Where does the evidence for your treatment come from? Information for patients (consumers) needs to be a 2-way process

The Cochrane Collaboration and systematic reviews

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Decisions?

YOU PROMISED THAT YOU WERE GOING TO START TAKING BETTER CARE OF YOURSELF!
I AM, ... I JUST TOOK MY VITAMIN.

AFTER EATING TWO DEEP-FRIED TWINKIES, WASHING DOWN A FLINTSTONES VITAMIN WITH A COKE IS NOT A GOOD START.
Why do we need information

• Decisions
  – manage personal health issues or deal with new health situations
  – what sort of treatment
  – assessing the risks or side-effects

• Information- need to know more
  – family, friends
  – health professionals
  – information sources

The knowledgeable patient

• Interacts with health professionals
• Seeks support, exchange views
• Develops a health partnership
• Asks questions about the evidence for treatment

Evidence

• Anecdote - the power of one
• Some things get better on their own
• Placebo effect

Probabilities

Probabilities—the power of many

• Probability of effects of treatment¹
  1. How likely is a particular outcome?
  2. What factors affect the chance of this happening?
  3. How will a particular treatment change the chance of this happening

• Finding the information on probabilities:
  – Use the most reliable sources
  – The power of many

¹Smart Health Choices: making sense of health advice. L. Irwig, J. Irwig, L. Trevena, M. Sweet

Randomized controlled trials

Grape juice study
12 participants
four women eight men

Intervention group
drank grape juice
five people

Control group
drank fake beverage
seven people

Researchers

http://training.cochrane.org/sites/training.cochrane.org/
What is a systematic review?

Does it work in excema?— people in the group given the new cream seem to do better than the control group—but the trial is very small

What makes a review ‘systematic’?

• Include all relevant studies without cherry picking
• Reports on the process undertaken
• Reports conclusions authors came to
• All Cochrane systematic reviews follow the same format and methods
• Cochrane reviews published online in the Cochrane Library
• All Australians have access to the Cochrane Library online- dedicated page summaries

http://summaries.cochrane.org/about-site

http://training.cochrane.org/sites/training.cochrane.org/files/uploads/ALOIS_modules/strictly_cochrane/player.html
Exploring parts of a Cochrane systematic review

What is the question?
Look at the title

What was found and what does it mean?

Meta-analysis

Abstract and Consumer summary

Cochrane systematic reviews

http://www.thecochranelibrary.com

- Cochrane - an international collaboration
- Over 5,000 Cochrane reviews available online on The Cochrane Library
Selecting the right treatment

Finding information

1 Australia in the digital economy: The shift to the online environment. Communications report 2009–10 Australian Communications and Media Authority
Long-acting beta2-agonists for people with COPD.

Kew KM, Mavergames C, Walters JAE
Published Online: 15 October 2013

We wanted to know whether twice-daily treatment with an inhaled long-acting beta2-agonist was better than treatment with a dummy inhaler for people with chronic obstructive pulmonary disease (COPD).

Background to the review
COPD is a disease of the lungs that causes airways to narrow. As a result, people with COPD experience symptoms of breathlessness, cough and mucus buildup, which worsen over time. Cigarette smoking is the most common cause of COPD, and it is the fourth or fifth most common cause of death worldwide.

Inhaled salmeterol and formoterol, known as long-acting beta2-agonists (LABAs), are widely used to manage the symptoms of COPD, so it is important to understand their benefits and side effects. They are often introduced when inhaled treatments for quick relief from symptoms (e.g., salbutamol) are no longer helpful. LABAs are designed to be taken twice a day to control symptoms and reduce the likelihood of flare-ups.

salmeterol, formoterol
Long-acting beta2-agonists for people with COPD.
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What did we find?

Twenty-six studies (including 14,939 people with moderate to severe symptoms of COPD) compared twice-daily salmeterol or formoterol with a dummy inhaler. The evidence gathered for this review is current up to June 2013. Results within studies were described most often after six months of treatment, but some were reported at three months and others after as long as three years.

More men than women took part, and they had moderate to severe symptoms when they began treatment.

People who took LABA inhalers showed greater improvement on quality of life scales than those taking dummy inhalers, and they had fewer serious flare-ups that resulted in a hospital stay (18 fewer per 1000). They also had better lung function than people who had taken placebo. LABA inhalers did not reduce the number of people who died, and no significant difference was seen between those who had serious adverse events while taking the medication.

Pulmonary rehabilitation for people who have been in hospital with an exacerbation of chronic obstructive pulmonary disease
Puhan MA, Gimeno-Santos E, Scharplatz M, Troosters T, Walters EH, Steurer J
Published Online: October 2011

Cochrane Summary

We wished to determine the impact of pulmonary rehabilitation on hospital admissions and other patient-important outcomes such as quality of life. In order to be considered for our review, the clinical trials had to involve some sort of exercise program. However, some of the programs also included emphasis on endurance and strength training or breathing exercises and education about COPD. We were interested only in studies which assessed the effects of courses of exercise therapy in people with Chronic Obstructive Pulmonary Disease (COPD), who had been in hospital following an exacerbation. We included nine studies. Pulmonary rehabilitation reduced hospital admissions and mortality compared with usual community care (no rehabilitation). Quality of life was also improved and the effect was substantially larger than the minimal important difference. Pulmonary rehabilitation appears to be a highly effective and safe intervention in COPD patients after suffering an exacerbation.

“Pulmonary rehabilitation reduced hospital admissions and mortality compared with usual community care (no rehabilitation). Quality of life was improved and the effect was substantially larger than the minimal important difference”
Main results:
We identified nine trials involving 432 patients. Pulmonary rehabilitation significantly reduced hospital admissions (pooled odds ratio 0.22 [95% CI 0.08 to 0.58], number needed to treat (NNT) 4 [95% CI 3 to 8], over 25 weeks) and mortality (OR 0.28; 95% CI 0.10 to 0.84), NNT 6 (95% CI 5 to 30) over 107 weeks). Effects of pulmonary rehabilitation on health-related quality of life were well above the minimal important difference when measured by the Chronic Respiratory Questionnaire (MD for dyspnea, fatigue, emotional function and mastery domains between 0.81 (fatigue; 95% CI 0.16 to 1.45) and 0.97 (dyspnea; 95% CI 0.35 to 1.58)) and the St. Georges Respiratory Questionnaire total score (MD -9.88; 95% CI -14.40 to -5.37); impacts domain (MD -13.94; 95% CI -20.37 to -7.51) and for activity limitation domain (MD -9.94; 95% CI -15.98 to -3.89)). The symptoms domain of the St. Georges Respiratory Questionnaire showed no significant improvement. Pulmonary rehabilitation significantly improved exercise capacity and the improvement was above the minimally important difference (six-minute walk test (MD 77.70 meters; 95% CI 12.21 to 143.20) and shuttle walk test (MD 64.35; 95% CI 41.26 to 87.43)). No adverse events were reported in three studies.

PEARLS - Practical Evidence About Real Life Situations (click to read)

Clinical question:
How effective is pulmonary rehabilitation following exacerbations of chronic obstructive pulmonary disease (COPD)?

Bottom line:
Compared to usual community care (no rehabilitation), pulmonary rehabilitation reduced hospital admissions over 34 weeks (NNT* 3) and mortality over 107 weeks (NNT 6). Quality of life measures, such as dyspnea, fatigue and emotional function, were also improved, and the effect was well above the minimal important difference. Exercise capacity was also improved. No adverse events were reported. *NNT = number needed to treat to benefit one individual.

Caveat:
Treatment group assignment was not blinded in these studies. This may have introduced bias for subjective outcomes, such as quality of life, but is less likely to be an important source of bias for mortality and hospital admission data. Another limitation is the small number of patients included in the trials and methodological shortcomings.

Context:
Pulmonary rehabilitation has become a cornerstone in the management of patients with stable COPD. Systematic reviews have shown large and important clinical effects of pulmonary rehabilitation in these patients. In patients with unstable COPD who have suffered from an exacerbation recently, however, the effects of pulmonary rehabilitation are less established.

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means breathlessness
Cochrane Consumer Network

- Consumers understand and can use research
  - http://consumers.cochrane.org/
- Online summaries of best evidence on health care
- Cochrane Consumer Network supports health care users understand evidence-based healthcare
  - give their perspectives, help set priorities
- Get healthcare consumers involved in production of Cochrane Systematic Reviews
  - Offers online training

Consumers’ role in Cochrane Collaboration

- Ensure that a review question is relevant
- Identify outcomes that are important for consumers
- Ensure that review can be read by a wide audience, language is sensitive to consumers
- Weigh the benefits against the potential harms – from a healthcare user perspective
- Prioritise topics for new reviews
Common roles for consumers in Cochrane

• Comment on protocols (road map for the review) to ensure that outcomes relevant to consumers are included
• Provide a consumer perspective by commenting on the “Cochrane Summary" of the review
• Prepare review summaries in plain language
• Comment on a Cochrane review of the best evidence on a healthcare intervention, prior to publication

How to become involved in Cochrane

• Cochrane Airways group- reviews in COPD, asthma, bronchiectasis, IPF, pulmonary hypertension, sarcoid and chronic cough
  – Rhinitis, lung cancer, cystic fibrosis, pneumonia/acute infections have their own review groups
• To get involved with Airways group, complete registration at website
  – http://airways.cochrane.org/get-involved
• To get involved with Cochrane Consumers Network, complete registration to join CCNetwork email list
• Can link with other consumers, other review groups
  – http://consumers.cochrane.org/Get-Involved