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This series is coordinated by Sumi Sexton, MD, Associate Deputy Editor.

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CA 125 Relatively Specific for Diagnosing Endometriosis

Clinical Question

Is serum cancer antigen (CA) 125 an accurate noninvasive test for diagnosing endometriosis in symptomatic women?

Bottom Line

For women with symptoms suggestive of endometriosis, serum CA 125 is a relatively specific (93%) and noninvasive test. It can be used to make a presumptive diagnosis in cases for which a medical management approach is being considered without having to perform a (diagnostic standard) laparoscopic procedure to confirm. At minimum, pelvic ultrasonography to assess for other conditions (ovarian cancer or uterine fibroids) that can raise CA 125 levels is needed. CA 125 is not a sensitive test for endometriosis (52%), and therefore not helpful in ruling out the disease. Approximately one-half of the women with histologically proven endometriosis have normal CA 125 levels. (Level of Evidence = 1a-)

Synopsis

This is a well-designed meta-analysis of 22 observational studies (16 cohort and six case-control; N = 3,626 women) to assess the accuracy of CA 125 as a noninvasive diagnostic test for endometriosis. The standard for diagnosis of endometriosis is histological, requiring an invasive procedure. The authors calculated pooled sensitivity, specificity, positive likelihood ratio, and negative

likelihood ratio. They considered different cutoff values for CA 125 results and performed multiple other subgroup analyses, including disease stage (1 and 2 vs. 3 and 4). Quantitative meta-analysis included 14 studies (n = 2,920 women) using a cutoff of at least 30 units per mL as a positive result. The pooled sensitivity was 52% (95% confidence interval [CI], 38% to 66%) and pooled specificity was 93% (95% CI, 89% to 95%). Although CA 125 showed higher sensitivity 63% (95% CI, 42% to 77%) when disease severity was limited to advanced disease, it was still not enough to recommend using the test to rule out disease.

Study design: Meta-analysis (other)

Funding source: Self-funded or unfunded

Setting: Various (meta-analysis)

Reference: Hirsch M, Duffy J, Davis CJ, Nieves Plana M, Khan KS; International Collaboration to Harmonise Outcomes and Measures for Endometriosis. Diagnostic accuracy of cancer antigen 125 for endometriosis: a systematic review and meta-analysis. *BJOG*. 2016;123(11):1761-1768.

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Chocolate Consumption May Make Acne Vulgaris Worse

Clinical Question

Does eating chocolate really cause more pimples?

Bottom Line

This study found a statistically significant increase in facial acne lesions among college students 48 hours after ingesting chocolate instead of jelly beans (average compared with baseline: 4.8 new lesions vs. 0.7 fewer lesions, respectively). (Level of Evidence = 1b-)

Synopsis

These investigators enrolled 54 consenting college students with acne vulgaris who agreed to abstain completely from chocolate consumption for the duration of the study. No information is provided on the baseline severity of acne, but each participant provided a prestudy facial photo to allow lesion counting. Study participants randomly received (uncertain allocation concealment) a standard size Hershey's milk chocolate bar or 15 Jelly Belly jelly beans to provide an equal amount of glycemic

load to each intervention group. Acne changes were assessed by a second facial photographic review 48 hours later by a dermatologist masked to intervention group assignment. After a four-week washout period, study participants received the opposite intervention from what they had in the first phase of the study (crossover design) and again had a facial photographic assessment performed before and 48 hours after the intervention.

No statistically significant group differences were noted in the number of acne lesions at baseline in both study phases. After each intervention, however, the chocolate consumption group had a statistically significant increase in acne lesions compared with the jelly bean group (+4.8 vs. -0.7 lesions, respectively).

Study design: Crossover trial (randomized)

Funding source: Self-funded or unfunded

Allocation: Uncertain

Setting: Outpatient (any)

Reference: Delost GR, Delost ME, Lloyd J. The impact of chocolate consumption on acne vulgaris in college students: a randomized crossover study. *J Am Acad Dermatol.* 2016;75(1):220-221.

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In Patients with Vascular Disease, Treating Sleep Apnea Does Not Reduce the Risk of Cardiovascular Events

Clinical Question

Does the use of continuous positive airway pressure (CPAP) reduce the likelihood of cardiovascular events?

Bottom Line

Compared with usual care, the use of CPAP provides a modest improvement in daytime sleepiness, but does not reduce the likelihood of cardiovascular events, even in a high-risk population. (Level of Evidence = 1b)

Synopsis

Because patients with moderate to severe obstructive sleep apnea have frequent episodes of hypoxia, is it possible that those episodes can trigger cardiovascular events? This physiologically plausible hypothesis has been widely considered, and observational studies have provided it with some support, but it has never been tested in a clinical trial. These investigators, mostly from Australia and China, recruited patients 45 to 75 years of age with known coronary artery or cerebrovascular disease and moderate to severe obstructive sleep apnea.

The latter was defined as at least 12 drops per hour in the oxygen saturation of at least 4%. Patients with severe daytime sleepiness, very severe hypoxemia, or Cheyne-Stokes respirations were excluded. Although patients knew whether they were using CPAP, outcomes were adjudicated by masked outcome assessors.

The mean age of the 2,687 participants was 61 years, most were men, and the mean body mass index was 29 kg per m². They were randomized to use CPAP or to continue usual care. At the end of follow-up (mean = 3.7 years), there was no difference between groups in the composite outcome of cardiovascular death, myocardial infarction, stroke, acute coronary syndrome, hospitalization for heart failure, or transient ischemic attack (17.0% for the CPAP group, 15.4% for the usual care group; *P* = .34). There was no significant difference in any of the individual outcomes. The CPAP group had greater reductions in sleepiness than the usual care group, approximately 2.5 points on the 24-point Epworth Sleepiness Scale, which is of marginal clinical significance.

Study design: Randomized controlled trial (single-blinded)

Funding source: Industry plus government

Allocation: Concealed

Setting: Outpatient (any)

Reference: McEvoy RD, Antic NA, Heeley E, et al.; SAVE Investigators and Coordinators. CPAP for prevention of cardiovascular events in obstructive sleep apnea. *N Engl J Med.* 2016;375(10):919-931.

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Tamsulosin Beneficial for Passage of 5- to 10-mm Distal Ureteral Stones

Clinical Question

Is tamsulosin (Flomax) effective in promoting stone passage in patients with distal ureteral stones?

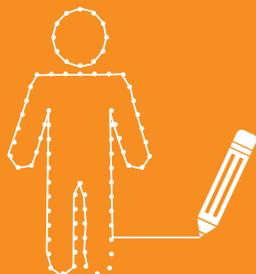
Bottom Line

Tamsulosin promotes stone passage of distal ureteral stones that are 5 to 10 mm in size. You would need to treat five such patients to get one stone passage. Smaller stones tend to pass on their own at a rate of 86% in this study. (Level of Evidence = 1a)

Synopsis

The benefit of tamsulosin for the passage of ureteral stones 10 mm or smaller is uncertain given the conflicting ►

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results in recent randomized controlled trials. In this study, investigators searched Medline, Embase, and Central databases, reviewed bibliographies of identified studies, and consulted with experts to find randomized double-blind, placebo-controlled trials that evaluated the effectiveness of tamsulosin on the passage of ureteral stones that were 10 mm or smaller. Two reviewers independently selected studies, abstracted data, and performed a quality assessment. Eight studies with 1,384 participants were included in the meta-analysis, and all were considered at low risk of bias. Overall, seven of the eight studies enrolled only patients with distal ureteral stones. Tamsulosin, 0.4 mg per day, was used in all eight studies, most commonly for 28 days. The outcome of interest was stone passage, defined in seven studies as the absence of the stone on imaging and in one study as the absence of urologic intervention.

Tamsulosin led to increased stone passage (85% vs. 66%; risk difference = 17%; 95% confidence interval, 6% to 27%), but there was significant heterogeneity in these results, likely because of differences in outcomes based on stone size. Preplanned subgroup analyses showed that tamsulosin was more effective than placebo for 5- to 10-mm distal stones (79% vs. 57%; risk difference = 22%; 95% confidence interval, 12% to 33%; number needed to treat = 5), but not for those smaller than 5 mm. Because smaller stones are likely to pass spontaneously, treatment would not necessarily add any benefit. Increases in adverse effects, specifically dizziness and orthostatic hypotension, were not seen in the tamsulosin cohort, although there was much heterogeneity in the incidence of dizziness among the eight trials. Finally, although there was evidence of publication bias, the authors did a thorough job of searching for possible unpublished reports and did not find any of high quality.

Study design: Meta-analysis (randomized controlled trials)

Funding source: Government

Allocation: Uncertain

Setting: Various (meta-analysis)

Reference: Wang RC, Smith-Bindman R, Whitaker E, et al. Effect of tamsulosin on stone passage for ureteral stones: a systematic review and meta-analysis [published ahead of print September 7, 2016]. *Ann Emerg Med*. [http://www.annemergmed.com/article/S0196-0644\(16\)30364-X/fulltext](http://www.annemergmed.com/article/S0196-0644(16)30364-X/fulltext). Accessed November 19, 2016.

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