Does cervical membrane stripping in women with group B *Streptococcus* put the fetus at risk?

**Evidence-based answer**

No direct evidence points to fetal harm from cervical membrane stripping (CMS) to induce labor in term pregnancies complicated by group B *Streptococcus* (GBS) colonization (strength of recommendation [SOR]: B, a Cochrane systematic review).

**Evidence summary**

A Cochrane review of 22 trials (N=2,797) comparing CMS with no CMS in uncomplicated term deliveries demonstrated no significant differences in fetal outcomes. The groups showed similar rates of maternal infection and fever (relative risk [RR]=1.05; 95% confidence interval [CI], 0.68–1.65), neonatal infection (RR=0.92; 95% CI, 0.30–2.82), and Apgar scores <7 at 5 minutes (RR=1.13; 95% CI, 0.53–2.43). Two perinatal deaths were reported in each group. The review was limited by relatively small trials and heterogeneity between trial results, suggesting the possibility of publication bias.

Most of the studies included in the meta-analysis did not specifically include or exclude women with GBS colonization, nor did the review subanalyze patients into a GBS-positive and GBS-negative arm. Considering that GBS colonization was reported in 19% to 26% of pregnancies, it is likely that GBS colonization was present in both CMS and control groups in the review.

**Study shows no CMS effects, but may be underpowered**

A randomized prospective study (N=98) included in the Cochrane review specifically considered the effects of CMS and maternal GBS colonization. Colonization rates for the study were 17% (9/44 in the study group, 8/54 in the control group). Women in the study group underwent weekly CMS beginning at 38 weeks of gestation; the control group did not undergo CMS. Repeat GBS testing was performed at 40 weeks for all patients with initial GBS-negative cultures.
Three patients were GBS-positive on repeat testing (1 in the study group, 2 in the control group). No admissions to the neonatal intensive care unit or neonatal infections occurred in either group. The study may have been underpowered to detect any effect, however.4

**Recommendations**

The American College of Obstetricians and Gynecologists’ 2009 Practice Bulletin on induction of labor states that the data are insufficient to either recommend or discourage CMS to induce labor in women who are GBS-positive.5

The 2009 Veteran’s Administration/Department of Defense Clinical Practice Guidelines for Pregnancy Management also cite insufficient data to support or oppose CMS in GBS-positive term pregnant women.6

**REFERENCES**


**FIGURE**

Sample algorithm for management of a newborn whose mother received intrapartum antimicrobial agents for prevention of early-onset group B streptococcal disease or suspected chorioamnionitis

- **Maternal IAP for GBS?**
  - Yes
  - No

- **Maternal antibiotics for suspected chorioamnionitis?**
  - Yes
  - No

- **Signs of neonatal sepsis?**
  - Yes
  - No

- **Full diagnostic evaluation**
  - Yes
  - No

- **Gestational age <35 weeks?**
  - Yes
  - No

- **Limited evaluation**
  - Yes
  - No

- **Duration of IAP before delivery <4 hours?**
  - Yes
  - No

- **No evaluation**
  - No therapy
  - Observe ≥48 hours

This algorithm is not an exclusive course of management. Variations that incorporate individual circumstances or institutional preferences may be appropriate.

GBS = group B Streptococcus; IAP = intrapartum antibiotic prophylaxis.

- If no maternal intrapartum prophylaxis for GBS was administered despite an indication being present, data are insufficient on which to recommend a single management strategy.
- Includes complete blood cell count (CBC) and differential, blood culture, and chest radiograph if respiratory abnormalities are present. When signs of sepsis are present, a lumbar puncture, if feasible, should be performed.
- Duration of therapy varies depending on results of blood culture, cerebrospinal fluid findings, if obtained, and the clinical course of the infant. If laboratory results and clinical course do not indicate bacterial infection, duration may be as short as 48 hours.
- CBC with differential and blood culture.

- Applies only to penicillin, ampicillin, or cefazolin and assumes recommended dosing regimens (see http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5111a1.htm, Box 2).
- A healthy-appearing infant who was ≥38 weeks’ gestation at delivery and whose mother received ≥4 hours of intrapartum prophylaxis before delivery may be discharged home after 24 hours if other discharge criteria have been met and a person able to comply fully with instructions for home observation will be present. If any one of these conditions is not met, the infant should be observed in the hospital for at least 48 hours and until criteria for discharge are achieved.

Dear EBP Readers,

I have been to 3 big medical conferences recently, and they are starting to look eerily similar. There is the obligatory burning of vast quantities of fossil fuels to get there. The hotel then ironically asks if I would like to “go green” by using the same damp towel every night. The next morning, I go down to breakfast wearing a sweater to counteract the giant air conditioners circulating *Legionella*. I head straight for the hotplates piled high with scrambled eggs and bacon.

Duly fortified, I wander into a large sensory deprivation chamber with 500 to 2,500 others. In the opening remarks, I am reminded to visit the sponsors’ booths and attend the reception later in the poster area. As I start to drift off, someone famous—famous mainly for having the podium last year, too—starts the plenary, discloses support from half a dozen pharmaceutical companies, and launches into a 90-minute talk about what we should do in our practices.

Oh, why do we do this to ourselves? Is it because we enjoy hanging out with famous people? Is it because our spouses won’t let us eat bacon at home?

One famous gadfly of evidence-based medicine, John Ioannidis, thinks it’s about time we actually proved conferences “disseminate and advance research [and] train, educate, and set evidence-based policy.”

It’s easy to spot the forces working against this idea. Conference sponsors push their agendas into the learning environment. Those rows of shiny poster-abstracts are not fleshed out, published reports. Prominence at the podium may be due to skill in power circles rather than skill and creativity as a researcher or clinician.

Ioannidis’ concept of a dream conference is a satellite symposium that deals with how to appropriately use interventions that are “inexpensive, well tested, and safe.” He would exclude from the organizing committee anyone with ties to industry in the last 3 years. He admits he doesn’t know if this would be better than what we currently do, but thinks it would be worth studying.

I fully agree. Just one question though, Dr. Ioannidis. Does that dream conference include bacon for breakfast?

Regards,
Jon O. Neher, MD

Use high-sensitivity cardiac troponin for one-hour rule-in or rule-out of myocardial infarction


This study developed and validated an algorithm using high-sensitivity cardiac troponin T assay (hs-cTnT) in the emergency room to rule in or rule out acute myocardial infarction (AMI) in 1 hour. There were 872 patients who presented with symptoms suggestive of AMI with onset or peak of symptoms within 12 hours and who had hs-cTnT levels drawn at presentation and 1 hour later.

After reviewing the values collected on half the patients, investigators developed an algorithm that “ruled out” an AMI when the initial hs-cTnT was less than 12 and change in the level within 1 hour was less than 3. An AMI was “ruled in” when the hs-cTnT was 52 or higher at baseline and there was an absolute change of 5 or more. The algorithm was then validated in the other half the patients.

The algorithm identified 259 patients (60%) as not having an AMI. In this group, no AMIs were missed (sensitivity 100%). For the rule-in diagnosis, 64 of 72 patients (89%) with AMI were ruled in after 1 hour, with a specificity of 97% and a positive predictive value of 84%. There were 101 “indeterminant” results. These patients received prolonged observation; ultimately, 8 (8%) were diagnosed with AMI.

Bottom line: The hs-cTnT is useful in safely ruling out myocardial infarction among patients presenting with acute chest pain. The availability of this test is uncertain. Furthermore, validation in a more diverse population and different settings is needed before this practice can be widely recommended.

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Additional information can be found at: www.fpin.org/purlsoverview

Probiotics for antibiotic-associated diarrhea


This systematic review addressed the question of whether probiotics are effective for the prevention or treatment of antibiotic-associated diarrhea (AAD). Eighty-two randomized controlled trials that met inclusion criteria were identified, encompassing a wide range of probiotics (including Lactobacillus, Bifidobacterium, and Saccharomyces). Similarly, these studies encompassed a wide range of antibiotics responsible for diarrhea.

Data from 63 RCTs, including 11,811 patients, were pooled to identify the relative risk of AAD among patients who received probiotics compared with patients who did not (some trials were placebo-controlled, some were not).

The pooled relative risk for AAD was 0.58 (95% CI 0.50–0.68, P < .001). The authors estimated that 13 patients would need to be treated with probiotics (compared with no treatment) to prevent 1 episode of AAD.

The overall quality of the trials was poor. Subgroup and sensitivity analyses were conducted to address the large heterogeneity in the studies (ie, different probiotics used and different antibiotics used) and the poor study quality, and all of these analyses obtained results consistent with the overall pooled relative risk.

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Bottom line: Probiotics appear effective in preventing and treating AAD. The results of this meta-analysis are consistent with earlier meta-analyses. The large heterogeneity and poor quality is concerning; however, the authors did try to account for these problems through subgroup and sensitivity analyses, which supported their initial conclusion.

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Should all inpatients be screened for tuberculosis?

**Bottom line**

Current guidelines do not recommend routine screening of all hospital inpatients. Household contacts over 5 years of age and other close contacts in workplace or school of a patient with active tuberculosis (TB) should be screened. Patients with a prolonged cough in highly endemic areas should be screened (SOR: C, consensus guideline).

**Review of the evidence**

In 2011, there were an estimated 8.7 million incident cases of TB globally. A total of 10,528 cases of TB were reported in the United States in 2011, based on statistics from the Centers for Disease Control and Prevention (CDC). This translates to 3.4 cases per 100,000 people.

In a 2011 revision of a 2006 tuberculosis guideline produced by National Collaborting Centre for Chronic Conditions, Mantoux testing is recommended to diagnose latent TB in people who are (1) household contacts (aged 5 years and older) of all people with active TB or (2) nonhousehold contacts (other close contacts, for example, in workplaces and schools). No mention was made regarding routine screening of all hospitalized patients.

In a retrospective data-analysis performed in a Taiwan hospital, the effect of a cough officer screening (COS) program was evaluated. The study, conducted in 2 stages, included a total of 31,159 patients who had a cough for longer than 5 days. Forty-five percent (n=14,219) of patients identified in initial screening performed by a “cough officer” (specially trained nurse) were subsequently examined by a physician. An additional 54 patients with active TB were identified using their protocol. This COS system had relatively high sensitivity and specificity with a negative predictive value of nearly 100% (99.98%), but a very low positive predictive value (~1%).

**Recommendations**

The most recent CDC guidelines for TB screening are from 2005 and recommend targeted testing. The **figure** shows a modified version of the sample TB risk assessment tool from the CDC. Patients with “yes” responses to any of these questions should be screened for TB.

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**REFERENCES**

What is the prognosis for various degrees of scoliosis in adolescents?

Evidence-Based Answer

Idiopathic scoliosis that develops in adolescents is not associated with increased mortality. Although there may be decreased body satisfaction, adolescent scoliosis is not associated with increased shortness of breath, severe back pain, or interference with activities of daily living (SOR: B, cohort studies).

Late-onset idiopathic scoliosis (LIS) is the curvature of the spine that occurs in otherwise healthy children at the time of puberty. A prospective natural history study with a 50-year follow-up compared 117 untreated scoliotic patients with 62 age- and sex-matched volunteers on a variety of outcomes.\(^1\) The estimated probability of survival to age 65 was 0.55 (95% CI, 0.47–0.63), which was not different from the general population (0.57). There was no significant difference in reported shortness of breath during everyday activities between LIS patients and controls (22% vs 15%; no \(P\) value reported). Significantly more LIS patients reported chronic back pain compared with controls (61% vs 35%; \(P=0.003\)). However, of those with pain, 68% of LIS patients and 71% of controls patients reported only little or moderate back pain (\(P>0.99\)). LIS patients scored significantly lower on the Body Satisfaction Scale (scale of 1–6), with a mean score of 3.6, compared with the control group’s mean score of 4.2 (\(P=0.001\)). There was no significant difference in the capacity scores or Self-Rating Depression Scale scores.

In a Swedish prospective study of untreated scoliosis in 115 patients (80 women) with a mean follow-up of 56 years, mortality and cause of death were compared between the patients and the general population.\(^2\) Patients were subgrouped for the cause and age of onset of scoliosis. In the group that developed scoliosis in adolescence (N=52), no difference was noted in mortality compared with the general population (data provided on graph, no \(P\) value provided). No deaths from respiratory failure were reported in patients with adolescent scoliosis of unknown etiology.

In a retrospective survey of 800 patients (age >25 years) with scoliosis attending a chest clinic, 131 patients with unfused idiopathic scoliosis were identified.\(^3\) Of the 131, 16 men and 38 women age 30 years and older with dyspnea were chosen for review. No causes of dyspnea could be found other than the scoliosis in 30% (16 of 54) of the patients. In patients with unfused idiopathic scoliosis of adolescent onset (N=28), only 1 developed disabling dyspnea in later life, attributable solely to the spinal deformity. Disabling dyspnea or respiratory failure was associated with either independent cardiac or pulmonary disease or scoliosis of early onset (curve first noticed before 5 years of age).

Nineteen patients attending this clinic within the last 25 years with unfused idiopathic scoliosis were known to have died. Cardiorespiratory failure attributable to the scoliosis was the cause of death of 11 (58%) of these patients. In 10 of the 11 patients, the curve had first been noticed at younger than 5 years of age. The onset of the curve was noticed during early adolescence (11 years) in only 1 patient.

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Does calcium with vitamin D prevent postmenopausal fractures?

Evidence-Based Answer

Calcium supplementation is associated with a reduced incidence of osteoporotic fractures in older postmenopausal women. Calcium doses of 1,200 mg and 80% or higher compliance increase the benefit. Vitamin D does not add to the benefit over calcium alone and increases the risk of hypercalcemia, renal calculi, and renal insufficiency (SOR: A, meta-analyses).

A meta-analysis of 29 randomized trials (N=63,897 patients age ≥50 years; 73% women) compared calcium (500–1,600 mg/d) or calcium (500–1,200 mg/d) plus vitamin D (200–800 IU/d) with placebo for preventing fractures.\(^1\) Calcium with or without vitamin D produced a 12% reduction (17 trials, N=52,625; RR 0.88; 95% CI, 0.83–0.95) in all fractures compared with placebo. Compliance rates of 80% or more were associated with a 24% reduction (8 trials, N=4508; RR 0.76; 95% CI, 0.67–0.86) in all fractures compared with placebo.
There was no difference in relative risk in all fractures between calcium alone compared with calcium with vitamin D. For all fractures, regardless of vitamin D, calcium dose greater than 1,200 mg/d compared with placebo was superior to doses less than 1,200 mg/d compared with placebo (17 trials, N=52,625; RR 0.8; 95% CI, 0.72–0.89 vs RR 0.94; 95% CI, 0.89–0.99; P=0.006 for higher dose vs lower dose).

There was no significant benefit of calcium with or without vitamin D compared with placebo on preventing fractures for ages 50–69 (n=36,640; RR 0.97; 95% CI, 0.97–1.0), but there was a benefit for ages 70–79 (N=12,481; RR 0.89; 95% CI, 0.82–0.96) and older than 80 (N=3504; RR 0.76; 95% CI, 0.67–0.87). There was also greater benefit of calcium with or without vitamin D compared with placebo in institutionalized patients compared with those dwelling in the community (RR 0.76; 95% CI, 0.66–0.88 vs RR 0.94; 95% CI, 0.9–0.99; P=0.003 between the 2 groups).1

A meta-analysis of 9 RCTs included 53,260 postmenopausal women (92%) and men older than 50, and focused specifically on the effect of vitamin D on hip fractures.2 Vitamin D (400–800 IU/d) alone compared with placebo or no treatment did not alter the rate of hip fractures (4 trials, N=9,083; RR 1.1; 95% CI, 0.89–1.4). Calcium 500 to 1,200 mg/d with vitamin D (400–800 IU/d) reduced the risk of hip fracture (6 trials, N=45,509; RR 0.82; 95% CI, 0.71–0.94; NNT=276 over 24–84 months) compared with placebo or no treatment.

A meta-analysis evaluated 45 randomized trials (N=84,585, 15.5% men ≥65 years, all women postmenopausal) to determine if vitamin D with or without calcium prevents fractures in older patients.3 Vitamin D 300 to 1,000 IU/d with calcium 500 to 1,200 mg/d reduced hip fractures (8 trials, N=46,658; RR 0.84; 95% CI, 0.73–0.96) but did not prevent vertebral fractures (RR 0.91; 95% CI, 0.75–1.1) compared with placebo or no treatment. Vitamin D alone compared with placebo or no treatment was ineffective in preventing hip (9 trials, N=24,729; RR 1.2; 95% CI, 0.99–1.3), vertebral (5 trials, N=9,138; RR 0.90; 95% CI, 0.42–1.9), or any new fracture (10 trials, N=25,016; RR 1.0; 95% CI, 0.93–1.1). Vitamin D compared with placebo or any dose of calcium alone increased the risk of hypercalcemia (18 trials, N=11,346; RR 2.4; 95% CI, 1.6–3.5). Vitamin D with or without calcium compared with placebo or no treatment increased the risk of renal calculi or insufficiency (11 trials, N=46,357; RR 1.2; 95% CI, 1.0–1.3).

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Evidence-Based Answer
Stress management techniques are beneficial in reducing depression and anxiety in patients with heart disease, but not overall mortality (SOR: A, systematic review of RCT). Music therapy lowers heart rate, respiratory rate, and blood pressure (SOR: C, disease-oriented outcomes).

A 2011 Cochrane review (24 RCTs, N=9,220) examined the effects of psychological interventions to (1) reduce stress, anxiety, and depression; (2) improve disease adjustment; and/or (3) improve or change cardiac risk in patients with coronary artery disease.4 Most of the participants were men (74%), with a mean age of 56 years.

Although the interventions varied (ie, relaxation, emotional support, cognitive restructuring), patients receiving interventions had significant reductions in depression scores (12 trials, N=5,041; standard mean difference [SMD] −0.21; 95% CI, −0.35 to −0.08) and anxiety scores (8 trials, N=2,771; SMD −0.25; 95% CI, −0.48 to −0.03) when compared with usual care. There were no reductions in all-cause mortality (17 trials, N=6,852; RR 0.89; 95% CI, 0.75–1.05), cardiac deaths (5 trials, N=3,893; RR 0.80; 95% CI, 0.64–1.0), rates of revascularization (12 trials, N=6,670; RR 0.82; 95% CI, 0.71–0.94; NNT=276 over 24–84 months) compared with placebo or no treatment.

A 2009 Cochrane review (23 RCTs, N=1,461) examined the ability of listening to music to reduce stress, anxiety, and physiological responses in myocardial and cardiac patients and patients undergoing cardiac surgery...
Participants (67% male, mean age 63 years) were randomized to either a music intervention with usual cardiac care or usual care alone. Patients receiving music therapy had improvements in heart rate (14 trials, N=948; mean difference [MD] –3.9 beats/min; 95% CI, –6.8 to –1.0), systolic blood pressure (12 studies, N=900; MD –5.3 mmHg; 95% CI, –7.2 to –3.5), diastolic blood pressure (9 studies, N=630; MD –1.5 mmHg; 95% CI, –3.2 to –0.09), and respiratory rate (5 trials, N=324; MD –3.1 breaths/min; 95% CI, –4.5 to –1.6). Music therapy also improved anxiety scores (12 trials, N=697; SMD –0.49; 95% CI, –0.83 to –0.15) but not depression scores (4 studies, N=172; SMD –0.12; 95% CI, –0.42 to 0.18).

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Does use of hydrochlorothiazide (HCTZ) increase the risk of gout?

Evidence-Based Answer
Probably. Thiazide diuretics (at a dose of more than the equivalent of 25 mg/d HCTZ) are associated with the initiation of anti-gout therapy in older subjects (SOR: B, cohort study). Use of thiazide diuretics significantly increases risk of recurrent gout attacks in people with preexisting gout (SOR: C, case-control study). HCTZ combined with triamterene increases the risk of gouty arthritis in older people, particularly those with elevated baseline uric acid and creatinine levels (SOR: B, RCT).

A 1997 retrospective cohort study (n=9,249) evaluated initiation of anti-gout therapy (allopurinol, colchicine, or a uricosuric) in subjects older than 65 years taking various antihypertensive treatments.¹ Antihypertensive treatments were categorized into thiazide diuretic alone, nonthiazide antihypertensive, combination of thiazide and nonthiazide antihypertensive, and no antihypertensive therapy.

When compared with no antihypertensive therapy, the adjusted relative risk for initiation of anti-gout therapy was 1 (95% CI, 0.7–1.5) for subjects taking nonthiazide antihypertensive therapy alone, 2 (95% CI, 1.2–3.3) for thiazide diuretic therapy, and 2.3 (95% CI, 1.6–3.4) for combination thiazide diuretic therapy with any nonthiazide agent(s). Risk for anti-gout therapy initiation increased significantly for HCTZ-equivalent doses of 25–49 mg/d (RR 2.4; 95% CI, 1.3–4.4) and doses ≥50 mg/d (RR 2.4; 95% CI, 1.4–4.2) when compared with no antihypertensive exposure. The risk of anti-gout therapy initiation for equivalent doses <25 mg/d HCTZ was not statistically significant (RR 1.8; 95% CI, 0.7–4.8).²

A 2006 case-crossover study (n=197) evaluated subjects (80% men; 88% Caucasian; mean age 52 years) who had a gout attack in the previous year.² Daily diuretic use was assessed for the 2 days prior to an acute gout attack (hazard period) and on each day during the intercritical period (control period). Of the 197 subjects included in this study, 56 used at least one type of diuretic with 39 using only thiazide diuretics. After adjusting for alcohol consumption and purine intake, thiazide use over the prior 48 hours was associated with a statistically significant increase in risk for recurrent gout attacks when compared with control periods with no thiazide use (OR 3.2; 95% CI, 1.1–9.5).

One RCT (n=822) evaluated gouty arthritis occurrence in subjects (70% women) older than 60 years treated for 5 years with HCTZ 25 mg plus triamterene 50 mg or placebo.³ The rate difference of gout between subjects using HCTZ/triamterene (n=7) compared with placebo (n=1) was statistically significant (relative rate 4.3; 95% CI, 2.0–8.4). However, subjects developing gouty arthritis were predominantly men (88% vs 30%) with statistically significantly higher pretreatment serum uric acid (0.4 vs 0.3 mmol/L), baseline serum creatinine (112 vs 89 mmol/L), and posttreatment serum creatinine levels (137 vs 99 mmol/L) than subjects not developing gouty arthritis (P<.01 for all comparisons).

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What is the sensitivity and specificity of auscultation for detecting cardiac problems among adults?

Evidence-Based Answer
We do not know how well family physicians differentiate murmurs on auscultation. Cardiac auscultation by emergency room physicians can distinguish benign from pathologic systolic murmurs with a sensitivity of 82% and specificity of 69%. In evaluating patients for heart failure, the detection of an S3 has sensitivity of 50% by cardiology attendings, but poor interobserver agreement by less experienced physicians (SOR: B, diagnostic cohort studies with heterogeneous results).

A Swiss cohort study of 203 emergency department (ED) patients with systolic murmurs assessed the ability of auscultation by noncardiologist ED physicians to distinguish benign murmurs from murmurs due to valvular heart disease.1 Using the gold standard of transthoracic echocardiogram, the clinical exam had a sensitivity of 82% and a specificity of 69% to detect valvular heart disease (calculated positive likelihood ratio [LR+] 2.6, negative likelihood ratio [LR–] 0.26). A multivariate analysis suggested that age >50 years, murmurs graded ≥3, and abnormal electrocardiogram results were the strongest predictors of valvular disease. A systematic review identified 3 trials (1,192 patients) on the accuracy of cardiologists in classifying systolic murmurs as normal, possibly abnormal, or abnormal based on clinical exam with echo or catheterization as a gold standard.2 The LR+ for the cardiologists’ auscultation varied from 3.8 to infinity for a determination of abnormal murmur. The LR– ranged from 0.3 to 0 for normal murmur. The same review found 4 different studies examining the agreement between 2 cardiologist examiners in the diagnosis of systolic murmurs using live patients or audiotapes. Agreement between examiners was moderate to good, and varied between 54% and 97%.

A cohort of 98 patients undergoing left cardiac catheterization evaluated the accuracy of auscultating an S3 and the diagnosis of congestive heart failure.3 Examiners of varying levels listened to the heart for S3 prior to echocardiography and cardiac catheterization. For cardiology attendings, hearing an S3 had a sensitivity of 50% to detect an EF <50% and a specificity of 86% (LR+ 3.5, LR– 0.58). In the same study, an S3 auscultated by cardiology fellows or attendings had fair agreement with phonocardiographic findings, whereas auscultation by interns or residents had no significant agreement.

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2. Etchells E, et al. JAMA. 1997; 277(7):564–571. [LOE 2a]

What is the best treatment for trigger finger (stenosing tenosynovitis)?

Evidence-Based Answer
Injection with corticosteroid and lidocaine has a high success rate and low morbidity (SOR: B, a small meta-analysis). Surgical release appears to be more effective than corticosteroid injections for treatment of trigger finger; it is associated with increased pain at 1 month, although no difference by 6 months (SOR: B, single RCT). Physical therapy (with multiple modalities including ultrasound, massage, finger exercises, stretching, and wax therapy) is less effective than corticosteroid injection, but may have a role in prevention of recurrence of symptoms (SOR: B, single RCT). Splinting may reduce pain and severity of triggering (SOR: B, retrospective study).

A 2009 Cochrane review of 2 methodologically flawed RCTs with a total of 63 adult patients evaluated the effectiveness of an intrasheath corticosteroid plus lidocaine injection compared with lidocaine alone for the treatment of trigger finger.1 The corticosteroid used was 0.5 mL (20 mg) methylprednisolone in one of the RCTs and 1 mL (6 mg) betamethasone in the other. At 4 weeks, the corticosteroid group was significantly more likely to have complete resolution of symptoms warranting no further treatment (RR 3.2; 95% CI, 1.3–7.4; NNT=3). No adverse events were reported.

In a RCT (n=137 patients, 150 fingers) published since the Cochrane review, patients with untreated trigger finger of any severity, except Quinnell grade I, were randomly assigned to receive a 2-mL (80 mg)
intrathecal injection of methylprednisolone (n=49), a percutaneous surgical A1 pulley release (n=45), or an open surgical A1 pulley release (n=56). Absence of triggering and ability to freely bend the finger was seen in 57% (28 of 49) of patients in the methylprednisolone group at 6 months. The 21 patients who relapsed were given a second injection, and at 6 months the steroid group had a combined success rate of 86% (42 of 49). The open and percutaneous surgery methods both had 100% cure rates at 6 months (P=.004 compared with injection group), with no treatment failures in either surgical group. At 1 month, fewer patients who received the corticosteroid injection experienced joint pain (3 of 49) compared with open surgery (15 of 56) and percutaneous release (13 of 45) (ANOVA P=.029); however, that difference disappeared by 6 months (1 of 49 in the injection group vs 0 of 56 in the surgery group, and 2 of 45 percutaneous release group; ANOVA P=.15). A 2012 RCT (n=74) compared the effectiveness of physical therapy modalities with a single 1-mL injection of triamcinolone plus lidocaine (no dose provided) at the A1 pulley for mild trigger finger. Physical therapy included a total of 10 sessions consisting of a combined treatment of ultrasound, stretching, exercises, massage, and wax therapy. At 3 months the success rate (measured by absence of pain and triggering) was 97% (38 of 39) for the corticosteroid group, compared with 69% (24 of 35) for the physical therapy group (P=.01). Recurrence of pain and triggering at 6 months were reassessed only in patients who were treated successfully at 3 months. The corticosteroid group had recurrence of pain in 15% while the physical therapy group had no recurrences (P=.04). There was no difference in triggering (4 of 38 vs 0 of 24; P=.10). Overall at 6 months, the success rate was 82% (32 of 39) for the corticosteroid group compared with 69% (24 of 35) for the physical therapy group (no P given). A 2012 retrospective study evaluated the effectiveness of custom finger splints in 46 adults with trigger finger. Patients were given daily finger exercises and splints were worn for 6 weeks, or if still symptomatic, for 10 weeks. There was a statistically significant reduction in pain (from 5.6 to 1.2 on an 11-point scale; P<.001) and severity of triggering (from 3.9 to 1.2 on a 6-point scale; P<.001) at 10 weeks compared with baseline presplinting, and 87% of patients (40 of 46) did not require further intervention within 1 year of splint application.

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In outpatients dependent on benzodiazepines, what medications can increase discontinuation rates?

Evidence-Based Answer

The addition of imipramine or melatonin to a gradual benzodiazepine taper results in higher discontinuation rates than use of a placebo. Carbamazepine also helps with a benzodiazepine taper, but any eventual discontinuation is not sustained (SOR: B, meta-analysis of RCTs with heterogeneity and an individual RCT).

A 2006 meta-analysis reviewed 21 RCTs of interventional studies evaluating the effectiveness of 5 medications to increase benzodiazepine discontinuation: propranolol, buspirone, carbamazepine, trazodone, and imipramine. A total of 1,333 patients were enrolled and 1,188 completed the studies (mean age 52 years, M:F ratio 1:1.3). Significantly higher successful discontinuation rates were noted with imipramine 150–180 mg daily compared with placebo (2 RCTs, n=75; OR 3.1; 95% CI, 1.1–9.4; P=.03). No significant change in quit rates was seen with carbamazepine (3 RCTs, n=94; OR 3.5; 95% CI, 0.9–16.7; P=.06), trazodone (2 RCTs, n=98; OR 2.3; 95% CI, 0.8–6.8; P=.12), propranolol (2 RCTs, n=71; OR 0.8; 95% CI, 0.3–2.1; P=.72), or buspirone (5 RCTs, n=193; OR 1.0; 95% CI, 0.6–1.9; P=1.00).

A Cochrane review evaluated the effectiveness of pharmacological interventions for outpatient management of benzodiazepine monodependence. Eight RCTs including 458 patients (mean ages 39–
54 years) noted that a gradual taper was preferable to abrupt discontinuation. Switching a short half-life benzodiazepine with a long half-life benzodiazepine before gradual taper did not show a benefit. The heterogeneity of the included studies precluded meta-analysis, and the relevant studies were described separately.

In 1 RCT involving 40 patients, benzodiazepines were tapered by 25% per week for 4 weeks with or without carbamazepine 200 mg twice daily. Significantly more patients receiving carbamazepine were not using benzodiazepines 5 weeks after the taper (95%) compared with the placebo group (63%; \( P < .03 \)). However, this statistically significant difference disappeared at the 12-week follow-up (74% for carbamazepine group vs 52% for placebo group; not significant; no \( P \) value provided).\(^2\)

A small, double-blind placebo-controlled trial evaluated the use of melatonin along with a gradual benzodiazepine taper to discontinue chronic benzodiazepine use by patients with insomnia.\(^3\) There were 34 patients (mean age 68 years) in this 2-period study. During period 1, patients received 2 mg controlled-release melatonin or a placebo nightly for 6 weeks. They were encouraged to reduce their bedtime benzodiazepine dosage by 50% during week 2, 75% during weeks 3 and 4, and to discontinue completely by weeks 5 and 6. At the end of the 6 weeks of period 1, 14 of 18 patients in the melatonin group were off benzodiazepines, while only 4 of 16 in the placebo group had quit (\( P = .006 \)).

In period 2, melatonin (single-blinded) was given to all subjects and attempts to discontinue benzodiazepine therapy were resumed. All 30 subjects who completed period 2 chose to continue melatonin and 24 of these subjects discontinued benzodiazepine therapy during period 1 or 2. After 6 months of melatonin therapy, 19 (79%) of 24 patients who discontinued benzodiazepine therapy still received melatonin therapy and remained free of benzodiazepine usage.\(^3\)

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Do “pain contracts” reduce the risk of adverse outcomes in patients taking narcotics?

Evidence-Based Answer
Opioid treatment agreements (OTAs) and random urine drug tests (UDTs) are modestly effective in reducing opioid misuse by patients with chronic nonmalignant pain (SOR: B, systematic review of cohort studies).

A systematic review of 11 observational studies (N=3,153; mean age 50 years) evaluated whether OTAs and random UDTs were associated with decreased misuse of opioids (ie, drug abuse, prescription diversion, early refills, doctor shopping, etc) among patients treated in primary care and pain management specialty clinics.\(^1\) Four studies (N=1,426; mean age 50 years) included in this review had comparison groups.

A prospective VA study analyzed 335 participants who were referred to an Opioid Renewal Clinic and found a decrease in aberrant behavior from 51% to 28% (NNT=4; 95% CI, 3.5–5.7) with an OTA and routine UDT. A retrospective VA study reported a reduction from 47% to 26% (NNT=5; 95% CI, 3.2–9.4) in unscheduled visits, obtaining prescriptions from multiple providers, and cumulative use of opioids (as measured by number of dispensed oxycodone tablets) for 209 patients, with no change in the matched control group. Two other comparison group studies, conducted in pain clinics, evaluated the effect of OTAs and routine UDTs in the same sample of consecutive patients (n=500; mean age 49 years; 41% men) and used historical control participants. One study demonstrated reductions from 18% to 9.2% (absolute risk reduction [ARR] 8.6%; 95% CI, 4.4–13; NNT=12) for obtaining opioid medication from an outside source and the second study showed a decrease in detected illicit drug use from 23% to 16% (ARR 6.5%; 95% CI, 1.3–12; NNT=15).\(^1\)

In the remaining 7 uncontrolled studies (3 in primary care clinics and 4 in pain clinics) wide variations (ranging from 3% to 43%) were observed in the proportion of patients with opioid misuse after OTAs, UDTs, or both.\(^1\)

Consensus guidelines from the American Pain Society and the American Academy of Pain Medicine recommend establishing a management plan for
patients on chronic opioid therapy. These guidelines recommend that patients who are considered to be high risk (ie, patients with a history of drug abuse, psychiatric issues, or serious aberrant drug-related behaviors) should be subject to periodic UDTs; the absence of prescribed drugs or the presence of unexpected drugs would alert the clinician to an unsuccessful treatment plan.

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Is it safe to use statins in a patient with hepatitis C virus (HCV) infection?

Evidence-Based Answer
Treatment with statins appears safe in patients with compensated chronic HCV infection (SOR: C, disease-oriented outcomes). No data are available on the safe use of statins in patients with acute HCV infection.

A 36-week, multicenter, randomized, double-blind placebo-controlled trial (n=326) compared pravastatin 80 mg daily with placebo in hypercholesterolemic patients with a 6-month history of compensated chronic liver disease (81 patients had HCV infection). In patients with HCV infection and normal baseline alanine aminotransferase (ALT), there was no difference in doubling of the ALT in the pravastatin group (0 of 17 patients) compared with the placebo group (1 of 16 patients) (P=.32). In patients with HCV infection and elevated baseline ALT (11–267 IU/L, with a median of 56 IU/L), there was no difference in doubling of the ALT in the pravastatin group compared with placebo group (2 of 21 vs 5 of 27, respectively; P=.38). No acute exacerbations of liver disease occurred.

A case-control study (n=830) evaluated hepatotoxicity in the following subgroups: (1) HCV-positive patients on statin therapy (n=166); (2) HCV-positive patients without statin therapy (n=322); and (3) HCV-negative patients on statin therapy (n=322). Hepatotoxicity was defined as mild-moderate if aspartate aminotransferase (AST) or ALT increased up to 10x upper limits of normal (ULN), or 10x baseline for those with elevated transaminases at entry. Severe increases were defined as AST or ALT >10x ULN (in those with normal levels at entry), >10x baseline (in those with elevated transaminases at entry), or serum bilirubin value >3 mg/dL regardless of AST or ALT levels. A variety of statins and doses were used.

In patients with HCV infection receiving a statin, compared with patients without HCV receiving a statin, there was no differences in rates of mild-to-moderate transaminase increases (22% and 16%, P=.094), severe increases (1.2% and 1%, P=.874), or discontinuation of statins secondary to hepatotoxicity (22% and 9.2%, P=.147). Patients with HCV infection receiving a statin had a higher rate of mild-to-moderate increases in transaminases versus patients with HCV infection not receiving a statin (23% vs 13%, P=.009); however, the HCV patients on statins had a lower rate of severe increases compared with those not receiving a statin (1.2% vs 6.6%, P=.015). Specific outcomes related to transaminase levels were not reported.

A retrospective study (n=146 men) evaluated hepatotoxicity of statins in patients seropositive for HCV. Patients received a median simvastatin equivalent dose of 20 mg for a mean of 2.5 years. Lipid and ALT levels were measured at baseline, 3 and 6 months after initiation, and during long-term follow-up. The primary safety endpoint was defined as an increase in ALT >3x ULN. At 22 months, no increase in ALT was observed (8% had ALT >3x ULN at baseline and 8% had ALT >3x ULN at the end of the study). Use of potentially hepatotoxic drugs or potent cytochrome P450 3A4 inhibitors occurred in 30% of patients, yet due to variability in obtaining lab results at defined times, evaluation of these confounding factors was not performed.

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Abdominal migraine

Background
Idiopathic recurrent disorder, seen mainly in children, characterized by:
- Episodic midline moderate to severe abdominal pain
- Nausea and vomiting
- Attacks lasting 1–72 hours with normality between episodes

Pathophysiology
- Etiology unclear
- Incidence, prevalence
  - Mean onset: 7 years old
  - Peak prevalence: 10 years old
  - Likely female predominance
  - 4%–15% of children with chronic, periodic abdominal pain
  - 2%–4% of children overall
- Risk factors
  - Family history of migraine
- Morbidity
  - Most develop migraine headache later

Diagnostic criteria
- 5+ attacks fulfilling the following criteria:
  - Abdominal pain attacks lasting 1–72 hours (untreated or unsuccessfully treated)
  - Pain has all these characteristics:
    1. Midline, periumbilical, or poorly localized
    2. Dull, “just sore” quality
    3. Moderate to severe intensity
  - During abdominal pain, at least 2 of these signs or symptoms:
    1. Anorexia
    2. Nausea
    3. Vomiting
    4. Pallor

Therapeutics
- Acute/abortive treatment
  - Analgesics (ibuprofen or acetaminophen); best given early
  - Antiemetics prn
  - Oral, sublingual, or nasal triptans
  - IV valproic acid
  - Nonoral route prn
- Long-term care
  - Good sleep habits
  - Proper hydration
  - Avoid foods high in amines or xanthenes
  - Avoid stressful situations
  - Preventive medications
    - Propranolol
    - Cyproheptadine

Prognosis
- Abdominal pain attacks generally cease by early adolescence
- Progression to nonabdominal migraine common

REFERENCES

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Spotlight on Pharmacy

Is calcitonin useful for reducing pain of acute osteoporotic fracture?

Bottom line
Calcitonin is effective for reducing pain from acute vertebral compression fractures in patients with osteoporosis. There is no difference between calcitonin and pamidronate, but pamidronate is more expensive (SOR: A, systematic review of RCTs and an individual RCT).

Evidence summary

Adverse effects mild
A 2012 systematic review of 13 RCTs (N=589) examined the efficacy of calcitonin (by any route) in older patients (age >60 years) with pain due to an osteoporotic vertebral compression fracture. Compared with placebo, calcitonin decreased pain at rest by the end of week 1 (4 trials using a 10-point visual analog scale [VAS]; N=196; mean difference [MD] –3.4; 95% CI, –4.0 to –2.8). Adverse effects of gastrointestinal upset (47% of calcitonin recipients, RR 2.6; 95% CI, 1.1–6) and flushing (32% of calcitonin recipients, RR 6.9; 95% CI, 2.5–19) were mild but significantly higher than in the control group.

Calcitonin and pamidronate have equal efficacy, but big cost difference
A 2006 randomized, prospective double-blind study of 27 patients aged 49 to 85 years with painful, benign, nontraumatic vertebral compression fractures evaluated a single dose treatment of pamidronate (1 mg/kg) compared with synthetic human calcitonin (1.5 mg) via intravenous infusion. The endpoints were pain (as measured by a 10-point VAS score) and functional status (as measured by the EIFEL disability rating scale) over a 30-day period from the time of the fracture.

There were no significant differences in scores or functional status when using pamidronate or calcitonin (at day 30: VAS score for pamidronate 3.6 vs calcitonin 3.1; P=.70). However, calcitonin is 10-fold less expensive than pamidronate, so the authors recommended use of the less expensive agent.

Recommendations
A 2010 evidence-based clinical practice guideline evaluating treatment of osteoporotic spinal compression fractures approved by the American Academy of Orthopedic Surgery recommends the use of calcitonin (any route) for 4 weeks when given within 5 days of the fracture (level of evidence II based on 2 RCTs and 2 prospective nonblinded studies).

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REFERENCES

Evidence-Based Practice learning objectives

1. To become knowledgeable about evidence-based solutions to commonly encountered clinical problems.
2. To understand how ground-breaking research is changing the practice of family medicine.
3. To become conversant with balanced appraisals of drugs that are marketed to physicians and consumers.
1. Which of the following patients should be screened for active TB?
   - a. Household contact, age 6, who is exposed to patient with active TB
   - b. Patient who rode bus with a gentleman who had a positive PPD test
   - c. All inpatients
   - d. All clinic patients

2. Scoliosis in adolescents is associated with which of the following outcomes?
   - a. Death due to cardiorespiratory failure
   - b. Severe back pain
   - c. Decreased body satisfaction
   - d. Increased mortality

3. An 85-year-old woman with osteoporosis who cannot tolerate a bisphosphonate due to gastrointestinal adverse effects:
   - a. Would benefit from vitamin D supplementation alone to reduce the risk of a hip fracture
   - b. Would benefit from calcium supplementation alone to reduce the risk of a hip fracture
   - c. Should take vitamin D to prevent vertebral compression fracture and kyphosis
   - d. Should not do anything to prevent osteoporotic hip fracture

4. Among patients with heart disease, music therapy is associated with which of the following effects?
   - a. Reduction in anxiety
   - b. Reduction in revascularization procedures
   - c. Reduction in nonfatal myocardial infarctions
   - d. Reduction in overall mortality

5. Which of the following statements is true regarding thiazides and gouty arthritis?
   - a. Thiazides reduce the risk of gouty arthritis in younger adults
   - b. Thiazides increase the risk of gouty arthritis in older adults
   - c. Thiazides increase the risk of gouty arthritis irrespective of the dose
   - d. Triamterene blocks the tendency of hydrochlorothiazide to cause gout

6. For the treatment of trigger finger, which of the following statements is true?
   - a. Corticosteroid injections have frequent adverse effects
   - b. Ten sessions of physical therapy are as effective as a single corticosteroid injection
   - c. Surgery with percutaneous pulley release is a less painful option at 1 month compared with a corticosteroid injection
   - d. Corticosteroid injections have high success rates

7. Which of the following agents may help improve abstinence in outpatients dependent on benzodiazepines?
   - a. Propranolol
   - b. Melatonin
   - c. Progesterone
   - d. Buspirone

8. In a patient with chronic hepatitis C virus (HCV) infection and hypercholesterolemia, treatment with statin therapy is
   - a. Absolutely contraindicated because of the risk of hepatic injury
   - b. As safe as in patients without HCV infection
   - c. Paradoxically safer at higher doses than at lower doses
   - d. Unethical
11:15 am – How to Engage an Online Learning Environment for Teaching Scholarship to Faculty and Residents
Corey Lyon, DO

1:45 pm – Meeting the “Scholarly Activity” Requirement through Publication and the Assistance of the FPIN Consortium
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