Take 3 – Practical Practice Pointers© July 15, 2019 Edition

TB Screening in Healthcare, PPD Shortage, "Medical Reversals"

A Two-fer from the CDC and the Guidelines

1) Screening for Tuberculosis in Healthcare Workers and 2) PPD Shortage

The CDC recently released new guidance regarding two issues surrounding screening for tuberculosis (TB). The first is a new TB screening guideline for healthcare workers.

But first, a review of some definitions:

- Latent TB infection (LTBI) = infection with the mycobacterium without active disease, not transmissible
- Active TB = infection with symptoms/signs of active disease, usually transmissible
- TST = tuberculin skin testing ("PPD")
- IGRA = interferon gamma release assay ("Quantiferon gold" and others)
- Symptom assessment = a cough lasting longer than three weeks, unexplained weight loss, night sweats or a fever, and loss of appetite
- Risk Assessment = residence of > 1 month in country with high TB rate, current/planned immunosuppression, close contact with infectious TB, current or past residence in large group settings (ie: such as homeless shelters or prisons).

Most cases of TB in the U.S. are diagnosed using a combination approach that includes one of these two TSTs and/or IGRA blood tests. Additional evaluation beyond skin tests and IGRA, such as chest X-ray and bacterial cultures, is needed to distinguish between latent and active TB.

The new Screening Guidelines for Healthcare Workers came about because data show that the TB testing conversion is rare in this group and serial testing is both costly and has a high false positive rate. Based on this, the CDC recommends the following:

- Annual TB testing of health care personnel is <u>not recommended</u> unless there is a known exposure or ongoing transmission at a healthcare facility.
- Active exposure-based testing and follow-up should be continued.
- A baseline assessment should be completed upon hiring, to include: TB education, risk assessment, symptom assessment, and <u>testing</u>.
- Continue to perform annual risk assessment.
    - For low risk: TB education, risk/symptom assessment, testing only if positive for symptoms or newly determined high risk
    - For high risk: TB education, risk/symptom assessment, testing

The second new guidance from the CDC has to do TB skin testing due to an anticipated 3-10+ month shortage of *Aplisol*, one of two purified-protein derivative (PPD) tuberculin antigens approved for TSTs. The CDC recommends the following:

- Substitute IGRA blood tests for TSTs. (Note: The criteria for interpretation of IGRA blood tests are different than for TSTs).
- Substitute Tubersol for Aplisol for skin testing when indicated/necessary.

- Prioritize who receives TSTs, in consultation with state and local public health authorities (Note: Some people may need to defer testing, depending on their risk for TB. Testing is recommended only in at-risk individuals and may not be needed when the likelihood of TB exposure is low.).

Although studies suggest the results are similar for TSTs in most patients, the CDC cautions that switching between tests could lead to some individuals testing negative after an initial positive test and vice versa.

My Comment:
My thanks to John Epling, MD, a FM colleague and Medical Director for Carilion Clinic Employee Health (as well as a member of the USPSTF) for his assist with this Pointer.

Regarding the recommendation regarding screening for healthcare workers, John shares, *"This is a welcome change - it's nice when guideline organizations recognize the need to decrease the amount of testing and intervention .... Defining the high-risk healthcare workforce that requires annual testing should be a local, facility-specific decision; who comes in contact with TB patients most, and under what circumstances? To make this policy effective, there must also be a good system in place for dealing with high-risk exposures in the hospital - like caring for a patient with a respiratory illness who is later found to have active tuberculosis. Finally, healthcare workers who have latent tuberculosis (a positive TB test without symptoms) must be treated. There are several shorter-term options for this available now (Link), which should help encourage more people to get treated and will further reduce the risk of active TB in our facilities."*

References:

- MMWR Weekly Report: Tuberculosis Screening, Testing, and Treatment of U.S. Health Care Personnel: 2019;68(19);439–443. May 17. Link
- MMWR Weekly Report: Nationwide Shortage of Tuberculin Skin Test Antigens: CDC Recommendations for Patient Care and Public Health Practice. 2019;68(24);552–553. June 21: Link

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From the Literature and the Popular Press

3) Medical Reversals – Don't Believe Everything You Believe, or Read

Low-value medical care is care that is either ineffective or that cost more than other options but only offers similar effectiveness. Such care can result in physical and emotional harm, undermine public trust in medicine, and have both an opportunity cost and a financial cost. Identifying and eliminating low-value medical care will, therefore, reduce costs and improve care.

"Medical reversals" are a subset of low-value medical care and are defined as care that has been integrated into medical practice, often through "conventional wisdom," but subsequently has been found, through randomized controlled trials, to be no better than a prior or lesser standard of care. It can, however, be difficult to identify medical reversals. For example, the Choosing Wisely initiative maintains a list of low-value medical practices, but it relies on medical organizations to report such practices and often includes only those practices where there is a high degree of consensus.

The authors of this paper claim that a systematic search of randomized controlled trials in three leading medical journals (JAMA, the Lancet, and NEJM) over a 16-year period ending in 2017 identified 396 medical reversals spanning medical disciplines, types of interventions, and populations. This represented 13% of the randomized trials published in these journals during that time. They concluded that the de-adoption of these and other low-value medical practices will lead to cost savings and improvements in medical care.

Some notable reported "medical reversals" based on their reviews included:

- **Peanut allergies can occur whether or not a child is exposed to peanuts before age 3.** In the past, Pediatricians have counseled parents to keep babies away from peanuts for the first three years of life. We now know that early exposure can actually help prevent allergy.
- **Fish oil does not reduce the risk of heart disease. I**t seems logical that fish oil helped to prevent heart disease due to findings that populations whose diets contain a lot of fatty fish seem to have a lower incidence of heart disease and these fatty fish contain omega-3 fatty acids. However, a cohort trial published in 2013 found that fish oil did not provide primary prevention for a population at risk for ASCVD.
- **A lifelike doll carried around by teenage girls will not deter pregnancies.** Programs have been developed in high schools and even middle school throughout the country under the assumption that having to care for these dolls would help prevent teen pregnancy. However, a 2016 Lancet article found that not only did the dolls not prevent early pregnancy, but that those who had the active intervention were slightly more likely to become pregnant prior to age 20.
- **Ginkgo biloba does not protect against memory loss and dementia.** The supplement was widely used in ancient Chinese medicine and is still promoted as a way to preserve memory. However, a 2008 JAMA study found the supplement is not effective for this purpose.
- **To treat emergency room patients in acute pain, a single dose of oral opioids is no better than medications such as aspirin and ibuprofen.** This is based on a 2017 randomized trail published in JAMA.
- **Testosterone treatment does not help older men retain their memory.** Some early studies had hinted that middle-aged men with higher testosterone levels seemed to have better preserved tissue in some parts of their brains. Older men with higher testosterone levels also seemed to do better on tests of mental functioning. However, a study published in JAMA in 2017 refuted this belief.
- **Step counters and calorie trackers have not been shown to help you lose weight.** A 2016 JAMA article showed those using these devices did no better than those offered standard behavioral interventions.
- **Surgery may be no better than physical therapy for patients with a torn knee meniscus and osteoarthritis.** A 2013 NEJM article showed that outcomes were the same at 6 months for both groups. It should be noted, however, that 30% of the PT group had surgery performed within the 6-month follow-up timeframe.

As for why some physicians may be slow to de-implement ineffective practices yet quick to adopt therapies without a strong evidence base, the authors observe that it can be hard for physicians to keep up with the published literature because of time constraints.

My Comment:

This article is being highlighted because it has received so much popular press, including the New York Times article referenced below, and I appreciated the premise of it. At the same time, I must confess that the "healthy skeptic" in me approached this article with a large dose of such skepticism. Don't believe everything you read, including everything contained in this article! I had never heard of the open-access journal *eLife*, and the claims being made by the authors were ambitious to say the least.

Though I did not review all 396 claims of reversals, I did find concerns with their conclusions in 2 of the 10 highlighted in the NYT article. In one case (asthma minimizing home allergen), the study focused on mouse allergen, but the authors extended the conclusion to dust mites and cockroaches as well. In the other regarding premature rupture of membranes in pregnancy, they highlighted the positive neonatal outcomes but downplayed (as did the article) some adverse maternal outcomes.

So, my conclusion is that I'm intrigued but also concerned that the authors took the conclusions of all the articles they reviewed at face value rather than applying their own critical thinking skills (of which they are being critical of in others) to the articles in question. Perhaps this is a case of "when you wear 'medical reversal' glasses, every randomized trial looks like a breakthrough" enthusiasm gone a bit too far ...?

Having said that, over the years of Take 3 I've covered numerous articles that brought our present medical practice into question and/or were critical of the delay between research findings and the clinical adoption of them. Consider this article another installment (thought not a definitive one) in this ongoing conversation.

And remember, don't believe everything you believe ... or read ....

References:

- Herrera-Perez D, et al. Meta-Research: A comprehensive review of randomized clinical trials in three medical journals reveals 396 medical reversals. eLife 2019;8:e45183. June 11, 2019. Article
- Kolata G. 10 Findings That Contradict Medical Wisdom. Doctors, Take Note. New York Times. July 1, 2019. Article

Feel free to forward Take 3 to your colleagues. Glad to add them to the distribution list.

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