

С.Д.АСФЕНДИЯРОВ АТЫНДАҒЫ ҚАЗАҚ ҰЛТТЫҚ
МЕДИЦИНА УНИВЕРСИТЕТІ

Тақырыбы: Эналаприлді
препаратты қолданғандағы
панкреантитің дамуына әсері.

СИТУАЦИЯ

Пациент А, 30 жаста, дәрігерге қан қысымының жоғарлауымен шағыммен түсті. Дәрігер оған ингибитор АПФ -ті тежеуші тобының препараты «Эналаприлді» тағайындады . Емдік курстан кейін дәрігер науқастың іш астарындағы ауру сезімі бар екенін байқады.

КЛИНИКАЛЫҚ СҰРАҒЫ

- «Эналаприлді» АПФ тежеуші тобының басқа «Даприл» препаратымен ауыстырсақ панкреатиттің дамуы қаншалықты дәрежеде төмендеуін байқаймыз?

PICO

- P - артериальды гипертензиямен ауратын науқас 30 жаста.
- I - АПФ ингибиторлы препараттар тобы тағайындалды.
- C - «Эналаприлді» АПФ тежеуші тобының басқа «Даприл» препаратымен ауыстырсақ.
- O - кері әсерінің төмен болуы, емдеу уақытының қысқаруы, тез жазылуы.

◎ *Кілт сөздер:*

◎ артериальды гипертензия\Эналаприл

◎ *Key Words:*

◎ Arterial hypertension/enalapril

Кілт сөзін енгізіңіз



www.ncbi.nlm.nih.gov/pubmed

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GETTING STARTED <ul style="list-style-type: none">NCBI EducationNCBI Help ManualNCBI HandbookTraining & Tutorials	RESOURCES <ul style="list-style-type: none">Chemicals & BioassaysData & SoftwareDNA & RNADomains & StructuresGenes & Expression	POPULAR <ul style="list-style-type: none">PubMedNucleotideBLASTPubMed CentralGene	FEATURED <ul style="list-style-type: none">Genetic Testing RegistryPubMed HealthGenBankReference SequencesMap Viewer	NCBI INFORMATION <ul style="list-style-type: none">About NCBIResearch at NCBINCBI NewsletterNCBI FTP SiteNCBI on Facebook
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EN 0:56 29.11.2012

Кілт сөз бойынша іздеу

The screenshot shows a web browser window with the following elements:

- Browser Address Bar:** `www.ncbi.nlm.nih.gov/pubmed?term=enalapril%20and%20pancreatitis`
- Language Selection:** "Язык этой страницы" (Language of this page) set to "английский" (English). Buttons for "Перевести" (Translate), "Нет" (No), and "Всегда переводить английский" (Always translate English) are visible.
- NCBI Header:** "NCBI Resources How To Sign in to NCBI".
- PubMed Search Bar:** Search term: "enalapril and pancreatitis". Buttons for "Search", "RSS", "Save search", and "Advanced" are present.
- Filters and Settings:** "Show additional filters", "Display Settings: Summary, 20 per page, Sorted by Recently Added", "Send to: Filters: Manage Filters".
- Results:** "Results: 1 to 20 of 21". Navigation: "<< First < Prev Page 1 of 2 Next > Last >>".
 - 1. [Prevalence and determinants of increased serum lipase levels in a general population.](#)
Völzke H, Lüdemann J, Mayerle J, Kraft M, John U, Lerch MM. *Pancreas*. 2008 Nov;37(4):411-7. PMID: 18953254 [PubMed - indexed for MEDLINE] [Related citations](#)
 - 2. [RAS inhibitors decrease apoptosis of acinar cells and increase elimination of pancreatic stellate cells after in the course of experimental chronic pancreatitis induced by dibutyltin dichloride.](#)
Madro A, Korolczuk A, Czechowska G, Celiński K, Słomka M, Prozorow-Król B, Korobowicz E. *J Physiol Pharmacol*. 2008 Aug;59 Suppl 2:239-49. PMID: 18812642 [PubMed - indexed for MEDLINE] **Free Article** [Related citations](#)
 - 3. [Effects of enalaprilat on acute necrotizing pancreatitis in rats.](#)
Turkylmaz S, Alhan E, Ercin C, Vanizor BK. *Inflammation*. 2007 Dec;30(6):205-12. Epub 2007 Jul 25. PMID: 17653597 [PubMed - indexed for MEDLINE] [Related citations](#)
 - 4. [Recurrent acute pancreatitis probably secondary to lisinopril.](#)
Kanbay M, Selcuk H, Yilmaz U, Boyacioglu S. *South Med J*. 2006 Dec;99(12):1388-9. PMID: 17233197 [PubMed - indexed for MEDLINE] [Related citations](#)
- Right Side Panels:**
 - "Titles with your search terms": "Acute pancreatitis possibly related to enalapril. [N Engl J Med. 1988] See more..."
 - "1 free full-text article in PubMed Central": "Acute pancreatitis due to ramipril therapy. [Postgrad Med J. 2004]"
 - "Find related data": Database: Select
 - "Search details": ("enalapril"[MeSH Terms] OR
- Bottom Bar:** "www.ncbi.nlm.nih.gov/pubmed?linkname=pubmed_pubmed&from_uid=18953254"
- Taskbar:** Windows taskbar with icons for "enalapril and pancr...", "Home - PubMed - N...", "Документ1 - Micros...", "Орындаған Султан...", "Галымжан 22-2 Пр...", and system tray showing "EN" and "1:42".

Dr.Web Антивирус
http://update.skymonk.net/versions.list
URL заблокирован SpIDer Gate: он известен как источник распространения вирусов

ТАПҚАН МАҚАЛАҒА КІРУ

The screenshot shows a web browser window with the following elements:

- Browser Tabs:** "Acute pancreatitis associate...", "ScienceDirect Login".
- Address Bar:** "www.ncbi.nlm.nih.gov/pubmed/8305779".
- Page Header:** "NCBI Resources How To Sign in to NCBI".
- Search Bar:** "PubMed" dropdown, search input field, "Search" button, "Advanced" link, "Help" link.
- Article Information:**
 - Source: *Ann Pharmacother.* 1993 Dec;27(12):1465-6.
 - Title: **Acute pancreatitis associated with the use of lisinopril.**
 - Author: *Maliekal J, Drake CE.*
 - Location: Sonoma Valley Hospital, CA 95476.
- Abstract:**
 - OBJECTIVE:** To report a case of acute pancreatitis associated with lisinopril use.
 - CASE SUMMARY:** A 67-year-old man with no past history of pancreatitis or its associated risk factors developed acute pancreatitis after taking lisinopril for two years. To date, the use of angiotensin-converting enzyme (ACE) inhibitors and development of pancreatitis has been described in the literature with captopril, enalapril maleate, and one case temporally related to lisinopril use.
 - CONCLUSIONS:** The use of ACE inhibitors as first-line agents in controlling hypertension and congestive heart failure has increased. In addition to monitoring for efficacy and commonly reported adverse effects, clinicians need to be aware that acute pancreatitis may occur with all ACE inhibitors.
- PMID:** 8305779 [PubMed - indexed for MEDLINE]
- Publication Types, MeSH Terms, Substances:**
 - Publication Types: Case Reports
 - MeSH Terms: Acute Disease, Aged, Drug Monitoring, Humans, Lisinopril/adverse effects*, Male, Pancreatitis/chemically induced*, Pancreatitis/diagnosis
 - Substances: Lisinopril
- Related citations in PubMed:**
 - Recurrent acute pancreatitis probably secondary to lisinopril. [South Med J. 2006]
 - Acute pancreatitis following lisinopril rechallenge. [Am J Emerg Med. 1998]
 - Relationship between acute pancreatitis and ACE inhibitors. [Acta Cardiol. 2004]
 - Review Lisinopril. A review of its pharmacology and clinical efficacy in elderly [Drugs Aging. 1997]
 - Review Drug-induced pancreatitis (lisinopril). [J Am Board Fam Pract. 1999]
- Cited by 1 PubMed Central article:** Lisinopril therapy associated with acute pancreatitis. [West J Med. 1995]
- Save items:** Add to Favorites
- Send to:** (dropdown menu)
- Dr.Web Антивирус:** A notification box with a shield icon, text "Dr.Web Антивирус", and details: "http://update.skymonk.net/versions.lst", "URL заблокирован SPiDer Gate: он известен как источник распространения вирусов".

МАҚАЛАНЫҢ ТАҚЫРЫБЫ

- ◎ **ЗЕРТТЕУДІҢ ӨТКІЗІЛГЕН ЖЕРІ** Sonoma Valley Hospital, CA 95476
- ◎ **АВТОРЛАРЫ:** Maliekal J, Drake CF
- ◎ **ПУБЛИКАЦИЯ ЖЫЛЫ:** Ann Pharmacother. 1993 Dec;27(12):1465-6.
- ◎ **ЗЕРТТЕУ ӘДІСІ:** TRANSFER-AMI,
Рандомизацияланған бақылау сынақ(РБС),

- ◎ **МЕТОДЫ:** Чау-или фруктозы подачей Sprague-Dawley крыс получавших эналаприл (дозировка, 10 mg.kg.d) или транспортное средство в течение 4 недель перед измерением в естественных условиях экстравазации Эванс синий (EB) красителя в поджелудочной железе. Ненаркотизированных животных (n = 10-17 в группе) вводили EB 20 mg.kg в хвостовую вену за 10 минут до убийства и EB краситель был извлечен из каждой поджелудочной железы с помощью формамида.
- ◎ **METHODS:** Chow- or fructose-fed Sprague-Dawley rats were treated with enalapril (dosage, 10 mg.kg.d) or vehicle for 4 weeks before measuring in vivo the extravasation of Evans blue (EB) dye in pancreas. Unanesthetized animals (n = 10-17 per group) were injected with EB 20 mg.kg in the caudal vein 10 minutes before killing, and EB dye was extracted from each pancreas by using formamide.

- **РЕЗУЛЬТАТЫ:** Относительно контроля, эналаприл обработанных животных показали 5-кратное увеличение поджелудочной железы экстравазации EB в фруктозы кормили крыс ($P < 0,001$), меньше изменений (2-раза) наблюдается в чау-кормили животных, получавших эналаприл ($P < 0,001$). Увеличение поджелудочной железы vasopermeability наблюдается эналаприл в фруктозы кормили животных сопровождается значительным увеличением общего синтазы окиси азота поджелудочной железы (NOS) активности по сравнению с контрольной группой ($\Delta = +128\%$, $p < 0,001$). Это увеличение активности NOS, казалось, исключительно связаны с активацией эндотелиальной NOS изоформы, потому что только eNOS иммунореактивной массы (в отличие от nNOS), казалось, увеличился в поджелудочной железе этих животных. Лечение эналаприлом не было связано с любым увеличением в сыворотке крови концентрации амилазы в любом животных подгруппы.
- **RESULTS:** Relative to controls, enalapril-treated animals showed a 5-fold increase in pancreatic extravasation of EB in the fructose-fed rat model ($P < 0.001$); smaller changes (2-fold) were observed in the chow-fed animals treated with enalapril ($P < 0.001$). The increase in pancreatic vasopermeability observed with enalapril in the fructose-fed animals was accompanied by a significant increase in total pancreatic nitric oxide synthase (NOS) activity compared to controls ($\Delta = +128\%$; $P < 0.001$). This increase in NOS activity seemed to be solely attributable to an upregulation of the endothelial NOS isoform because only the eNOS immunoreactive mass (as opposed to nNOS) seemed to be increased in the pancreas of these animals. Treatment with enalapril was not associated with any increase in serum amylase concentrations in either animal subgroup.

- **ВЫВОДЫ:** Эналаприл увеличивает проницаемость капилляров (транссудации макромолекул) в поджелудочной железе фруктозы кормили крыс. Это говорит о том, что ингибиторы АПФ активирует Енос изоформы локально, повышает vasopermeability поджелудочной железы, и поэтому может привести к местным отеком в фруктозы кормили резистентностью к инсулину крысах.
- **CONCLUSIONS:** Enalapril increases capillary permeability (extravasation of macromolecules) in the pancreas of the fructose-fed rat model. This suggests that ACE inhibition upregulates the eNOS isoform locally, increases vasopermeability of the pancreas, and can therefore result in local edema in the fructose-fed insulin-resistant rat model.