

In search for the Holy Grail of cough guidelines

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Cough of all types and duration (acute and chronic), a common reason for acute presentations to medical practitioners, is a burden of disease across the pediatric (1,2) and adult (3) ages and across countries (4). A recent study in children found that parents sought multiple consultations (~75% had seen a doctor >5 times) for their child's cough prior to appropriate management (5). In an attempt to improve the management of cough, the concept of using a guideline for cough was first initiated by Dr. Irwin in the 1990s (6). Now, there are many guidelines on the management of cough in children and adults (7). Those accustomed to evidence based medicine are cognisant of the relative paucity of studies to inform these evidence-based guidelines on the management of chronic cough. This was highlighted by some but not all of these guidelines and now confirmed through the analyses undertaken by Jiang and colleagues (7), the first study to compare the different cough guidelines using the Appraisal of Guidelines for Research and Evaluation (AGREE) tool. While the analyses were done well, it included studies from a decade ago and during this period, major changes in the field of guideline development and evaluation has occurred.

Should we still use guidelines?

Given the limitations of these guidelines, why should clinicians take note of, or use, these clinical practice guidelines? While not universally popular, it has been well documented that high quality and well-

implemented guidelines can reduce variance in clinical care, reduce cost (8) and most importantly, improve clinical outcomes (9). Indeed, for chronic cough in children, a randomised controlled trial showed that use of the American College of Chest Physicians' (ACCP) guideline (10) significantly improved clinical outcomes (improved quality of life, reduced duration of cough and improved cough resolution).

However, the quality of many clinical practice guidelines is highly variable (9), including those endorsed by academic societies (11). Poorly developed guidelines, such as those overseen by panel members with close relationships with "big pharma", propagate discontent about guidelines (11) and create management dilemmas for doctors and possibly be harmful to patients (9,11). Good clinical guidelines are transparent, derived from a rigorous process, externally reviewed and disseminate "the most scientifically sound healthcare practice" (9) undertaken by a multidisciplinary panel whose members are free of financial conflicts (9,12). As described by Jiang and colleagues (7), such is the quality of the ACCP cough guidelines, abbreviated to the Chest's cough guidelines (13).

Good guidelines require many components including independence and content expertise; it is insufficient to simply undertake a systematic review without careful and expert interpretation of the data. A Cochrane review (14) on the use of hypertonic saline for bronchiolitis concluded that "*Given the clinically relevant benefit and good safety profile, nebulised 3% saline used in conjunction with bronchodilators*

should be considered an effective and safe treatment for infants with mild to moderate acute viral bronchiolitis". In stark contrast, two major national independent guidelines [from the American Academy of Pediatrics (AAP) (15) and the United Kingdom National Institute for Health and Care Excellence (NICE) (16)] recommended against the use of hypertonic saline and their summary of the evidence was very different to that of the Cochrane (14) review. The AAP guidelines (15) included the same articles as the Cochrane review (14) but the NICE guideline (16), undertaken more than a year after the AAP guideline (15), had only one additional RCT published after the AAP guideline (14) was undertaken.

Guidelines should never represent "cookbook medicine" and are not a substitute for individualised high quality clinical care as individuals, families and settings are heterogenous, necessitating individualised nuances and deviations in selected circumstances. However, when implemented well, the contribution of untainted high quality guidelines to improved clinical outcomes is undisputed (9,12). The field of guideline development and implementation has undergone substantial changes (12) since defined in the 1990s as "systematically developed statements to assist practitioner and patient decisions about appropriate healthcare for specific clinical circumstances" (17).

The changing post of guideline development and evaluation

Guidelines, available on most conditions, now number in the thousands. The history of guidelines outlined a decade ago (18) has undergone further developments to ensure consistent highest standards. These standards include selection of guideline panel review, which is the starting point. Lenzer and colleagues (9) outlined that 8 points that should raise skepticism of the guideline's standards and recommendations. These are: financial sponsorship that has direct or indirect industry funding, the committee chair or multiple member chairs having any financial conflict (declared or hidden), suggestion of committee stacking, little input from methodologist and absence of external review or non-physician experts/patient representative/community stakeholders (9).

The analyses undertaken by Jiang and colleagues (7) included all cough guidelines from 2006, i.e., guidelines that span over the last decade. While some guidelines published in 2006 scored well and others published more recently did not, the analyses have to be taken in context of the

changing post of guideline development while in search of the Holy Grail of cough guidelines. Jiang and colleagues (7) appropriately used the AGREE-II tool for assessing these guidelines but the next version, AGREE Recommendation EXcellence (AGREE-REX), is currently being tested.

The future

Jiang and colleagues' (7) paper has confirmed that the ACCP CHEST guidelines currently holds the gold medal (13) among cough guidelines. However, the search for the Holy Grail of cough guidelines will be incomplete until substantially more evidence for the management of cough in adults and children are available and studies need to be of high quality and use appropriate age-appropriate outcome measures (19). Also, guideline implementation is required to fully realise its value in improving clinical outcomes.

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Footnote

Conflicts of Interest: AB Chang is an author in several of the guidelines mentioned in the article.

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