

Integrating knowledge into the clinical workflow

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“To me, “knowledge” is about access and understanding. Action is then a choice (hopefully an informed one) for the individual.”

Chris Silagy, Australia 1999

“Knowledge may gain a woman much applause, but it will not add a single lover to her list.”

Jane Austen, 18th century writer

Knowledge is...

BMJ Knowledge mission statement

What do we need
to integrate knowledge
successfully into
the clinical workflow?

A recipe for success

High quality systems that minimise hurdles

High quality information

- Up to date
- Relevant
- Valid
- Accessible/pitched at the right level for each audience
- Drillable to source data

A recipe for success

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New journal launched
[Genetic Vaccines and Therapy](#)
"aims to apply new knowledge about genetics in treating human disease." This will be the only journal in PubMed to specifically focus on this subject.

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The latest from *Open Access Now* is now available [online](#), including a conversation with Elizabeth Marincola of the ASCB.

Two new articles in *Journal of Biology*
The authors of the [latest research article](#) to be published

Research highlights Open Access

Fatty acids and cell polarity
BMC Developmental Biology 2003, **3**:8
Characterisation of two new C. elegans Pod-class genes suggests that interaction between the pronucleus-centrosome complex and the cortex helps establish polarity and that the fatty acid composition of the cell is important for this interaction.

SMART- selection bias beaten?
BMC Family Practice 2003, **4**:11
The protocol of this randomised controlled trial of self-management of oral anticoagulation therapy in non-selected primary care patients may eliminate concerns over selection bias in previous trials.

SARS risk screen
BMC Medical Genetics 2003, **4**:9
Screening for risk from SARS infection in south Asian populations could be simplified due to preliminary results showing an association of human leukocyte antigen B*4601 with severity of SARS infection.

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About the journal

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Research Open Access Distribution of the species of the Anopheles gambiae complex and first evidence of Anopheles merus as a malaria vector in Madagascar. Leong Pock Tsy JM, Duchemin JB, Marrama L, Rabarison P, Le Goff G, Rajaonarivelo V, Robert V. Malaria Journal 2003, 2:33 (8 October 2003) [Abstract] [Provisional PDF]

It is a Herculean task to survey the distribution of Anopheles over a large country like Madagascar and this study, using state-of-the-art molecular typing techniques, provides important information in a rapidly changing environment.



Research Open Access Zooprophylaxis or Zoopotential: the outcome of introducing animals on vector transmission is highly dependent on the mosquito mortality while searching. Saul A. Malaria Journal 2003, 2:32 (19 September 2003)

Latest news

Next BSP Malaria Meeting will be held in Chester College, UK (April 4th-7th 2004). Forms for abstracts and registration are available (13 October 2003)

Medicine and Health in the Tropics, a joint Congress of the IFTM and FESTMIH, with substantial malaria component, to be held in Marseille, France (11-15th September 2005) (16 September 2003)

New book on 'Ecological aspects for application of genetically-modified mosquitoes' is available online in PDF format (18 July 2003)

International Bioinformatics

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The internet and electronic publishing enable the creation of public libraries of science containing the full text and data of any published research article, available free of charge to anyone, anywhere in the world.

Immediate unrestricted access to scientific ideas, methods, results, and conclusions will speed the progress of science and medicine, and will more directly bring the benefits of research to the public.

To realize this potential, a new business model for scientific publishing is required that treats the costs of publication as the final integral step of the funding of a research project. To demonstrate that this publishing model will be successful for the publication of the very best research, PLoS will publish its own journals. PLoS Biology launched its first issue on October 13, 2003, in print and online. PLoS Medicine will follow in 2004.

A recipe for success

Patient choice

- Information about availability/quality of services locally and nationally
- Access to/ownership of personal health information (Health Space)

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current account

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The housing market: boom or gloom?



- With rates so low prices will go up, up, up
- It's steadied up. Prices should stay about the same
- Negative equity here we come

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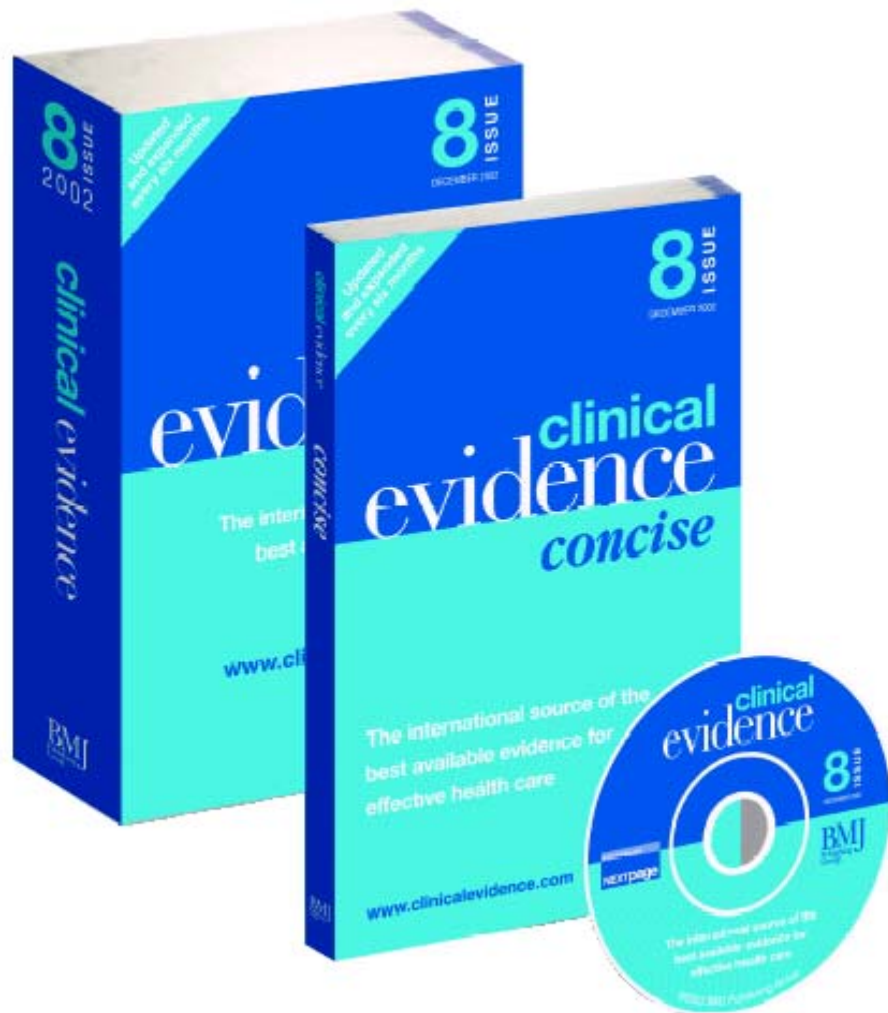
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A recipe for success

Shared decision making

- True partnership between patients and clinicians
- Clinicians and patients have access to the same core of information



QUESTIONS

Effects of drug treatments for panic disorder1005

INTERVENTIONS

BeneficialTricyclic antidepressants
(Imipramine)1005
Selective serotonin reuptake
inhibitors1006**Trade off between benefits and
harms**

Benzodiazepines1007

Unknown effectivenessMonoamine oxidase
inhibitors1007

Buspirone1007

To be covered in future updates β Blockers
Antipsychotics
Clonidine
Cognitive behavioural therapy
Psychotherapies
Bibliotherapy
Aerobic exercise

See glossary, p 1006

Key Messages

- **Benzodiazepines** One systematic review and one additional RCT have found that alprazolam versus placebo significantly reduces the number of panic attacks and improves symptoms. However, benzodiazepines are associated with a wide range of adverse effects both during their use and after treatment has been withdrawn.
- **Buspirone** RCTs found insufficient evidence on the effects of buspirone versus placebo.
- **Monoamine oxidase inhibitors** We found no RCTs on the effects of monoamine oxidase inhibitors.
- **Selective serotonin reuptake inhibitors** Systematic reviews and one additional RCT have found that selective serotonin reuptake inhibitors versus placebo improve symptoms in panic disorder. One RCT found that discontinuation of sertraline in people with a good response significantly increased exacerbation of symptoms.
- **Tricyclic antidepressants (Imipramine)** One systematic review and subsequent RCTs have found that imipramine versus placebo significantly improves symptoms. One RCT found that imipramine significantly reduced relapse rates over 12 months (NNT 5, 95% CI 3 to 14).

The BestTreatments Home page

HOME

CONDITIONS
AND TREATMENTS

PERSONAL
EXPERIENCES

ASK THE
PHARMACIST

DECISION
SUPPORT

ALTERNATIVE
MEDICINE

ONLINE
CLASSES

Welcome to BestTreatments

We can help you find out which treatments really work. Our information comes from the *British Medical Journal's* worldwide survey of the best, most up-to-date medical research, used by doctors everywhere.

BestTreatments can help you and your doctor use the evidence from medical research to decide together which treatments are best for you.

Choose a condition below. Or check [What's coming next?](#)



Patients

Choose a condition



Doctors

Choose a condition

What we do

- We sort through hundreds of thousands of research studies to tell you which treatments work.
- We tell you which drugs work and what side effects they have.
- We tell you how other patients live with their condition.
- We give you a way to learn more with two online classes. Our newest class helps you [work with your doctor](#). We also have a class for [women with breast cancer](#).

What we don't do

- We don't give you information that's misleading or biased. We tell you what the research says.
- We don't take advertising.



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Why do we focus on

Osteoarthritis treatment index page

HOME

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AND TREATMENTS

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Osteoarthritis

► Introduction

What treatments work?

What is it?

What are the symptoms?

How common is it?

What will happen?

Questions to ask

[Personal experiences](#)

Introduction

Osteoarthritis can make your joints feel stiff and painful. But if you learn about it and what you can do to help yourself, you may be able to cope with it better.

We've brought together the best research about osteoarthritis and weighed the evidence about how to treat it. You can use our information to talk with your doctor and decide which treatments are best for you.

[What treatments work for osteoarthritis?](#)

[What is osteoarthritis?](#)

[What are the symptoms of osteoarthritis?](#)

[How common is osteoarthritis?](#)

[What will happen to me?](#)

[Questions to ask your doctor](#)



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How helpful did you find this page?

1 2 3 4 5

not at all helpful very helpful

This site is for your information only. For medical advice, consult a health professional.

Breast-conserving surgery: pros and cons

Breast cancer

[Introduction](#)

► [What treatments work?](#)

[What is it?](#)

[What are the symptoms?](#)

[How common is it?](#)

[What will happen?](#)

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[Ask the pharmacist](#)

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[Cannot believe it](#)

Breast-conserving surgery compared with mastectomy

In this section

[Does it work?](#)

[What is breast-conserving surgery?](#)

[What is a mastectomy?](#)

[Pros and cons of breast-conserving surgery](#)

[Pros and cons of mastectomy](#)

[How can breast-conserving surgery help?](#)

[Why should breast-conserving surgery work?](#)

[Can breast-conserving surgery be harmful?](#)

[What's the evidence?](#)

Does it work?



If you have early invasive breast cancer, (where the cancer is located either only in your breast or has spread only to nearby [lymph nodes](#)) breast-conserving surgery (where only a small amount of healthy tissue is removed along with the cancer) and total mastectomy (where all the breast tissue including the nipple is removed) work equally well in extending your life for 10 years or more as long as all of the cancer is removed.

Breast-conserving surgery removes the cancer and also some cancer-free tissue from the area around the cancer.

Most women who have breast-conserving surgery have excellent or good cosmetic results. (The term cosmetic results refers to how the breast looks



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Condition information

Heart failure

► Your stories

- [Not too young](#)
- [A hard adjustment](#)
- [Very scary](#)
- [I'm prepared](#)

[Heart failure index](#)
[Ask the pharmacist](#)

Your stories

Read what other patients and caregivers have to say about coping with this condition.

[Not too young to have heart failure](#)

No one else thought so, but Brandy, a college student, thought her symptoms were from a heart problem. Turned out she was right.

[As I grew stronger, I found new interests](#)

Bill has worked hard all his life, so having to give up a job was one of the most difficult adjustments he's made to heart failure.

[He told my husband to make funeral plans](#)

She's had her ups and downs, but Mimi has outlived the first gloomy assessment by 30 years and now is raising a grandson.

[I'm prepared for what comes next](#)

Her retirement is no longer an active one, but she's enjoying the quiet solitude to the fullest.

Look for other stories in:



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This site is for your information only. For medical advice, consult a health professional.

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Decision support module



How to use research to support your treatment decisions

It can be hard to know which medical evidence to believe. One day you may hear that drinking alcohol is good for your heart. The next day you may hear that alcohol makes it more likely that you'll get breast cancer. And your friend may swear that a treatment you've never heard of saved his mother's life.

All medical research is not created equal. Some studies are more reliable than others. So we've put together some guides to help you weigh the evidence and work with your doctor to choose the treatment that is best for you.



Patients

[Why do I need evidence-based medicine?](#)

Only by looking at all the evidence and judging it can you work out what the research really says about a treatment.

[Understanding risks](#)

Learn what doctors mean when they talk about risk, and find out how risk may affect your decisions about treatments. (Contains interactive animations)

[How to make the best decisions about](#)



Doctors

[Why should I use clinical evidence in my practice?](#)

Clinical evidence can help you make clinical decisions without telling you what to do.

[What are the best studies?](#)

Finding the right studies is critical to answering clinical questions.

[Weighing the evidence](#)

Not all effective treatments are right for all patients.

Online class

Early Invasive
Breast Cancer

Why take this class?

back   next

Welcome to BestTreatments....

[Click above to move through the lessons](#)

Introduction

[why take this class?](#)

[getting the most from this class](#)

What do I need to know...

[about breast cancer?](#)

[about my chances?](#)

What are my options...

[for surgical treatment?](#)

[for radiation therapy?](#)

[for chemo or hormonal therapy?](#)

What ...

[can I do for myself?](#)

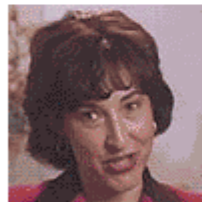
[about my emotional](#)

An online class for women with early invasive breast cancer

For an introductory tour of this class click the icon [TOUR](#)

alternatively, you can continue reading through this page for an explanation of how this class works

Introduction



Betsy Mullen
Founder, President/CEO
WIN Against Breast Cancer

"This class is for women, like you, who have just been diagnosed with early stage breast cancer. When I was diagnosed, I remember what a challenging time this was for me. You probably feel shocked, anxious and confused, which is to be expected. You know

Course Highlights

Support when you need it

Contact a nurse tutor or experienced counselor at any time.

Patients' testimony

Hear from women who are survivors of breast cancer.



An online community

Different types of knowledge

- **Foreground knowledge**

- needed for a specific clinical task
- eg. Give IV thrombolysis for AMI, but beware of hypotension

- **Background knowledge**

- needed to understand the foreground knowledge
- eg. What is hypotension and how do I measure it?

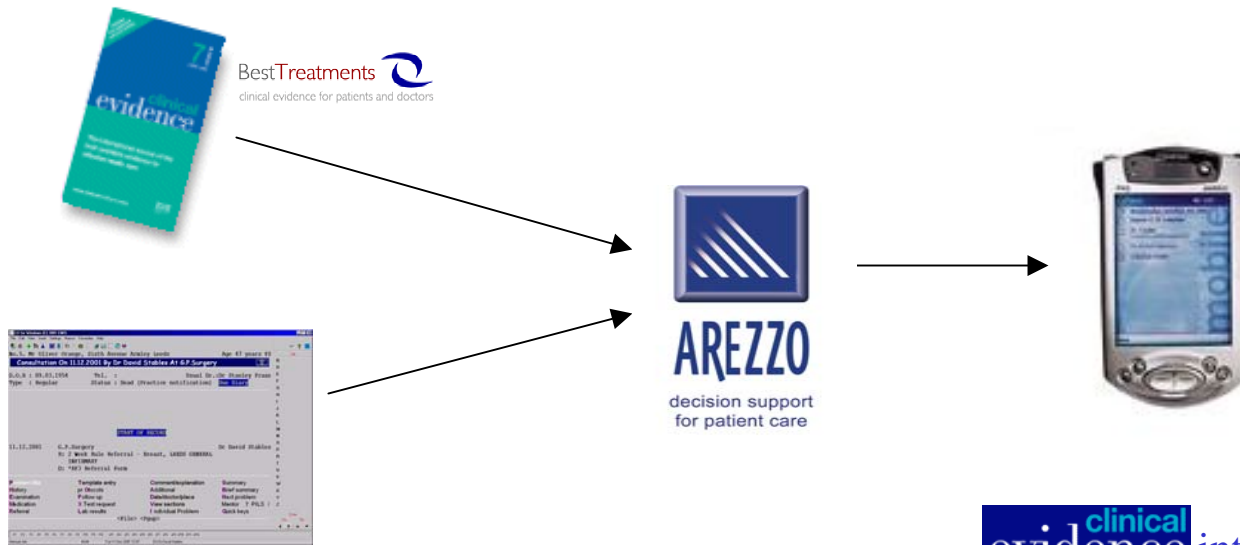
– Scott Richardson

A recipe for success

Individualised decision support

- Information tailored to individual patients
- Linked to the EMR
- Linked to drug prescription/referral
- Weighting for individual preferences

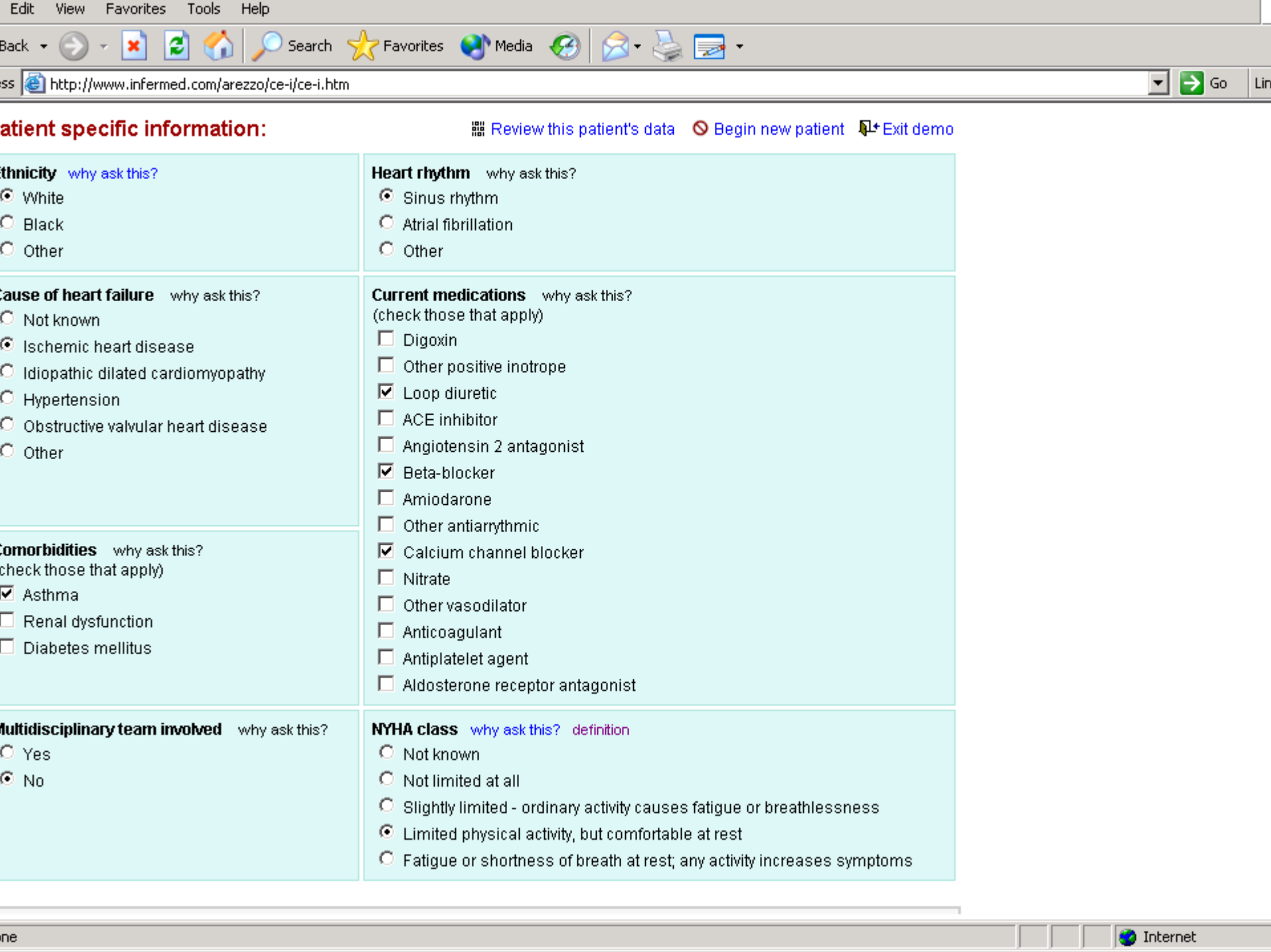
clinical evidence interactive - an overview



Electronic Medical Record

Patient specific knowledge
where and when it is needed

clinical evidence interactive



Patient specific information:

[Review this patient's data](#) [Begin new patient](#) [Exit demo](#)

Ethnicity [why ask this?](#)

- White
- Black
- Other

Heart rhythm [why ask this?](#)

- Sinus rhythm
- Atrial fibrillation
- Other

Cause of heart failure [why ask this?](#)

- Not known
- Ischemic heart disease
- Idiopathic dilated cardiomyopathy
- Hypertension
- Obstructive valvular heart disease
- Other

Current medications [why ask this?](#)
(check those that apply)

- Digoxin
- Other positive inotrope
- Loop diuretic
- ACE inhibitor
- Angiotensin 2 antagonist
- Beta-blocker
- Amiodarone
- Other antiarrhythmic
- Calcium channel blocker
- Nitrate
- Other vasodilator
- Anticoagulant
- Antiplatelet agent
- Aldosterone receptor antagonist

Comorbidities [why ask this?](#)
(check those that apply)

- Asthma
- Renal dysfunction
- Diabetes mellitus

Multidisciplinary team involved [why ask this?](#)

- Yes
- No

NYHA class [why ask this?](#) [definition](#)

- Not known
- Not limited at all
- Slightly limited - ordinary activity causes fatigue or breathlessness
- Limited physical activity, but comfortable at rest
- Fatigue or shortness of breath at rest; any activity increases symptoms

cardiovascular disorders:

Heart failure

Select topic Patient's details

Review treatment options

Treatment options:

by this order?

Patient information leaflet

Review this patient's data

Begin new patient

Exit demo

The patient is currently taking the following medications:

Loop diuretic

Beta-blocker !

Calcium channel blocker

Beneficial or likely to be beneficial for this patient:

ACE inhibitors

Angiotensin 2 receptor antagonist

Other beneficial or likely to be beneficial:

Cardiac glycosides

Multidisciplinary disease management

Exercise training

Aldosterone receptor antagonists

Unknown Effectiveness:

Amiodarone

Anticoagulants

Antiplatelet agents

Ineffective, Harmful, or Unlikely to be Beneficial:

Other inotropic agents

Other antiarrhythmics

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Clinical Evidence **Evidence without Effort** **BMJ Publishing Group** **AREZZO**

Cardiovascular disorders: **Heart failure**

Select topic: [Patient's details](#) **Review treatment options**

Treatment options: [Patient information leaflet](#) [Review this patient's data](#) [Begin new patient](#) [Exit demo](#)

[Why this order?](#)

The patient is currently taking the following medications:

- Loop diuretic**
- Beta-blocker**
 - ☺ Reduced mortality (OR 0.64, 95pc CI 0.53 to 0.79)
 - ☺ Reduced risk of hospital admissions (OR 0.64, 95pc CI 0.53 to 0.79)
 - ☺ Fears that beta-blockers may cause excessive problems with worsening heart failure have not been confirmed.
 - ✗ Beta-blockers are contraindicated in patients with asthma
 - ☺ ACE inhibitors are regarded as standard therapy for CHF patients recruited to beta-blocker RCTs
- Calcium channel blocker**

Beneficial or likely to be beneficial for this patient:

- ACE inhibitors**
- Angiotensin 2 receptor antagonist**

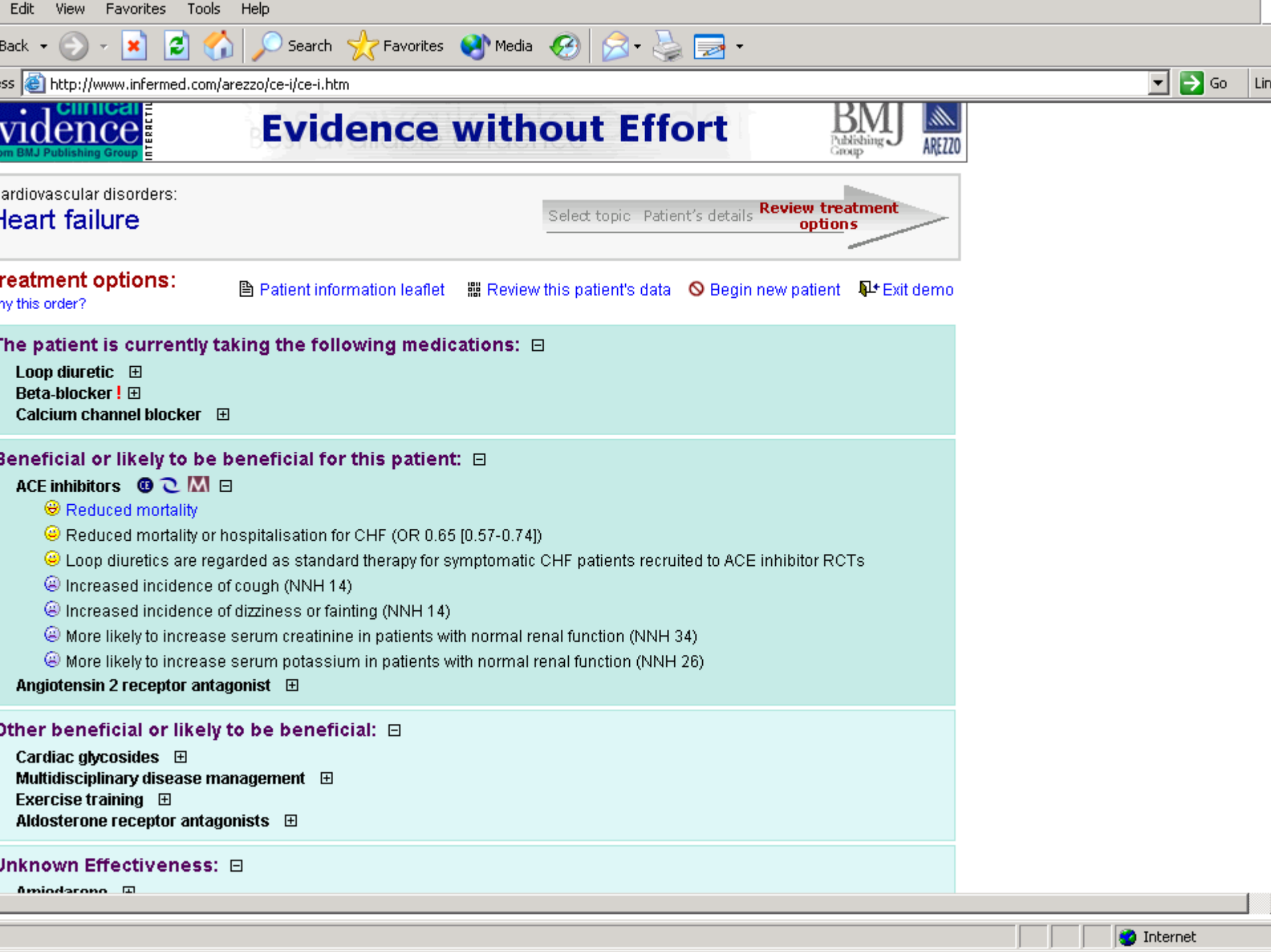
Other beneficial or likely to be beneficial:

- Cardiac glycosides**
- Multidisciplinary disease management**
- Exercise training**
- Aldosterone receptor antagonists**

Unknown Effectiveness:

- Amiodarone**
- Anticoagulants**
- Antiplatelet agents**

Microsoft PowerPoint - [Presentation1] [Internet](#)



Cardiovascular disorders:
Heart failure

Select topic Patient's details **Review treatment options**

Treatment options:
Buy this order? [Patient information leaflet](#) [Review this patient's data](#) [Begin new patient](#) [Exit demo](#)

The patient is currently taking the following medications:

- Loop diuretic
- Beta-blocker
- Calcium channel blocker

Beneficial or likely to be beneficial for this patient:

ACE inhibitors

- Reduced mortality
- Reduced mortality or hospitalisation for CHF (OR 0.65 [0.57-0.74])
- Loop diuretics are regarded as standard therapy for symptomatic CHF patients recruited to ACE inhibitor RCTs
- Increased incidence of cough (NNH 14)
- Increased incidence of dizziness or fainting (NNH 14)
- More likely to increase serum creatinine in patients with normal renal function (NNH 34)
- More likely to increase serum potassium in patients with normal renal function (NNH 26)

Angiotensin 2 receptor antagonist

Other beneficial or likely to be beneficial:

- Cardiac glycosides
- Multidisciplinary disease management
- Exercise training
- Aldosterone receptor antagonists

Unknown Effectiveness:

- Amiodarone

Evidence without Effort



Cardiovascular disorders:

Heart failure

Treatment options:

Why this order?

The patient is currently

- Loop diuretic
- Beta-blocker
- Calcium channel blocker

Beneficial or likely to be

- ACE inhibitors
 - Reduced mortality
 - Reduced mortality
 - Loop diuretics are
 - Increased incidenc
 - Increased incidenc
 - More likely to increa
 - More likely to increa

Angiotensin 2 receptor ant

Other beneficial or like

- Cardiac glycosides
- Multidisciplinary disease
- Exercise training
- Aldosterone receptor antagonists

Unknown Effectiveness:

Amilorone

Review treatment

Clinical Evidence - Microsoft Internet Explorer

Cardiovascular disorders
Heart failure
Robert McKelvie

QUESTION What are the effects of drug treatments in heart failure?

OPTION Angiotensin converting enzyme inhibitors

Two systematic reviews and recent RCTs have found that angiotensin converting enzyme inhibitors reduce mortality, hospital admission for heart failure, and ischaemic events in people with heart failure. Relative benefits are similar in different groups of people, but absolute benefits are greater in people with severe heart failure.

Benefits: We found two systematic reviews (search dates 1994 and not stated) of angiotensin converting enzyme (ACE) inhibitors versus placebo in heart failure. [20] [21] The first systematic review (search date 1994, 32 RCTs, duration 3–42 months, 7105 people, [New York Heart Association](#) class III or IV) found that ACE inhibitors versus placebo reduced mortality (611/3870 [16%] with ACE inhibitors v 709/3235 [22%] with placebo; ARR 6%, 95% CI 4% to 8%; OR 0.77, 95% CI 0.67 to 0.88; NNT 16). [20] Relative reductions in mortality were similar in different subgroups (stratified by age, sex, cause of heart failure, and New York Heart Association class). The second systematic review (search date not stated, 5 RCTs, 12 763 people with left ventricular dysfunction or heart failure of mean duration 35 months) analysed results from individuals in long term and large RCTs that compared ACE inhibitors versus placebo. [21] Three RCTs were in people

Evidence without Effort



cardiovascular disorders:

Heart failure

Treatment options:

Why this order?

The patient is currently

- Loop diuretic
- Beta-blocker
- Calcium channel blocker

Beneficial or likely to be

- ACE inhibitors
- Reduced mortality
- Reduced mortality
- Loop diuretics are
- Increased incidenc
- Increased incidenc
- More likely to increa
- More likely to increa

Angiotensin 2 receptor al

Other beneficial or like

- Cardiac glycosides
- Multidisciplinary disease management
- Exercise training
- Aldosterone receptor antagonists

Unknown Effectiveness:

- Amilorone

Review treatment

Patient Choice - Microsoft Internet Explorer

ACE Inhibitors

Patient choice

Do they work?

Yes. If you take ACE inhibitors, you are less likely to have to go to the hospital because of your heart failure. You are also less likely to die from heart failure or to have a heart attack or chest pain (known as angina). These drugs can also delay the development of heart failure if you are at high risk of getting it.

What are they?

ACE is an abbreviation for the name of some chemicals that are produced naturally by the body. The A stands for angiotensin, a chemical that the body produces when it notices that less blood is being pumped around the body. Your blood carries the oxygen and food that are essential for all the cells in your body.

clinical evidence for patients and doctors

Evidence without Effort



cardiovascular disorders:

Heart failure

Treatment options:

Why this order?

The patient is currently

- Loop diuretic
- Beta-blocker
- Calcium channel blocker

Beneficial or likely to be

ACE inhibitors

- Reduced mortality
- Reduced mortality
- Loop diuretics are
- Increased incidenc
- Increased incidenc
- More likely to increa
- More likely to increa

Angiotensin 2 receptor ant

Other beneficial or like

- Cardiac glycosides
- Multidisciplinary disease
- Exercise training
- Aldosterone receptor antagonists


Unknown Effectiveness:

Amiodarone

Review treatment


Martindale Demo - Microsoft Internet Explorer

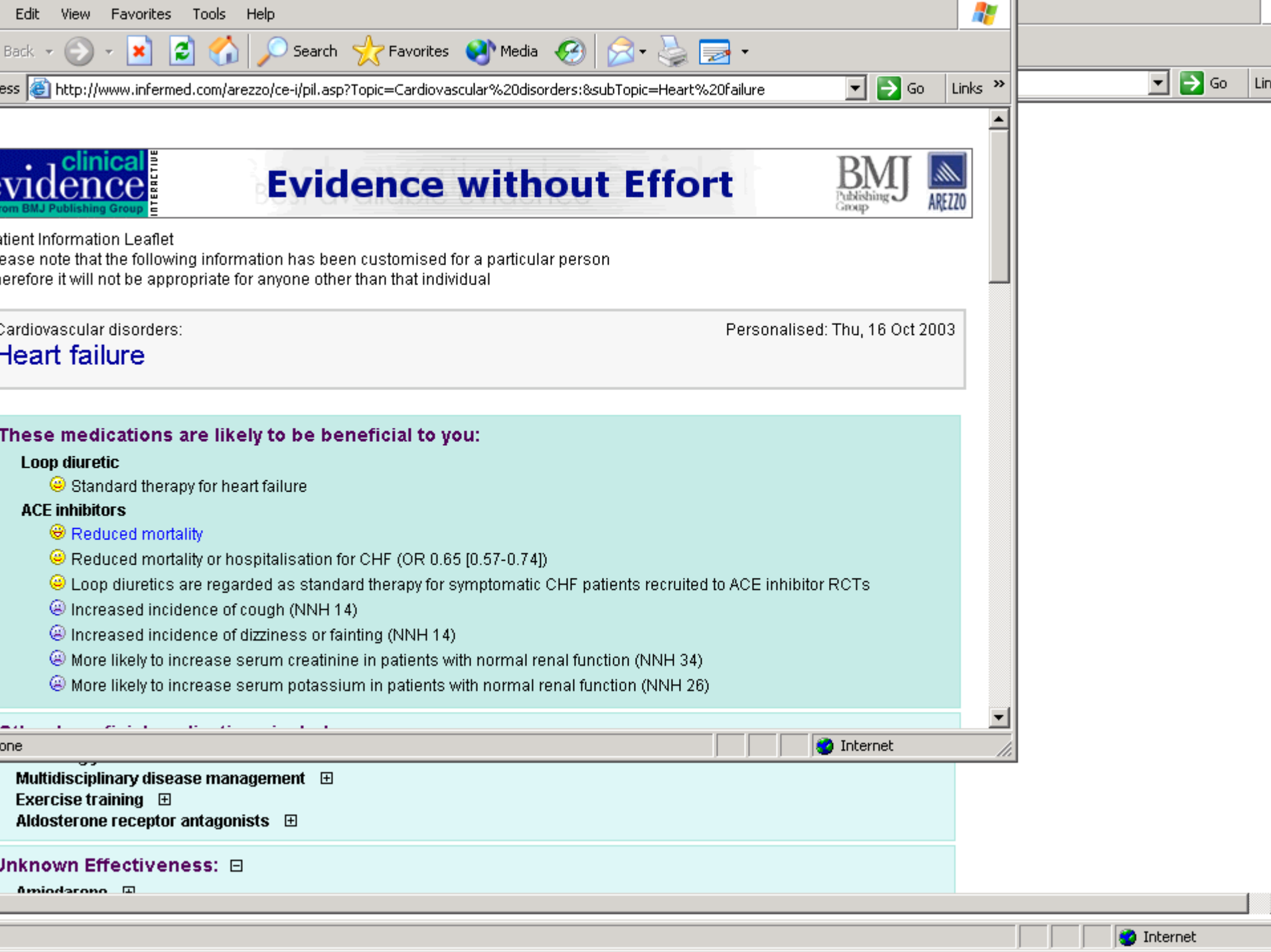
Click "Data" to review patient's features → [Data](#)



Martindale 2002 (published by the Pharmaceutical Press)

- [-] ACE Inhibitor Information
 - [-] Adverse Effects & Treatment
 - [Summary of adverse effects](#)
 - [Management of ACE inhibitor-induced cough](#)
 - [Cough has been associated with ACE inhibitor treatment](#)
 - [ACE inhibitors may induce membranous glomerulonephropathy and interstitial nephritis](#)
 - [Diuretics increase the risk of loss of renal function](#)
 - [Risk of decline in renal function in patients with heart failure](#)
 - Uses & Administration
 - Interactions
 - Precautions





Evidence without Effort



patient Information Leaflet
Please note that the following information has been customised for a particular person
therefore it will not be appropriate for anyone other than that individual

Cardiovascular disorders: Personalised: Thu, 16 Oct 2003
Heart failure

These medications are likely to be beneficial to you:

Loop diuretic

☺ Standard therapy for heart failure

ACE inhibitors

☺ [Reduced mortality](#)

☺ Reduced mortality or hospitalisation for CHF (OR 0.65 [0.57-0.74])

☺ Loop diuretics are regarded as standard therapy for symptomatic CHF patients recruited to ACE inhibitor RCTs

☹ Increased incidence of cough (NNH 14)

☹ Increased incidence of dizziness or fainting (NNH 14)

☹ More likely to increase serum creatinine in patients with normal renal function (NNH 34)

☹ More likely to increase serum potassium in patients with normal renal function (NNH 26)

Multidisciplinary disease management

Exercise training

Aldosterone receptor antagonists

Unknown Effectiveness:

Amilorone

Internet

Internet

A recipe for success

One level of quality, many usage models

- A core of high quality information, accessible through a range of different outlets so people can choose
 - Digital TV
 - Radio
 - Phone/video phone
 - Web/touch screens
 - PDA/wireless
 - CD Rom
 - Paper

A recipe for success

Money and political will

- Governments and international bodies recognise that their best investment in health care is providing high quality information systems and content
- Drug companies move their money from advertising, to sponsoring access to high quality information for clinicians and patients (educational grants)

A recipe for success

A virtuous circle

- Clinicians and patients actively involved in generating high quality evidence
- Databases of ongoing trials drive up recruitment, reduce post hoc analyses, reduce non-publication of negative trials



- Trial registration
- Unique identification scheme
- International databases


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Introduction



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- data items >
- memorandum >

metaRegister of Controlled Trials (mRCT)

Access to the mRCT is FREE - You need to [Log on / Register](#) before you can search or browse the mRCT

Those registers which appear in the BLUE boxes below continue to update their records in the metaRegister of Controlled Trials. Those registers which appear in the GREY boxes below are no longer supplying updated records to the metaRegister of Controlled Trials.

<ul style="list-style-type: none"> Action Medical Research 	<ul style="list-style-type: none"> Medical Research Council (UK)
<ul style="list-style-type: none"> Alzheimer's Society 	<ul style="list-style-type: none"> NHS Trusts Clinical Trials Register
<ul style="list-style-type: none"> Arthritis Research Campaign 	<ul style="list-style-type: none"> National Health Service Research and Development Health Technology Assessment Programme
<ul style="list-style-type: none"> British Heart Foundation 	<ul style="list-style-type: none"> National Health Service Research and Development Programme, Time Limited

Update

- September 2003: **NEW! NHS Trusts Clinical Trials Register**
- August 2003: **European Science Foundation website explains how to apply for an ISRCTN**
- July 2003: **New NCR Clinical Trials Website launched to bring together the main UK cancer registers**

New in ISRCTN

- ISRCTNs assigned to 500+ NHS funded trials
- ISRCTN scheme accepted by major medical journals

New in mRCT

- Updated registers:**
- NHS Trusts Clinical Trials Register

A recipe for success

A virtuous circle

- Questions from clinicians and patients harvested and formulated into searchable databases

What we don't know is as important
as what we do know

We should show the dark as well as the
light side of the moon

- Jerry Osheroff



What's on the dark side of the moon?

- Questions not studied at all
- Studied but in small or poor quality trials
- Wrong outcomes
 - Didn't look at outcomes that matter to patients (eg. acceptability or quality of life)
 - Didn't look at adverse events
- Too selective
 - Didn't include elderly people or those with comorbidity
- Not studied in relevant settings
 - Done in tertiary referral centre, not community hospitals

Why show the dark side?

- A powerful force for changing the research agenda
- So clinicians can distinguish between individual uncertainties and shared uncertainties
- So patients can understand the limits of knowledge in health care
- To create valid space for patient preferences and “best practice”



A recipe for success - a summary

- High quality systems
- High quality information
- Open access to full text
- Patient choice
- Shared decision making
- Individualised information
- One level of quality, many usage models
- Money and political will
- A virtuous circle

But will clinicians use it?

Only if...

- patients do too
- it's linked to “must have” information
- it carries education credits/CME points
- it's easy to use
- it tells them what they want to know
- it genuinely makes life easier

Thank you

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