Medical reversals in primary health care: towards improving clinical decision-making and education of health professionals.

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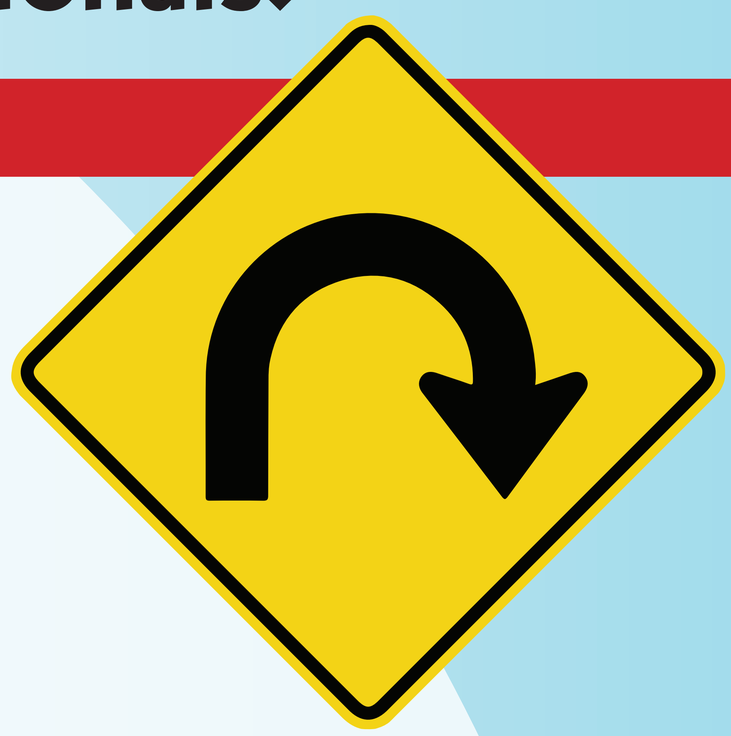


RESEARCH QUESTION

In trials relevant to primary healthcare, what factors are associated with the reversal of medical practices?

1. BACKGROUND

Medical practices unsupported by adequate evidence are often contradicted in future research; a phenomenon described as 'medical reversal'. A medical reversal occurs when newer and better-quality evidence finds an established medical practice to be less effective or more harmful than originally claimed. For example, observational studies associated the practice of prescribing hormone replacement therapy to postmenopausal women with a reduced risk of cardiovascular disease. Subsequently the Women's Health Initiative trial demonstrated this practice to be ineffective.

2. OBJECTIVE

With this research, I seek to identify the factors associated with reversed medical practices.

3. DESIGN

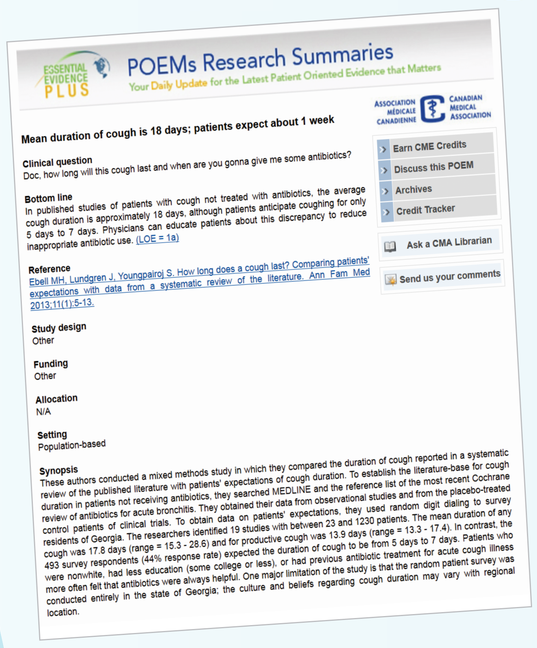
I will use a dataset of 960 randomized controlled trials (RCTs) from 2002-2007. These trials have been selected for their relevance to primary care and summarized for the education of clinicians as Patient-Oriented Evidence that Matters (POEMs).

Step 1: Each RCT summarized as a POEM will be categorized independently by two physicians into one of two categories: (1) reversed or (2) not reversed. Disagreements will be discussed and resolved with a third party as needed.

Step 2: Using content analysis, I will extract the following characteristics of each POEM and its corresponding RCT: effect size, end points, industry sponsorship, sample size, field (e.g., Cardiology), level of evidence (according to Oxford Centre for Evidence-based Medicine), blinding of participants, blinding of outcome assessment.

4. ANALYSIS

I will perform a logistic regression analysis with 'medical reversal' as the dependent variable and the mentioned characteristics as independent variables.



ESSENTIAL EVIDENCE PLUS

POEMs Research Summaries

Your Daily Update for the Latest Patient Oriented Evidence that Matters

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Mean duration of cough is 18 days; patients expect about 1 week

Clinical question
Doc, how long will this cough last and when are you gonna give me some antibiotics?

Bottom line
In published studies of patients with cough not treated with antibiotics, the average cough duration is approximately 18 days, although patients anticipate coughing for only 5 days to 7 days. Physicians can educate patients about this discrepancy to reduce inappropriate antibiotic use. (LOE = 1a)

Reference
Ebell MH, Lundgren J, Youngpairoj S. How long does a cough last? Comparing patients' expectations with data from a systematic review of the literature. Ann Fam Med 2013;11(1):5-13.

Study design
Other

Funding
Other

Allocation
N/A

Setting
Population-based

Synopsis
These authors conducted a mixed methods study in which they compared the duration of cough reported in a systematic review of the published literature with patients' expectations of cough duration. To establish the literature-base for cough duration in patients not receiving antibiotics, they searched MEDLINE and the reference list of the most recent Cochrane review of antibiotics for acute bronchitis. They obtained their data from observational studies and from the placebo-treated control patients of clinical trials. To obtain data on patients' expectations, they used random digit dialing to survey residents of Georgia. The researchers identified 19 studies with between 23 and 1230 patients. The mean duration of any cough was 17.8 days (range = 15.3 - 28.6) and for productive cough was 13.9 days (range = 13.3 - 17.4). In contrast, the 493 survey respondents (44% response rate) expected the duration of cough to be from 5 days to 7 days. Patients who were nonwhite, had less education (some college or less), or had previous antibiotic treatment for acute cough illness more often felt that antibiotics were always helpful. One major limitation of the study is that the random patient survey was conducted entirely in the state of Georgia; the culture and beliefs regarding cough duration may vary with regional location.

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5. EXPECTED FINDINGS

Step 1: I estimate 50-100 POEMs will be categorized as reversed.

Step 2: I expect sample size and effect size will be associated with reversal.

6. CONCLUSION

Identifying the factors associated with reversal of medical practices will enhance clinical decision-making, potentially avoiding the harms of recommending ineffective tests or treatments, and improve the education of future health professionals.