GEMs
GOOD EVIDENCE MATTERS

GEMs of the Week

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What's in this week's issue?

Week of October 9 - 13, 2023

SPOTLIGHT: Sensitivity of Urine Specimen vs Vaginal Swab for Chlamydia, Gonorrhea, and Trichomonas

Sensitivity of Urine Specimen vs Vaginal Swab for Chlamydia, Gonorrhea, and Trichomonas

Vaginal Swab vs Urine for Detection of *Chlamydia trachomatis*, *Neisseria gonorrhoeae*, and *Trichomonas vaginalis*: A Meta-Analysis

Aaron KJ, Griner S, Footman A, Boutwell A, Van Der Pol B. Vaginal Swab vs Urine for Detection of Chlamydia trachomatis, Neisseria gonorrhoeae, and Trichomonas vaginalis: A Meta-Analysis. *Ann Fam Med*. 2023;21(2):172-179. doi:10.1370/afm.2942

KEY TAKEAWAY: In sexually active adolescent and adult women, vaginal swabs are more sensitive than urine samples for the detection of *Chlamydia trachomatis* and *Neisseria gonorrhoeae*.

STUDY DESIGN: Systematic review and meta-analysis of 28 studies

LEVEL OF EVIDENCE: STEP 1

BRIEF BACKGROUND INFORMATION: There are an estimated seven million new cases per year of *Chlamydia trachomatis (CT)*, *Neisseria gonorrhoeae (NG)*, and *Trichomonas vaginalis (TV)* in the United States. The CDC recommends vaginal swabs as the ideal source for testing these organisms, but current testing is often urine-based. Because these infections are not typically located in the female urethra, there is concern that urine-based screening may be less sensitive than vaginal swabs for the detection of infection, which is used on a large scale, and may result in thousands of missed infections.

PATIENTS: Sexually active women

INTERVENTION: Vaginal swab

CONTROL: Urine specimen

PRIMARY OUTCOME: Sensitivity of the diagnostic test

METHODS (BRIEF DESCRIPTION):

- Databases and journals were searched for articles published from Jan 1, 1995, to Dec 31, 2021.
- Studies included those published in English that utilized commercially available NAATs for CT, NG, and TV in adolescent and adult women with both urine samples and vaginal swabs obtained from the same assay.
- The studies also used a reference standard other than the one being evaluated.
- Studies included sensitivity data obtained from the same assay on both a urine specimen and a vaginal swab.
- Studies were excluded if vaginal swabs and urine were not compared head-to-head, or if there was not a reference standard.
    - Studies in which the sensitivity could not be determined were excluded, as were those that utilized assays that were not commercially available.
- 28 studies were included in the meta-analysis. The studies included a mixture of symptomatic and asymptomatic women seen in primary care, community, STI, and specialty clinics.
- Sensitivities and 95% confidence intervals were calculated, as well as odds ratios of any differences.
- A fixed-effects model was used to compare the differences between urine and vaginal swab specimen types in CT and NG as the heterogeneity measure (I^2) was less than 50%.
- A random effects model was used to compare differences in specimen types in TV due to a heterogeneity measure (I^2) of 66%.

INTERVENTION (# IN THE GROUP): Not available

COMPARISON (# IN THE GROUP): Not available

FOLLOW-UP PERIOD: Not available

RESULTS:

Primary Outcome –

- For CT (N=20), pooled sensitivity estimates were 94.1% (95% CI, 93.2–94.9) for vaginal swabs and 86.9% (95% CI, 85.6–88.0) for urine specimens (odds ratio [OR] 2.69; 95% CI, 2.21–3.28*)* for vaginal swabs being more sensitive than urine specimen.
- For NG (N=16), pooled sensitivity estimates were 96.5% (95% CI, 94.8–97.7) for vaginal swabs and 90.7% (95% CI, 88.4–92.5) for urine specimen (OR 3.68; 95% CI, 2.19–6.18) for vaginal swabs being more sensitive than urine specimen.
- For TV (N=9), pooled sensitivity estimates were 98.0% (95% CI, 97.0–98.7) for vaginal swabs and 95.1% (95% CI, 93.6–96.3) for urine specimens, a difference that was not statistically significant.

LIMITATIONS:

- The TV analysis was limited by sample size and high heterogeneity.
- There was a lack of data available for transgender individuals.
- Studies included both symptomatic and asymptomatic individuals.

David Mullen, MD
Indiana University School of Medicine
Indianapolis, IN

Dapagliflozin in Type 2 DM Shows Cardiovascular and Renal Benefits

Efficacy and Safety of Dapagliflozin in Type 2 Diabetes According to Baseline Blood Pressure: Observations From DECLARE-TIMI 58 Trial

Furtado RHM, Raz I, Goodrich EL, et al. Efficacy and Safety of Dapagliflozin in Type 2 Diabetes According to Baseline Blood Pressure: Observations From DECLARE-TIMI 58 Trial. *Circulation*. 2022;145(21):1581-1591. doi:10.1161/CIRCULATIONAHA.121.058103

KEY TAKEAWAY: Cardiovascular benefits and renal benefits with the use of dapagliflozin are independent of starting blood pressure, which may be an unnecessary barrier to therapy.

STUDY DESIGN: Secondary analysis of randomized controlled data from declaratively 58 trials (N=17,160)

LEVEL OF EVIDENCE: STEP 1

BRIEF BACKGROUND INFORMATION: SGLT2 inhibitors have in the past few years made significant headway regarding the evidence for cardiovascular benefits in addition to their utility in treating type II diabetic patients. Given the initial trials, the diuretic effect of dapagliflozin was highlighted as a potential cause for volume depletion and resultant acute kidney injuries leading to questions as to whether cardiovascular and renal benefits would be seen in individuals with lower baseline blood pressures prior to initiating therapy.

PATIENTS: Type 2 DM with elevated cardiovascular risk or established cardiovascular disease

INTERVENTION: Dapagliflozin 10 mg

CONTROL: Placebo

PRIMARY OUTCOME: Cardiovascular outcomes (MACE [composite of cardiovascular death, myocardial infarction, or ischemic stroke], hospitalization for heart failure, cardiorenal outcomes) and renal benefits (composite of sustained decrease in estimated glomerular filtration rate of ≥40%, end-stage renal disease, or renal death)

METHODS (BRIEF DESCRIPTION):

- Double-blinded multinational placebo-controlled trial 882 sites within 33 countries
- Initial 4–8 week blinded placebo run followed by a 1–1 double-blinded placebo versus intervention.
- Additionally, antiglycemic and antihypertensive therapy is at the discretion of the treating physician.
- Blood pressures were taken three times each visit with a median follow-up time of 48 months.

INTERVENTION (# IN THE GROUP):

- SBP <120: 1,312
- SBP 120–129: 1,843
- SBP 130–139: 2,165
- SBP 140–159: 2,758
- SBP ≥160: 500

COMPARISON (# IN THE GROUP):

- SBP <120: 1,245
- SBP 120–129: 843
- SBP 130–139: 2,220
- SBP 140–159: 743
- SBP ≥160: 531

FOLLOW-UP PERIOD: Mean 48 months

RESULTS:

Primary Outcome –

- Baseline SBP amongst DM2 patients did not significantly affect hospitalizations for heart failure (*P*=.28) when modeled as a continuous variable.
- Baseline SBP amongst DM2 patients did not significantly affect renal composite outcomes (*P*=.52).
- Those with normotensive SBP <120 mmHg experienced consistent benefits with dapagliflozin:
  - HHF: (HR 0.66; 95% CI, 0.42–1.05)
  - Renal-specific outcomes: (HR 0.39; 95% CI, 0.19–0.78)
- Type DM2 patients with SBP <120 mmHg experienced no statistically significant harms from dapagliflozin related to:
  - Lower limb amputation: (HR 1.2; 95% CI, 0.62–2.2)
  - Acute kidney injury: (HR 0.29; 95% CI, 0.14–0.61)
  - Symptoms of volume depletion: (HR 0.96; 95% CI, 0.61–1.51)
- Patients with severe hypertension experienced a three-fold higher frequency of HHF (HR 3.01; 95% CI, 1.88–4.82).
- No significant difference in adverse events when stratifying according to blood pressure was identified.

LIMITATIONS:

- Subgroup analysis lacking power particularly at the >160 mmHg systolic blood pressure group.
- Further studies will be necessary to determine optimal blood pressure to initiate therapy.
- Type 2 diabetic patient population limits generalizability to nondiabetic patients or patients with prediabetes.
- While the study did enroll less than 10% of patients with prior heart failure was not a focus of the study; benefits specific for HrEF, HpEF, and those without heart failure will need to be investigated further.
- Only a 10 mg dose was in the comparison group and it is unclear if the benefit is dose-dependent or if a lower dose would achieve similar benefits.

Jordi Gaton, MD
Texas A&M Family Medicine Residency
Bryan, TX

Blood Glucose Monitoring Combined with Dietary Algorithm Improves T2DM Control

Effects of Patient-Driven Lifestyle Modifications Using Intermittently Scanned Continuous Glucose Monitoring in Patients with Type 2 Diabetes: Results from the Randomized Open-Label PDF Study

Choe HJ, Rhee EJ, Won JC, Park KS, Lee WY, Cho YM. Effects of Patient-Driven Lifestyle Modification Using Intermittently Scanned Continuous Glucose Monitoring in Patients With Type 2 Diabetes: Results From the Randomized Open-label PDF Study. *Diabetes Care*. 2022;45(10):2224-2230. doi:10.2337/dc22-0764

KEY TAKEAWAY: Focusing on eating behaviors and patient-driven lifestyle changes using intermittently scanned continuous glucose monitoring lowers HbA1c in patients with type 2 diabetes.

STUDY DESIGN: Open-label, randomized controlled trial

LEVEL OF EVIDENCE: STEP 2

BRIEF BACKGROUND INFORMATION: Type 2 diabetes is a chronic disease that requires regular medical care and is associated with multiple co-morbidities. Diabetes management is patient-driven and requires individualized lifestyle changes and blood glucose monitoring performed by the patient. Given the personalized nature of diabetes care and the interpersonal variability of postprandial blood glucose levels, it is difficult to standardize diabetes management.

PATIENTS: Adults with type 2 diabetes

INTERVENTION: Patient-centered behavior modifications utilizing intermittently scanned continuous glucose monitoring

CONTROL: Standard type 2 diabetes care with blood glucose monitoring

PRIMARY OUTCOME: Change in HbA1c

Secondary Outcome: Change in fasting glucose, body weight, waist circumference, and other health outcomes

METHODS (BRIEF DESCRIPTION):

- Patients 19–80 years old (40% women) with type 2 diabetes and HbA1c between 7% and 10% had no diabetes medication changes in the prior three months.
- Patients were randomized 1:1 to either the intervention group or control group by an independent research nurse.
    - Individuals in the intervention group were trained on how to use the Self Evaluation of Unhealthy food by Looking at the postprandial glucose (SEOUL) algorithm based on continuous glucose monitoring measurements.
        - The SEOUL algorithm is a table that evaluates participants' postprandial glycemic response and provides dietary guidance.
    - Individuals in the control group followed standard diabetes care with blood glucose monitoring.

INTERVENTION (# IN THE GROUP): 58

COMPARISON (# IN THE GROUP): 62

FOLLOW-UP PERIOD: 12 weeks

RESULTS:

Primary Outcome –

- Utilization of the SEOUL algorithm combined with intermittently scanned continuous glucose monitoring resulted in greater improvement of HbA1c compared to standard care (risk-adjusted difference –0.50%, 95% CI, –0.74 to –0.26).

Secondary Outcome –

- Fasting glucose levels were lowered at 12 weeks in the intervention group compared to the control group (adjusted difference of –17 mg/dL; 95% CI, –30 to –3.0).
- The intervention group experienced greater weight loss than the control group (risk-adjusted difference –1.5 kg; 95% CI, –2.7 to –0.3).
- Systolic blood pressures were higher in the intervention group compared to the control group at their baseline and at the 12-week follow-up (risk-adjusted difference 7.7 mmHg; 95% CI, 1.4–14).
- There was no statistically significant difference in waist circumference, lipid levels, and diastolic blood pressure between the groups.

LIMITATIONS:

- The BMI of the control group was slightly higher than the intervention group.
- The study did not evaluate the education level or socioeconomic status of the study population.
- The study duration was brief.

- The SEOUL algorithm that was used for patient dietary self-evaluation was developed for this study and was not validated.

Sylvia Otto, DO
Community Health Care FMR
Tacoma, WA

Randomized Trial of Anticoagulation Strategies for Noncritically Ill Patients Hospitalized with COVID-19

Stone GW, Farkouh ME, Lala A, et al. Randomized Trial of Anticoagulation Strategies for Noncritically Ill Patients Hospitalized With COVID-19. *J Am Coll Cardiol*. 2023;81(18):1747-1762. doi:10.1016/j.jacc.2023.02.041

KEY TAKEAWAY: Therapeutic-dose anticoagulation is not recommended for routine management of critically ill hospitalized patients with COVID-19 but may improve all-cause mortality outcomes in higher-risk patients.

STUDY DESIGN: Randomized, three-arm, open-label, active-controlled multicenter

LEVEL OF EVIDENCE: STEP 2

BRIEF BACKGROUND INFORMATION: COVID-19 attacks the pulmonary system. Building evidence underscores the higher rate of thrombotic side events associated with contracting this virus. These include a range of systemic thromboembolic states, which leads to a higher incidence of respiratory failure, the leading cause of morbidity and mortality in COVID-19 patients. There is some evidence by nonrandomized studies that suggest therapeutic dosing of anticoagulation to be efficacious in outcome success, despite an associated risk of increased bleeding. Nonetheless, there remains conflicting data from other randomized controlled trials on this subject matter.

PATIENTS: Noncritically ill adult patients hospitalized with COVID-19

INTERVENTION: Therapeutic-dose anticoagulation (enoxaparin, apixaban)

CONTROL: Prophylactic-dose anticoagulation (enoxaparin) as standard thromboprophylaxis

PRIMARY OUTCOME: Efficacy

Secondary Outcome: Safety

METHODS (BRIEF DESCRIPTION):

- Randomized 1:1:1
  - Prophylactic-dose enoxaparin: 40 mg subcutaneously daily; 30 mg subcutaneously daily for creatinine clearance <30 mL/min)
  - Therapeutic-dose enoxaparin: 1 mg/kg subcutaneously every 12 hours; 1 mg/kg subcutaneously daily for creatinine clearance <30 mL/min
  - Therapeutic-dose apixaban: 5 mg by mouth twice daily; 2.5 mg every 12 hours for patients with at least 2 of 3 of age ≥80 years, weight ≤60 kg, or serum creatinine ≥1.5 mg/dL
- Patients hospitalized within 48 hours with symptoms consistent with COVID-19 or with suspicion of COVID-19.
- Primary effectiveness outcome was 30-day composite of all-cause mortality, the requirement for ICU level-of-care, systemic thromboembolism confirmed by imaging or surgical intervention, or ischemic stroke confirmed by imaging.

INTERVENTION (# IN THE GROUP): 2,257

COMPARISON (# IN THE GROUP): 1,141

FOLLOW-UP PERIOD: 60 days

RESULTS:

Primary Outcome –

- Therapeutic anticoagulation was not more effective than standard prophylactic anticoagulation (HR 0.85; 95% CI, 0.69–1.04).

Secondary Outcome –

- Therapeutic anticoagulation reduced 30-day all-cause mortality compared to standard prophylactic anticoagulation (HR 0.70; 95% CI, 0.52–0.93).
- Therapeutic anticoagulation reduced the need for endotracheal intubation compared to standard prophylactic anticoagulation (HR 0.75; 95% CI, 0.58–0.98).
- 0.1% of the therapeutic anticoagulation group had in-hospital major bleeding compared to 0.4% of the standard prophylactic anticoagulation group.

LIMITATIONS:

- Risk of bias.
- Limited generalizability as there are multiple COVID-19 variants.

Sierra Anderson, MD, MS
Indiana University Methodist FMRP
Indianapolis, IN

Simvastatin Lacking in Significant Symptom Reduction of Treatment-Resistant Depression

Effect of Adjunctive Simvastatin on Depressive Symptoms Among Adults with Treatment-Resistant Depression: A Randomized Clinical Trial

Husain MI, Chaudhry IB, Khoso AB, et al. Effect of Adjunctive Simvastatin on Depressive Symptoms Among Adults with Treatment-Resistant Depression: A Randomized Clinical Trial. *JAMA Netw Open*. 2023;6(2):e230147. Published 2023 Feb 1. doi:10.1001/jamanetworkopen.2023.0147

KEY TAKEAWAY: Simvastatin added to standard care does not improve depressive symptoms.

STUDY DESIGN: Double-blind, two-group, placebo-controlled randomized trial

LEVEL OF EVIDENCE: STEP 2

BRIEF BACKGROUND INFORMATION: Previous studies suggest that statins improve depression and reduce the frequency of psychiatric hospitalizations. Clinical studies regarding statin use in depression are limited.

PATIENTS: Pakistani adults with major depression

INTERVENTION: Simvastatin

CONTROL: Placebo

PRIMARY OUTCOME: Depression, anxiety, change in body mass index, C-reactive protein, and plasma lipids

METHODS (BRIEF DESCRIPTION):

- The study consisted of two groups. One group received a placebo in addition to the standard of care for treatment which included regular outpatient psychiatric follow-ups and psychotropic medications. Limited access to supportive psychological interventions was available. The other group received standard of care and simvastatin 20mg daily.
- The patient population included those 18–75 years old with treatment-resistant depression defined as major depressive disorder having failed two or more trials of at least six weeks of antidepressant medication.
- Outcome measures were drawn from rating scales obtained at zero weeks, two weeks, four weeks, eight weeks, and 12 weeks.
  - Depression: Montgomery-Asberg Depression Scale
    - Normal/absent: 0–6
    - Mild: 7–19
    - Moderate: 20–34
    - Severe: 35–60
  - Anxiety: GAD-7 Scale
    - Minimal: 0–4
    - Mild: 5–9
    - Moderate: 10–14
    - Severe: 15 and above
  - Depression: 24-item Hamilton Rating Scale
    - Absent: 0–7
    - Mild: 8–16
    - Moderate: 17–23
    - Severe: 24 and above
- BMI measurements came from objective measures during the visits.
- CRP and lipid blood levels were measured at baseline and week 12 of the study.

INTERVENTION (# IN THE GROUP): 77

COMPARISON (# IN THE GROUP): 73

FOLLOW-UP PERIOD: 12 weeks

RESULTS:

Primary Outcome –

- There was no significant difference in the primary outcome at week 12 between the intervention and placebo groups (MD –0.61; 95% CI, –3.69 to 2.46).

Secondary Outcome –

- Secondary outcome measures reflected similar trends and were not statistically significant.

LIMITATIONS:

- Simvastatin 20mg is a relatively low-intensity dosage of cholesterol-lowering medication and may need a higher dose or stronger class of cholesterol-lowering medication to see the benefit using anti-depressant medication.
- The study was conducted in Pakistan, which may limit generalizability.
- Standard of care consisted of varying combinations of antidepressant, and psychotropic medications, as well as inconsistency of psychological intervention as outlined due to the country having relative scarcity of such interventions on a regular basis.

Robert Chen, DO
LewisGale Medical Center FMRP
Salem, VA

Fluid Bolus Does Not Prevent Cardiovascular Collapse at Intubation

Effect of Fluid Bolus Administration on Cardiovascular Collapse Among Critically Ill Patients Undergoing Tracheal Intubation, A Randomized Clinical Trial

Russell DW, Casey JD, Gibbs KW, et al. Effect of Fluid Bolus Administration on Cardiovascular Collapse Among Critically Ill Patients Undergoing Tracheal Intubation: A Randomized Clinical Trial. *JAMA*. 2022;328(3):270-279. doi:10.1001/jama.2022.9792

KEY TAKEAWAY: Administration of a 500 mL intravenous crystalloid bolus in critically ill adults undergoing tracheal intubation does not significantly decrease the incidence of cardiovascular collapse or death at 28 days compared with no fluid bolus administration.

STUDY DESIGN: Multi-center, randomized, unblinded clinical trial

LEVEL OF EVIDENCE: STEP 2

BRIEF BACKGROUND INFORMATION: Hypotension is a common occurrence during intubation. The pathophysiology of this is presumed to be medication-induced vasodilation and decreased venous return from positive pressure ventilation. Previous studies demonstrated that fluid bolus prevented cardiovascular collapse during noninvasive ventilation. This study examined the effect of intravenous fluid on cardiovascular collapse in patients undergoing tracheal intubation.

PATIENTS: ICU patients undergoing intubation and positive pressure ventilation

INTERVENTION: Fluid bolus started prior to induction of anesthesia

CONTROL: No additional fluid at time of induction

PRIMARY OUTCOME: Cardiovascular collapse at induction

Secondary Outcome: Mortality within 28 days of intubation

METHODS (BRIEF DESCRIPTION):

- Critically ill adults in 11 ICUs undergoing tracheal intubation were included in this study.
- Patients were excluded if the clinician performing tracheal intubation deemed administration of fluid bolus to be required or contraindicated.
- Randomization was computer-generated in a 1:1 ratio.
- Users performing intubation were not blinded to groups.
- Patients in the intervention group received a 500 mL bolus.
- The control group received standard care without additional fluid bolus.
- Cardiovascular collapse was defined as new or increased receipt of vasopressors or systolic blood pressure <65 mmHg between induction and 2 min after intubation or cardiac arrest or death between induction and 1 h after intubation.

INTERVENTION (# IN THE GROUP): 538

COMPARISON (# IN THE GROUP): 527

FOLLOW-UP PERIOD: 28 days

RESULTS:

Primary Outcome –

- No statistical significance between fluid bolus and control groups for the following:
  - Cardiovascular collapse (absolute difference 2.8%; 95% CI, –2.2 to 7.7)
  - New or increased vasopressor use (absolute difference 3.0%; 95% CI, –1.9 to 7.9).
  - Systolic blood pressure <65 mmHg (absolute difference –0.3%; 95% CI, –2.8 to 2.3)
  - Cardiac arrest (absolute difference 0.2%; 95% CI, –1.5 to 1.8)
  - Death (absolute difference 0.2%; 95% CI, –1.0 to 1.3)

Secondary Outcome –

- In-hospital death prior to 28 d was not significantly different between the groups (absolute difference –0.8%; 95% CI –7.9 to 4.3).

LIMITATIONS:

- 15% of patients were excluded due to the urgency of intubation, which limits generalizability.
- Further studies would be needed to determine if more than 500 mL bolus of fluid would be beneficial.
- Use of composite outcome in vasopressor increase or initiation, may not be patient-centric.
- The fluid bolus was given prior to induction and patients were not evaluated for fluid administration as a treatment for hypotension.
- The trial was not blinded.

Laura Whitehill, MD
Community Health Care FMR
Tacoma, WA

Is Routine Invasive Strategy Appropriate in Older Patients with Frailty?

Effect of Routine Invasive vs Conservative Strategy in Older Adults with Frailty and Non-ST-Segment Elevation Acute Myocardial Infarction: A Randomized Clinical Trial

Sanchis J, Bueno H, Miñana G, et al. Effect of Routine Invasive vs Conservative Strategy in Older Adults with Frailty and Non-ST-Segment Elevation Acute Myocardial Infarction: A Randomized Clinical Trial. *JAMA Intern Med*. 2023;183(5):407-415. doi:10.1001/jamainternmed.2023.0047

KEY TAKEAWAY: Invasive management with coronary angiography and revascularization in frail older patients with NSTEMI was not superior to medical management with regard to days alive outside of the hospital.

STUDY DESIGN: Multicenter, parallel-group, unblinded, randomized clinical trial

LEVEL OF EVIDENCE: STEP 3 (downgraded due to significant limitations and contradicts prior results warranting further evaluation)

BRIEF BACKGROUND INFORMATION: Frailty negatively impacts prognosis in older patients with NSTEMI. Previous studies on patients with frailty and NSTEMI are limited and reportedly no randomized clinical trials have been conducted on the management of NSTEMI in this patient population. Previous studies in older patients with NSTEMI have demonstrated superiority of invasive management though frailty was not specifically accounted for. The best management strategy for older patients with frailty and NSTEMI has not been established.

PATIENTS: Frail older adults (70 years old and older) with NSTEMI

INTERVENTION: Routine invasive strategy

CONTROL: Conservative strategy

PRIMARY OUTCOME: Days alive out of hospital (DAOH) and composite of cardiac death, reinfarction, or post-discharge revascularization.

METHODS (BRIEF DESCRIPTION):

- Patient enrollment: 169 patients from 13 Spanish hospitals were recruited; 167 patients were enrolled and randomized.
- Inclusion criteria: NSTEMI defined by symptoms of acute MI, absence of ST elevation and troponin elevation present, age ≥70 years old; clinical frailty score ≥4.
    - Scored from one being very fit, to nine being terminally ill.
    - A score of four indicates living with very mild frailty, not dependent on others for daily assistance but often having symptoms that limit activity and mark an early transition from complete independence.
- Exclusion criteria: Known "non-revascularizeable" coronary artery disease, significant non-ischemic heart disease, inability to provide informed consent, and life expectancy of less than 12 months.
- Additionally, the attending cardiologist had final consideration to deem participation in the study as reasonable.
- Patients were randomized to one of two groups (routine invasive strategy or conservative strategy) within 48 hours of admission using computer-generated randomization with allocations concealed.
- Routine invasive strategy consisted of coronary angiography within 72 hours of admission with revascularization if appropriate.
- Conservative strategy consisted of medical therapy only with cardiac catheterization for cases of recurrent ischemia.
- A standardized duration for dual antiplatelet therapy was set at one year in both study arms.
- In patients with high bleeding risk or in cases requiring concurrent oral anticoagulation, one anti-platelet drug could be discontinued after the first month at the discretion of the treating physician.
- Treatment groups were unbalanced after randomization with a statistically significant higher proportion of males, and patients with prior MI, PCI, and CABG in the conservative management group.

INTERVENTION (# IN THE GROUP): 84

COMPARISON (# IN THE GROUP): 83

FOLLOW-UP PERIOD: One year

RESULTS:

Primary Outcome –

- Mean days alive out of hospital was less in the conservative management group (294 vs 312)

though this was not statistically significant (MD –29; 95% CI, –7 to –62).

- There was no difference in the composite of cardiac death, reinfarction, or post-discharge revascularization (hazard ratio [HR] 0.92; 95% CI, 0.54–1.6).

LIMITATIONS:

- The study was underpowered for many important outcomes and enrollment ended early due to the COVID-19 pandemic at 95% of the pre-determined goal sample size.
- Information on the number of patients screened for enrollment was not collected and enrollment was slower than expected, raising concern for potential bias in the patient selection/enrollment process.
- The attending cardiologist had the ultimate decision in determining the opportunity for a patient to enroll based on clinical judgment.
- Treatment arms could not be blinded to the patient or provider.
- Enrollment during the COVID-19 pandemic may have skewed results through many factors; notably, reluctance to return to the hospital with subsequent symptoms or medical problems or potential changes in follow-up protocols during the pandemic.
- Randomization failed to provide balanced populations between the two groups regarding multiple characteristics including sex, prior MI, prior PCI, and prior CABG.
- This study conducted in Spain alone may not be generalizable to the US patient population.

Andrew Layne, MD
Marquette Family Medicine Residency
Marquette, MI