POEMs

Patient-Oriented Evidence That Matters

No Difference in Cognitive Decline in Older Patients with Coronary Artery Disease Undergoing CABG or PCI

Clinical Question

Are older adults with coronary artery disease (CAD) at an increased risk of accelerated memory decline after coronary revascularization with coronary artery bypass grafting (CABG) or percutaneous coronary intervention (PCI)?

Bottom Line

The study found no significant difference in the rate of memory decline among older adults with CAD who are undergoing coronary revascularization with CABG or PCI. (Level of Evidence = 2c)

Synopsis

It is uncertain if the rate of memory decline in older people with CAD is changed after CABG or PCI. The investigators analyzed data obtained from a large prospective longitudinal survey of community-dwelling participants beginning in 1992 in the United States. Study participants included adults 65 years or older who underwent CABG, on pump or off pump, and PCI. As part of the study, participants took regular cognitive tests to assess longitudinal memory change. Analyses were adjusted for multiple potential confounders including age, education, financial assets, body mass index, smoking status, presence of daily pain or difficulty with activities of daily living, depression, hypertension, diabetes mellitus, chronic obstructive pulmonary disease, stroke, heart disease, and race and ethnicity. The mean rate of memory decline was not significantly different before and after CABG or PCI. There was a statistically significant increase in the rate of memory decline after off-pump CABG compared with PCI, but not after on-pump CABG compared with PCI. The authors note that off-pump CABG is increasingly viewed as a less durable method of revascularization.

Study design: Cohort (retrospective)

Funding source: Government

Setting: Population-based

Reference: *Whitlock EL, Diaz-Ramirez LG, Smith AK, et al. Association of coronary artery bypass grafting vs percutaneous coronary intervention with memory decline in older adults undergoing coronary revascularization.* JAMA. *2021;325(19):1955-1964.*

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Screening for Ovarian Cancer with CA 125 and Ultrasound Algorithm Does Not Reduce Mortality

Clinical Question

Does screening for ovarian cancer using an algorithm that customizes interpretation and follow-up of cancer antigen (CA) 125 testing reduce ovarian cancer mortality in average-risk women?

Bottom Line

Like the U.S. Prostate, Lung, Colorectal and Ovarian Cancer Screening Trial, this large and long U.K. study found no reduction in ovarian cancer mortality with screening using ultrasonography or a multimodal CA 125–based screening strategy. (Level of Evidence = 1b)

Synopsis

The U.K. Collaborative Trial of Ovarian Cancer Screening was a randomized trial that recruited approximately 200,000 average-risk women 50 to 74 years of age. They were randomized in a 1:1:2 ratio to multimodal screening, annual ultrasonography, or usual care. Multimodal screening was based on CA 125 testing, but instead of a single cutoff for all women, there were individualized cutoffs. Significant changes from each woman's baseline triggered additional blood tests and if necessary, ultrasonography and biopsy. Women were recruited between 2001 and 2005 and were screened regularly until 2011. An interim report of

this trial after a median of 11 years of follow-up initially claimed to have detected a reduction in disease-specific mortality in a post-hoc analysis of incomplete data. This interpretation was criticized in an editorial from the Ovarian Cancer Research Fund Alliance and the Banbury Conference Writing Group because the investigators have a financial stake in the patented CA 125 algorithm. The results in the full report are based on follow-up for a median of 16.3 years with complete follow-up for 95% of the cohort. Overall, 0.9% of women in each group were given a diagnosis of invasive epithelial ovarian or tubal cancer. There was no significant difference between groups in ovarian cancer–specific mortality (0.58% in the multimodal screening group vs. 0.61% in the control group; $P = 0.58$). Secondary analyses looking at only early and late deaths found no difference in mortality, and ultrasonography had no benefit. There was a stage shift with multimodal screening: 47% more women had a diagnosis of stage I disease, and 25% fewer had stage IV disease, but this did not translate into a mortality benefit. The incidence of disease stages III and IV combined was only 10% lower. Harms in terms of the number of biopsies and surgeries were not reported. Based on calculations from supplemental materials, there was no difference in all-cause mortality between groups.

Study design: Randomized controlled trial (double-blinded)

Funding source: Government

Allocation: Concealed

Setting: Population-based

Reference: *Menon U, Gentry-Maharaj A, Burnell M, et al. Ovarian cancer population screening and mortality after long-term follow-up in the UK Collaborative Trial of Ovarian Cancer Screening (UKCTOCS): a randomised controlled trial.* Lancet. *2021; 397(10290):2182-2193.*

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High-Dose Amoxicillin/Clavulanate No Better than Standard Dose for Acute Sinusitis in Adults

Clinical Question

Is high-dose amoxicillin/clavulanate (Augmentin) superior to standard-dose amoxicillin/clavulanate in adults with acute sinusitis?

Bottom Line

This study found no significant difference between the standard-dose and high-dose regimens of amoxicillin/clavulanate for treating acute sinusitis in adults. It is important to note that both doses are minimally superior to placebo. (Level of Evidence = 1b–)

Synopsis

The standard dosage of amoxicillin/clavulanate, 875/125 mg twice daily, is minimally more effective than placebo for treating acute sinusitis in adults. The investigators identified adults, 18 years or older, presenting to primary care offices with sinus symptoms consistent with currently accepted clinical criteria for acute bacterial sinusitis. Eligible patients randomly received (concealed allocation assignment) either a standard-dose regimen of amoxicillin/clavulanate, 875/125 mg, plus placebo twice daily for seven days, or a high-dose regimen of amoxicillin/clavulanate, 875/125 mg, plus amoxicillin, 875 mg twice daily for seven days. There was no placebo plus placebo group. Individuals masked to treatment group assignment assessed outcomes using a standard scoring tool for sinusitis at days 3 and 10. Complete follow-up occurred for 74.5% of patients on day 10.

Using intention-to-treat analyses, the primary outcome of a global rating of "a lot better" or "no symptoms" occurred in 44.3% of patients in the standard-dose group compared with 36.4% of patients in the high-dose group (nonsignificant difference of –7.9% favoring the standard-dose group). Because of the high dropout rate, the investigators assigned a negative outcome to everyone in the standard-dose group and a positive outcome to everyone in the high-dose group; the group difference in the primary outcome was still not significant.

Study design: Randomized controlled trial (double-blinded)

Funding source: Unknown/not stated

Allocation: Concealed

Setting: Outpatient (primary care)

Reference: *Gregory J, Huynh B, Tayler B, et al. High-dose vs standard-dose amoxicillin plus clavulanate for adults with acute sinusitis: a randomized clinical trial.* JAMA Netw Open. *2021;4(3):e212713.*

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For Patients with Type 2 Diabetes Mellitus Who Are Taking a GLP-1 Receptor Agonist, an SGLT2 Inhibitor May Be Preferred to a Sulfonylurea as Add-on Therapy

Clinical Question

For patients with type 2 diabetes mellitus who are taking a glucagon-like peptide-1 (GLP-1) receptor agonist, is a sodium-glucose cotransporter 2 (SGLT2) inhibitor or a sulfonylurea preferred if an additional drug is needed?

Bottom Line

This propensity score–matched analysis (not funded by industry) concluded that an SGLT2 inhibitor is preferred over a sulfonylurea for patients with type 2 diabetes who are already taking a GLP-1 receptor agonist, with favorable effects on the likelihood of hospitalization for myocardial infarction and heart failure, and all-cause mortality. (Level of Evidence = 2b)

Synopsis

There have been no randomized trials that address whether there are benefits to adding an SGLT2 inhibitor or sulfonylurea in patients with type 2 diabetes who are already taking a GLP-1 receptor agonist. The researchers used three U.S. insurance registries to identify adults with type 2 diabetes who were taking a GLP-1 receptor agonist and had not taken an SGLT2 inhibitor or a sulfonylurea in the previous three months. Patients with gestational or type 1 diabetes, cancer, end-stage renal disease, or HIV infection were excluded. After initially identifying 32,221 patients adding an SGLT2 inhibitor and 26,894 adding a sulfonylurea, the authors used propensity score matching with more than 95 covariates to create 12,584 matched pairs for comparison. Patients were followed up for a mean of 10 months. The primary outcome was a composite of hospitalization for myocardial infarction and stroke, and all-cause mortality. A secondary outcome was hospitalization for heart failure. The primary outcome was significantly less likely in the group given an SGLT2 inhibitor (9.9 vs. 13.0 events per 1,000 person-years; adjusted hazard ratio [HR] = 0.76; 95% CI, 0.59 to 0.98; number needed to treat = 322 per year to prevent one event). Heart failure hospitalizations were also less common in the group given an SGLT2 inhibitor (13.0 vs. 20.8 per 1,000 person-years; adjusted HR = 0.64; 95% CI, 0.50 to 0.82; number needed to treat = 128 per year to prevent one hospitalization). The reduction in the composite outcome was driven primarily by reductions in myocardial infarction (adjusted HR = 0.71; 95% CI, 0.51 to 1.003) and all-cause mortality (adjusted HR = 0.68; 95% CI, 0.40 to 1.14), but not for stroke (adjusted HR = 1.05; 95% CI, 0.62 to 1.79).

Study design: Randomized controlled trial (single-blinded)

Funding source: Industry and government

Setting: Emergency department

Reference: *Dave CV, Kim SC, Goldfine AB, et al. Risk of cardiovascular outcomes in patients with type 2 diabetes after addition of SGLT2 inhibitors versus sulfonylureas to baseline GLP-1RA therapy [published correction appears in* Circulation. *2021;143(8):e744].* Circulation. *2021;143(8):770-779.*

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Editor's Note: Dr. Ebell is deputy editor for evidence-based medicine for *AFP* and cofounder and editor-in-chief of Essential Evidence Plus, published by Wiley-Blackwell. ■