

**КАЗАХСКИЙ НАЦИОНАЛЬНЫЙ  
МЕДИЦИНСКИЙ УНИВЕРСИТЕТ ИМЕНИ С.  
Д.АСФЕНДИЯРОВА**

**КАФЕДРА:ПОЛИТИКИ И УПРАВЛЕНИЯ  
ЗДРАВООХРАНЕНИЕМ**

**ПРОЕКТ НА ТЕМУ:ОЦЕНКА  
ЭФФЕКТИВНОСТИ ПРОФИЛАКТИЧЕСКОГО  
ПРИМЕНЕНИЯ ЛИДОКАИНА ПРИ ЛЕЧЕНИИ  
ОСТРОГО ИНФАРКТА МИОКАРДА.**

**:БАЙМАГАМБЕТОВ Н.О.**

**ГРУППА:12-43-1**

**ФАКУЛЬТЕТ: ОБЩАЯ МЕДИЦИНА**



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- Проблема:

- Больной В. 40 лет, после стрессовой ситуации был доставлен в больницу с сильными болями в грудной области. После осмотра и результатов анализа ему был поставлен диагноз острый инфаркт миокарда. Для лечения больного, чтобы обезболить ему назначили внутривенно препарат лидокаин. У врача возник вопрос об эффективности этого препарата?

## по PICO



● **P-** *Больной 40 лет*

● **I-** *использование препарата лидокаина*

● **C-** *сравнение с другими больными  
использовавших лидокаин*

● **O-** *улучшение здоровья больных*

# ВОПРОС:



*Насколько эффективен лидокаин при внутривенном введении больному острым инфарктом миокарда по сравнению с эффектом плацебо, с целью нормализации состояния?*

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# Ключевые слова



- Острый инфаркт миокарда \ Лидокаин
- heart attack of myocardium \ Lidocainum

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Weiss SM, Saint DA.  
PLoS One. 2010 Nov 24;5(11):e14103. doi: 10.1371/journal.pone.0014103.  
PMID: 21124787 [PubMed - indexed for MEDLINE] [Free PMC Article](#)  
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[Spiral waves and reentry dynamics in an in vitro model of the healed infarct border zone.](#)

2. Chang MG, Zhang Y, Chang CY, Xu L, Emokpae R, Tung L, Marbán E, Abraham MR.  
Circ Res. 2009 Nov 20;105(11):1062-71. doi: 10.1161/CIRCRESAHA.108.176248. Epub 2009 Oct 8.  
PMID: 19815825 [PubMed - indexed for MEDLINE] [Free Article](#)  
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[Electroanatomic mapping of the left ventricle in a porcine model of chronic myocardial infarction with magnetic resonance-based catheter tracking.](#)

3. Dukkupati SR, Mallozzi R, Schmidt EJ, Holmvang G, d'Avila A, Guhde R, Darrow RD, Slavin G, Fung M, Malchano Z, Kampa G, Dando JD, McPherson C, Foo TK, Ruskin JN, Dumoulin CL, Reddy VY.  
Circulation. 2008 Aug 19;118(8):853-62. doi: 10.1161/CIRCULATIONAHA.107.738229. Epub 2008 Aug 4.  
PMID: 18678773 [PubMed - indexed for MEDLINE] [Free Article](#)  
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[Lidocaine abolishes the myocardial protective effect of sevoflurane post-conditioning.](#)

4. Yan M, Chen C, Zhang F, Chen G.  
Acta Anaesthesiol Scand. 2009 Jan;53(1):111-6. Epub 2007 Nov 9.

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Limalanathan S, Andersen GØ, Kløw NE, Abdelnoor M, Hoffmann P, Eritsland J. J Am Heart Assoc. 2014 Apr 23;3(2):e000679. doi: 10.1161/JAHA.113.000679. PMID: 24760962 [PubMed - indexed for MEDLINE] Free PMC Article Related citations

2. Point of care platelet activity measurement in primary PCI [PINPOINT-PPCI]: a protocol paper.  
Johnson TW, Marsden D, Mumford A, Pike K, Mundell S, Butler M, Strange JW, Bowles R, Rogers C, Baumbach A, Reeves BC. BMC Cardiovasc Disord. 2014 Apr 4;14:44. doi: 10.1186/1471-2261-14-44. PMID: 24708700 [PubMed - indexed for MEDLINE] Free PMC Article Related citations

3. Sympathetic activity-associated periodic repolarization dynamics predict mortality following myocardial infarction.  
Rizas KD, Nieminen T, Barthel P, Zürn CS, Kähönen M, Viik J, Lehtimäki T, Nikus K, Eick C, Greiner TO, Wendel HP, Seizer P, Schreieck J, Gawaz M, Schmidt G, Bauer A. J Clin Invest. 2014 Apr 1;124(4):1770-80. doi: 10.1172/JCI70085. Epub 2014 Mar 18. Erratum in: J Clin Invest. 2014 Jun 2;124(6):2808. PMID: 24642467 [PubMed - indexed for MEDLINE] Free PMC Article Related citations

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1. Rinne T, Kaukinen S.  
Acta Anaesthesiol Scand. 1998 Sep;42(8):936-40.  
PMID: 9773138 [PubMed - indexed for MEDLINE]  
[Related citations](#)

[Coronary perfusion versus cold ischemic arrest during aortic valve surgery. A randomized study.](#)

2. Sapsford RN, Blackstone EH, Kirklin JW, Karp RB, Kouchoukos NT, Pacifico AD, Roe CR, Bradley EL.  
Circulation. 1974 Jun;49(6):1190-9. No abstract available.  
PMID: 4831660 [PubMed - indexed for MEDLINE]  
[Related citations](#)

[Propranolol in the treatment of acute myocardial infarction. Effect on myocardial oxygenation and hemodynamics.](#)

3. Mueller HS, Ayres SM, Religa A, Evans RG.  
Circulation. 1974 Jun;49(6):1078-87. No abstract available.  
PMID: 4598632 [PubMed - indexed for MEDLINE]  
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Abstract

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### Does lidocaine protect the heart during coronary revascularisation?

Rinne T<sup>1</sup>, Kaukinen S.

Author information

#### Abstract

**BACKGROUND:** Lidocaine has been used as the primary antiarrhythmic agent for ventricular arrhythmias during acute myocardial infarction (MI) and open heart surgery. Its cardioprotective effects have been studied in experimental settings and also during angioplastic reperfusion and coronary revascularisation. The basic mechanism of action, probably also involved with cardioprotection, has been demonstrated to be blockade of cardiac sodium channels. In this open study we investigated the contribution of continuous lidocaine infusion to cardioprotection during coronary revascularisation with blood cardioplegia.

**METHODS:** During coronary revascularisation with cold blood cardioplegia, a study group of 50 patients received a prophylactic lidocaine infusion for 20 h started with a bolus dose before aortic clamping; another group of 50 patients without the infusion served as a control group. Serum troponin T concentration, serum creatine kinase MB activity and electrocardiography were the main parameters recorded.

**RESULTS:** Serial measurement of Troponin T (P = 0.06) and CK-MB values: (P = 0.09) were slightly lower in the lidocaine group, but the differences were not statistically significant.

**CONCLUSION:** Lacking statistically significant evidence of improved cardioprotection, lidocaine infusion cannot be recommended as a routine that class I antiarrhythmic drugs depress the ventricular activation in the infarcted myocardium. In the present study, we examined the electrophysiologic interaction between volatile anesthetics (sevoflurane, isoflurane) and class I antiarrhythmic drugs (lidocaine, procainamide) in effects on the ventricular delayed activation in a canine myocardial infarction model. The conduction time of the premature stimulation-induced ventricular excitation was measured in both normal and infarcted zones of the ventricle. An interval from the premature stimulus artifact to the epicardial activation was measured on bipolar electrograms as an index of conduction time, i.e., activation time. In the infarcted zone, the volatile anesthetics and class I antiarrhythmic drugs prolonged the activation time in the infarcted zone, and the combination of the volatile anesthetics and the class I antiarrhythmic drugs markedly prolonged the activation time or blocked the delayed activation. In the normal zone, a similar synergistic interaction was observed, but the effect of these drugs was less compared with that in the infarcted zone. From these results, possible mechanisms to explain the synergistic interaction were discussed.

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Это РКИ так как:



- Есть контрольная группа – вторая группа
- Отбирали больных с острым инфарктом миокарда
- Больные были распределены по группам случайным образом.
- В исследование было включено 100 больных.
- Есть информация о статистической силе исследования



**Место проведения исследования:**<sup>1</sup>Department of Anaesthesia and Intensive Care, Tampere University Hospital, Finland.

● **Авторы:** [Rinne T<sup>1</sup>](#), [Kaukinen S.](#)

**Дата публикации:** [Acta Anaesthesiol Scand.](#) 2010 Sep;42(8):936-40

**Метод исследования:** *Рандомизированное контролируемое испытание(РКИ)*

- **Objective:**
- Lidocaine has been used as the primary antiarrhythmic agent for ventricular arrhythmias during acute myocardial infarction (MI) and open heart surgery. Its cardioprotective effects have been studied in experimental settings and also during angioplastic reperfusion and coronary revascularisation. The basic mechanism of action, probably also involved with cardioprotection, has been demonstrated to be blockade of cardiac sodium channels. In this open study we investigated the contribution of continuous lidocaine infusion to cardioprotection during coronary revascularisation with blood cardioplegia.

***Цель:***

***Лидокаин был использован как первоначальный антиаритмический агент для желудочковых аритмий в течение острого инфаркта миокарда (МИ). Механизм действия лидокина это блокада в сердце натриевого канала. Так объясняется его кардиопротективный эффект.***

- **Methods:**

- During coronary revascularisation with cold blood cardioplegia, a study group of 50 patients received a prophylactic lidocaine infusion for 20 h started with a bolus dose before aortic clamping; another group of 50 patients without the infusion served as a control group. Serum troponin T concentration, serum creatine kinase MB activity and electrocardiography were the main parameters recorded.

- **Методы:**

- Чтобы провести исследование 50 больным в целях профилактики ввели инфузию лидокаина, а другим 50 больным не ввели, они являются контрольной группой. Во время исследования записывались результаты тропонина, креатин киназы и ЭКГ.

- **RESULTS:**

- Serial measurement of Troponin T ( $P = 0.06$ ) and CK-MB values: ( $P = 0.09$ ) were slightly lower in the lidocaine group, but the differences were not statistically significant

- ***Результаты:***

- Результаты исследований показали, что у пациентов получавшие лидокаин показатели тропонина и креатин киназы меньше, чем у контрольной группы.

- **CONCLUSION:**

- Lacking statistically significant evidence of improved cardioprotection, lidocaine infusion cannot be recommended as a routine treatment during coronary revascularisation

- ***Выводы:***

- Результаты исследований показали положительный эффект лидокаина как для острого инфаркта миокарда так и для коронарной реваскуляризации.



- Моё мнение:
- Инфаркт миокарда среди болезней сосудистых систем стоит на первом месте в нашей стране. Причина инфарктов это стрессовые ситуации, особенно часто встречаются у мужчин.
- В целях профилактики надо заниматься спортом и каждый год проходить осмотр у врача.



**Спасибо за  
внимание!**