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Breast Cancer Prevented in Some Women with Drug Treatment

Clinical Question

Can medication reduce breast cancer in women at above-average risk?

Bottom Line

In some postmenopausal women at higher-than-average risk of breast cancer, tamoxifen and, to a lesser extent, raloxifene (Evista) will prevent the development of breast cancer. For every 1,000 women who receive the prophylaxis, there will be seven to nine fewer cases of diagnosed breast cancer. Cancer-related mortality or overall mortality has not been shown to be affected by these preventive therapies. (Level of Evidence = 1a)

Synopsis

The authors searched several databases, including the Cochrane library, for English-language randomized controlled trials comparing estrogen-blocking treatment with placebo in women at higher-than-average risk of breast cancer but without the *BRCA* genetic mutation. One researcher selected studies for inclusion and abstracted the data, which were then checked by a second researcher. Two researchers evaluated the quality of the studies. Most of the patients in the studies were white, postmenopausal, and without comorbidities. Risk reduction was greatest among women with atypical hyperplasia or a five-year Gail risk model score less than 5%. Neither overall mortality nor breast cancer-related mortality were reduced by medication, although the studies were likely too short to find a difference if one existed. In four studies of tamoxifen

and two studies of raloxifene, both medications reduced invasive breast cancer by 30% to 68% compared with placebo. This difference translates into seven to nine fewer women developing breast cancer out of 1,000 women treated for five years. In the single head-to-head (STAR) study, tamoxifen was more effective than raloxifene. Bone fracture rates were decreased with medication use, but endometrial cancer and cataract rates were higher with tamoxifen.

Study Information

Study design: Systematic review

Funding source: Government

Setting: Outpatient (any)

Reference: Nelson HD, Smith ME, Griffin JC, Fu R. Use of medications to reduce risk for primary breast cancer: a systematic review for the U.S. Preventive Services Task Force. *Ann Intern Med*. 2013;158(8):604-614.

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Low-Dose Penicillin Prevents Recurrent Cellulitis

Clinical Question

Does penicillin in a low dose prevent recurrent cellulitis of the leg?

Bottom Line

For patients with at least two previous episodes of cellulitis in the previous three years, low-dose penicillin can prevent recurrence (number needed to treat = 6). (Level of Evidence = 1b)

Synopsis

Patients with at least two episodes of leg cellulitis within the past three years were eligible for the study. The mean age was 58 years, 60% were women, the mean body mass index was 35 kg per m², and 25% had venous insufficiency. The average number of previous episodes of cellulitis was 3.75.

Patients were randomized to receive 250 mg of penicillin twice daily or placebo, and groups were balanced at the start of the study. Although 274 patients were initially randomized, 26 withdrew consent, were lost to follow-up, or died. Patients were followed for at least 18 months and up to three years. At the end of the follow-up period, the median time to the first recurrent episode of cellulitis was 626 days for those receiving penicillin and 532 days for those receiving placebo. The probability of any recurrence was lower in those receiving penicillin (22% vs. 37%; $P = .01$; number needed to treat = 6). Adverse events were slightly less common in the penicillin group and were mild. Patients with a higher body mass index, those with edema, and those with more previous episodes were less likely to respond.

Study Information

Study design: Randomized controlled trial (double-blinded)

Funding source: Foundation

Allocation: Concealed

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

Reference: Thomas KS, Crook AM, Nunn AJ, et al.; U.K. Dermatology Clinical Trials Network's PATCH I Trial Team. Penicillin to prevent recurrent leg cellulitis. *N Engl J Med.* 2013;368(18):1695-1703.

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Sexual, Urinary, and Bowel Dysfunction Common After Treatment for Localized Prostate Cancer

Clinical Question

What are the long-term outcomes after surgery or radiation therapy for localized prostate cancer?

Bottom Line

Patients undergoing surgery had worse urinary and sexual outcomes, whereas those undergoing external beam radiation therapy (EBRT) had worse bowel symptoms. Watchful waiting ("active surveillance") was not the subject of this study, but given the problems associated with therapy, active surveillance is looking better and better for patients who have localized prostate cancer. (Level of Evidence = 2b)

Synopsis

The researchers used data from men between 55 and 74 years of age who had been given a diagnosis of localized prostate cancer in the mid 1990s, and who had been followed up prospectively for 15 years. All underwent

prostatectomy ($n = 1,164$) or EBRT ($n = 491$) as part of the long-term Prostate Cancer Outcomes Study. The median age of men was 64 years in the surgery group and 69 years in the EBRT group. Most had a Gleason score between 2 and 4 (63%) or between 5 and 7 (19%). Men were contacted at one, two, five, and 15 years to be asked about clinical symptoms and disease-specific quality of life. At each time point, urinary symptoms and sexual functions were worse in the surgery group, whereas bowel symptoms (urgency, bothered by frequent bowel movements, or pain) were worse in the radiotherapy group. Erection insufficient for intercourse was common in both groups: 78.8% of those undergoing surgery and 61% undergoing EBRT after two years; 76% and 72%, respectively, after five years. Urinary and sexual function was lowest in surgery patients approximately six to 12 months after treatment. Although urinary and sexual function improved somewhat over the next year or two, it never returned to baseline. The same was true, although to a less dramatic extent, for bowel function. Note that after 15 years, there were no longer any significant differences, although this could be because of a diminished sample size (a lot of patients were not around 15 years later).

Study Information

Study design: Cohort (prospective)

Funding source: Government

Setting: Outpatient (any)

Reference: Resnick MJ, Koyama T, Fan KH, et al. Long-term functional outcomes after treatment for localized prostate cancer. *N Engl J Med.* 2013;368(5):436-445.

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Kidney Stones: Prevention Options

Clinical Question

What is the best approach to prevent recurrent kidney stones?

Bottom Line

Increased fluid intake or decreased soft drink intake may prevent further kidney stones in patients with a single episode of a calcium stone, but other dietary interventions are not effective. Thiazides and citrates with increased fluid intake decrease recurrence in patients with multiple past stones, as does allopurinol (Zyloprim) in patients with high uric acid levels. Combinations—allopurinol and citrates with a thiazide—are no more effective than thiazides alone. (Level of Evidence = 1a)

POEMs

Synopsis

The researchers conducting this systematic review searched several databases, including the Cochrane library, and identified 28 English-language randomized trials that compared approaches to prevent recurrent kidney stones. The studies primarily evaluated patients with calcium stones, and included patients with a single incidence or with multiple recurrences. One reviewer abstracted the data and a second author checked for accuracy. Two reviewers independently rated the quality of the identified research. For patients with a single recurrence, low-quality evidence showed that increased fluid intake (greater than 2 to 2.5 L per day) or reduced soft drink consumption halved the recurrence of stones compared with no treatment. Decreased-protein diets or high-fiber diets and multicomponent diet changes (high fiber, low purine, and low protein) were all ineffective. In patients with recurrent calcium stones, six moderate-quality studies showed that thiazide treatment, combined with high fluid and decreased oxalate intake, decreased stone recurrence by one-half (relative risk = 0.52; 95% confidence interval, 0.39 to 0.69) and decreased rates of

lithotripsy. Treatment with citrates (potassium citrate, potassium-magnesium citrate, or potassium-sodium citrate) and increased fluid intake also decreased composite stone recurrence (relative risk = 0.25; 95% confidence interval, 0.14 to 0.44). Allopurinol decreases composite stone recurrence in patients with baseline hyperuricemia or hyperuricosuria. Combinations with thiazides were no more effective than a thiazide alone.

Study Information

Study design: Systematic review

Funding source: Government

Setting: Outpatient (any)

Reference: Fink HA, Wilt TJ, Eidman KE, et al. Medical management to prevent recurrent nephrolithiasis in adults: a systematic review for an American College of Physicians clinical guideline [published correction appears in *Ann Intern Med*. 2013;159(3):230-232]. *Ann Intern Med*. 2013;158(7):535-543.

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