
  - c) is mediated through  $K_{ATP}$  channels
2. It is true that anesthetic preconditioning:
  - a) involves only identical pathways as ischemic preconditioning
  - b) is a common property of all anesthetic agents
  - c) is limited to the myocardium
  - d) potentiates the effects of ischemic preconditioning
3. Cardioprotection by volatile anesthetic agents:
  - a) is merely the consequence of the effects on myocardial  $O_2$  balance
  - b) is potentiated by the administration of opioids
  - c) is solely related to a pharmacological preconditioning effect

4. The use of a volatile anesthetic regimen:

- a) has no proven clinical cardioprotective advantage
- b) as preconditioning trigger, results in a translocation of PKC
- c) is associated with better early postoperative cardiac function

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