POEMs

Patient-Oriented Evidence That Matters

Mailing gFOBT or FIT Directly to Patients Increases Uptake of Colorectal Cancer Screening

Clinical Question

Does mailing a fecal occult blood test to patients improve screening rates compared with usual care?

Bottom Line

Mailed outreach significantly increases rates of colorectal cancer screening, with four tests needing to be mailed to screen one person. Other countries take this approach, with screening managed by the public health service rather than relying on physician or patient memory and motivation. Health systems in the United States should adopt this approach and insurers should support these efforts. (Level of Evidence = 1a)

Synopsis

Mailed outreach includes mailing of a fecal occult blood test to patients and asking them to provide a sample and mail it back. The goal is to improve adherence to colorectal cancer screening, which is approximately 62% in the United States, by reducing barriers. This meta-analysis identified U.S. studies that randomized patients to one of four groups: (1) mailed outreach using a guaiac-based fecal occult blood test (gFOBT), (2) mailed outreach using a fecal immunochemical test (FIT), (3) mailed outreach using a combined FIT and multitarget DNA test, or (4) usual care based on opportunistic office-based screening. After a thorough search, the authors identified seven studies: four used gFOBT and three used FIT; three of the studies included a telephone reminder. The studies were judged to be at low (n = 3) or moderate (n = 4) risk of bias. The authors found a 28% absolute increase in screening rates, which did not differ for FIT vs. gFOBT or for telephone reminder vs. no telephone reminder. Although the authors describe moderate heterogeneity based on the I^2 statistic, this is misleading with so few studies. Visual inspection of the forest plot shows good homogeneity among studies, with all CIs but one overlapping.

Study design: Meta-analysis (randomized controlled trials)

Funding source: Self-funded or unfunded

Setting: Population-based

Reference: *Jager M, Demb J, Asghar A, et al. Mailed outreach is superior to usual care alone for colorectal cancer screening in the USA: a systematic review and meta-analysis.* Dig Dis Sci. *2019;64(9): 2489-2496.*

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Increasing the D-Dimer Threshold for Patients with Low Clinical Pretest Probability Effectively Rules Out PE

Clinical Question

Can differing thresholds of D-dimer testing be used for patients with a low to moderate clinical pretest probability to rule out pulmonary embolism (PE)?

Bottom Line

The Pulmonary Embolism Graduated D-Dimer strategy increases the number of patients in the emergency department and outpatient setting who have PE ruled out via D-dimer testing, thus decreasing the need for chest imaging. The benefit is mostly seen by ruling out PE in patients with low clinical pretest probability and a D-dimer level of 500 ng per mL to 999 ng per mL. Patients with a moderate clinical pretest probability and a D-dimer level of less than 500 ng per mL can

also be ruled out; however, this subset represented only 2% of the study population. (Level of Evidence = 2b)

Synopsis

Clinical pretest probability in conjunction with D-dimer testing can be a useful strategy for ruling out PE. Patients with low clinical pretest probability and a D-dimer value of less than 500 ng per mL are considered to be ruled out for PE. This study investigates whether a higher D-dimer cutoff value of less than 1,000 ng per mL in patients with low clinical pretest probability and the usual cutoff value of less than 500 ng per mL in patients with moderate clinical pretest probability can also effectively rule out PE. The investigators enrolled 2,056 patients primarily from emergency departments and outpatient clinics who had symptoms or signs suggestive of PE. The Wells Clinical Prediction Rule was applied to determine a patient's pretest probability of PE.

Using the Pulmonary Embolism Graduated D-Dimer strategy, patients with a low clinical pretest probability and a D-dimer level of less than 1,000 ng per mL or those with a moderate clinical pretest probability and D-dimer level of less than 500 ng per mL did not undergo further diagnostic testing for PE and did not receive anticoagulant therapy. All other patients underwent computed tomography pulmonary angiography or ventilation-perfusion lung scanning and received anticoagulant therapy if a PE was discovered. Patients were assessed at 90 days via telephone or a clinic visit for evidence of venous thromboembolism (VTE).

After excluding 39 enrolled patients who did not meet eligibility criteria, 2,017 patients were analyzed. Their mean age was 52 years, two-thirds were women, 86.9% had a low clinical pretest probability, 10.8% had a moderate clinical pretest probability, and 2.3% had a high clinical pretest probability. Of the 1,325 patients with a low or moderate clinical pretest probability and a negative D-dimer test result, including the subset of 315 patients with a low clinical pretest probability and a D-dimer level of 500 ng per mL to 999 ng per mL, none had VTE at 90-day follow-up. None of the 40 patients who had a moderate clinical pretest probability and D-dimer level of less than 500 ng per mL had evidence of VTE at follow-up. Increasing the D-dimer threshold to less than 1,000 ng per mL for ruling out PE in patients with a low clinical pretest probability decreased the need for chest imaging from 51.9% to 34.3%. D-dimer testing increased from 86.9% to 97.7% by testing patients with a moderate clinical pretest probability.

Study design: Diagnostic test evaluation

Funding source: Government

Allocation: Uncertain

Setting: Emergency department

Reference: *Kearon C, de Wit K, Parpia S, et al.; PEGeD Study Investigators. Diagnosis of pulmonary embolism with D-dimer adjusted to clinical probability.* N Engl J Med. *2019;381(22):2125-2134.*

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No Cow's Milk Formula for the First Three Days of Life Prevents Food Allergies

Clinical Question

Does cow's milk formula cause more frequent food allergies in newborns at increased risk of atopy?

Bottom Line

In infants at increased risk of atopy, restricting cow's milk supplementation for the first three days of life is associated with a significantly lower risk of developing a cow's milk allergy or food allergies by 24 months of age. (Level of Evidence = 2b)

Synopsis

The study, which took place at a university hospital in Japan, included breastfed newborns at increased risk of atopy (i.e., having a father, mother, or siblings with current or past atopic diseases such as asthma). The newborns were randomized to receive supplementation (if desired) with an amino acid–based elemental formula for at least the first three days of life (n = 156) or with cow's milk formula (n = 156) from the first day of life. When the infants were 24 months of age, the researchers evaluated serum levels of immunoglobulin E (IgE) in response to cow's milk and other specific foods using intention-to-treat analysis. They had follow-up data on all but 10 of the children. Some infants (17%) initially restricted from cow's milk developed an elevated IgE to the cow's milk compared with

32% of the control infants (number needed to treat [NNT] = 7; 95% CI, 5 to 21). Clinical food allergies (2.6% vs. 13.2%; NNT = 10; 95% CI, 6 to 23) and anaphylaxis (0.7% vs. 8.6%; NNT = 13; 95% CI, 8 to 31) were less frequent in the infants initially restricted from cow's milk supplements. The rate of anaphylaxis in the control infants seems higher than expected. Restricting cow's milk supplementation for the first three days of life is a relatively simple and inexpensive intervention. The study's applicability to other populations may be limited.

Study design: Randomized controlled trial (nonblinded)

Funding source: Government

Allocation: Concealed

Setting: Inpatient (any location) with outpatient follow-up

Reference: *Urashima M, Mezawa H, Okuyama M, et al. Primary prevention of cow's milk sensitization and food allergy by avoiding supplementation with cow's milk formula at birth: a randomized clinical trial.* JAMA Pediatr. *2019;173(12):1137-1145.*

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Mind-Body Treatments Enhance Opioid Treatment of Patients with Acute or Chronic Pain

Clinical Question

Are mind-body therapies, including meditation, hypnosis, and relaxation, effective for decreasing pain or affecting opioid use in patients with acute or chronic pain?

Bottom Line

Using mindfulness, meditation, hypnosis, therapeutic suggestion, and cognitive behavior therapy, in addition to opioid treatment of acute or chronic pain, provides an additional benefit to patients by reducing pain scores. Some of these interventions will decrease the duration or amount of opioid needed. (Level of Evidence = 1a)

Synopsis

To assemble randomized controlled trials to combine for this meta-analysis, the researchers searched six databases, including the Cochrane Library, for English-language articles on mind-body therapies. They also searched bibliographies of retrieved articles and the websites of the Agency for Health Care Quality and Research, American Psychological Association, and the World Health Organization. Two authors independently selected studies for inclusion, extracted the data, and assessed the risk of bias. They identified 60 studies of 6,404 participants that evaluated mind-body approaches on procedural pain, burn pain, cancer pain, and chronic pain. Most studies were at low risk of bias because of their designs. Pain intensity was reduced by a moderate to large amount with meditation (mindfulness), hypnosis, therapeutic suggestion (suggestions to change thoughts, emotions, or sensations without inducing hypnosis), and cognitive behavior therapy. Meditation, cognitive behavior therapy, and hypnosis also decreased opioid-related outcomes such as opioid misuse, opioid craving, and time to opioid cessation (acute pain). There was a high degree of heterogeneity among the studies regarding the size of the effect. Studies that did not show benefit of meditation and therapeutic suggestion may not have been published (i.e., publication bias may have occurred, amplifying the actual benefit of these approaches).

Study design: Meta-analysis (randomized controlled trials)

Funding source: Government

Setting: Various (meta-analysis)

Reference: *Garland EL, Brintz CE, Hanley AW, et al. Mind-body therapies for opioid-treated pain: a systematic review and meta-analysis.* JAMA Intern Med.*2020;180(1):91-105.*

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