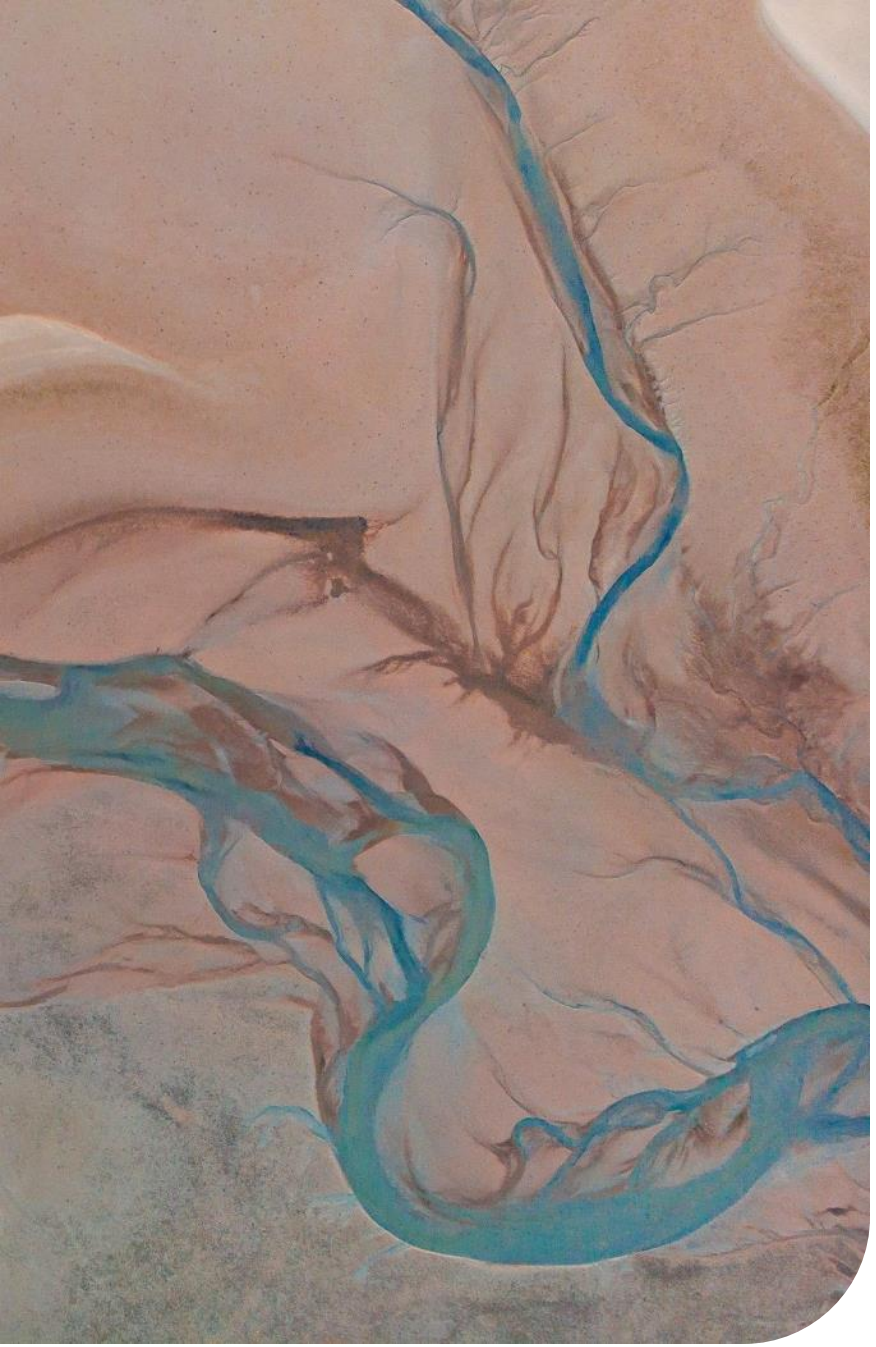
UPDATES IN INTERNAL MEDICINE: ANALYSIS AND REVIEW

ARUNAB MEHTA, MD, FACP, SFHM

DISCLOSURES

- Ad board for Bayer



ARTICLE SELECTION

Practice Changing and/or practice confirming

September 2024 through September 2025

Journals completely reviewed: Annals of IM, Journal of Hospital Medicine, NEJM, JAMA

HOW WE'LL DO THIS

01

9 Most Influential Articles (per me)

02

Interactive ratings for each article

03

GLP1 article flashback

QUESTIONS TO BE ANSWERED

- Do you treat both partners for bacterial vaginosis?

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- Is 3 months enough for treatment of provoked VTE?
- Is stopping beta blockers many years after an MI safe?
- Should we consider MRA therapy with finerenone in HF with EF > 40%?
- Should we be "cath"-ing older patients with ACS?

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 MARCH 6, 2025 VOL. 392 NO. 10

Male-Partner Treatment to Prevent Recurrence of Bacterial Vaginosis

Lenka A. Vodstrcil, Ph.D.,[1-3] Erica L. Plummer, Ph.D.,[1,2] Christopher K. Fairley, Ph.D.,[1,2] Jane S. Hocking, Ph.D.,[3] Matthew G. Law, Ph.D.,[4] Kathy Petoumenos, Ph.D.,[4] Deborah Bateson, M.D.,[5] Gerald L. Murray, Ph.D.,[6-8] Basil Donovan, M.D.,[4] Eric P. F. Chow, Ph.D.,[1-3] Marcus Y. Chen, Ph.D.,[1,2] John Kaldor, Ph.D.,[4] and Catriona S. Bradshaw, Ph.D.,[1-3] for the StepUp Team*

ABSTRACT

BACKGROUND

Bacterial vaginosis affects one third of reproductive-aged women, and recurrence is common. Evidence of sexual exchange of bacterial vaginosis–associated organisms between partners suggests that male-partner treatment may increase the likelihood of cure.

METHODS

This open-label, randomized, controlled trial involved couples in which a woman had bacterial vaginosis and was in a monogamous relationship with a male partner. In the partner-treatment group, the woman received first-line recommended antimicrobial agents and the male partner received oral and topical antimicrobial treatment (metronidazole 400-mg tablets and 2% clindamycin cream applied to penile skin, both twice daily for 7 days). In the control group, the woman received first-line treatment and the male partner received no treatment (standard care). The primary out-

Author affiliations are listed at the end of the article. Drs. Vodstrcil and. Bradshaw can be contacted at lenka.vodstrcil@monash.edu and catriona.bradshaw@monash.edu, respectively, or at the Melbourne Sexual Health Centre, 580 Swanston St., Carlton 3053, VIC, Australia.

*The StepUp Team members are listed in the Supplementary Appendix, available at NEJM.org.

N Engl J Med 2025;392:947-57.
DOI: 10.1056/NEJMoa2405404

WHY IS THIS PAPER IMPORTANT?

- Bacterial vaginosis affects one-third of reproductive age women. Recent evidence that bacterial vaginosis-related organisms might be transmitted sexually made us think of possibly treating the male partner to prevent recurrence.

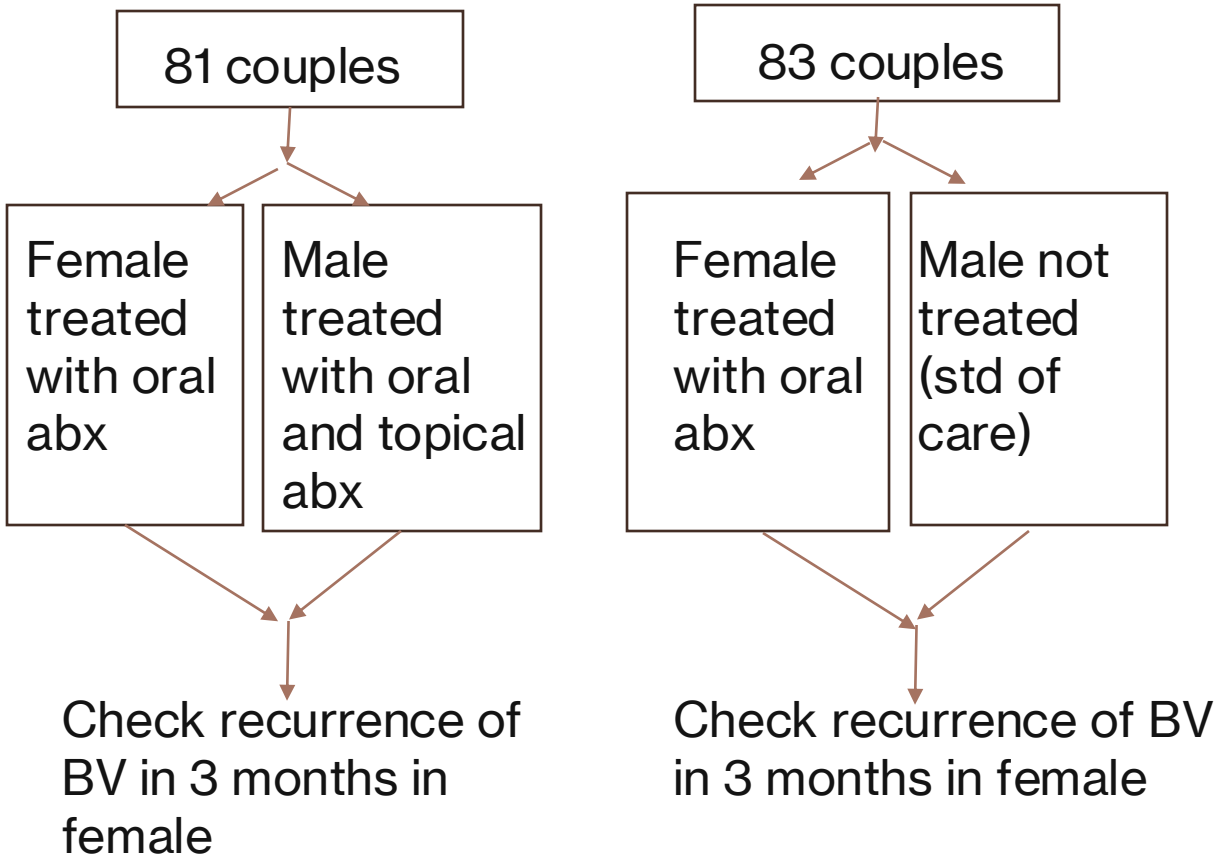
METHODS

Open-label, randomized, controlled trial

2019-2023

5 sites across Australia

STUDY OVERVIEW



OUTCOMES

- Primary Outcome: Recurrence of Bacterial Vaginosis (defined by 3 Amsel criteria and Nugent score 4-10) within 12 weeks

BASELINE CHARACTERISTICS

Table 1. Baseline Characteristics of All Randomly Assigned Participants Who Fulfilled Eligibility Criteria for the Trial.*

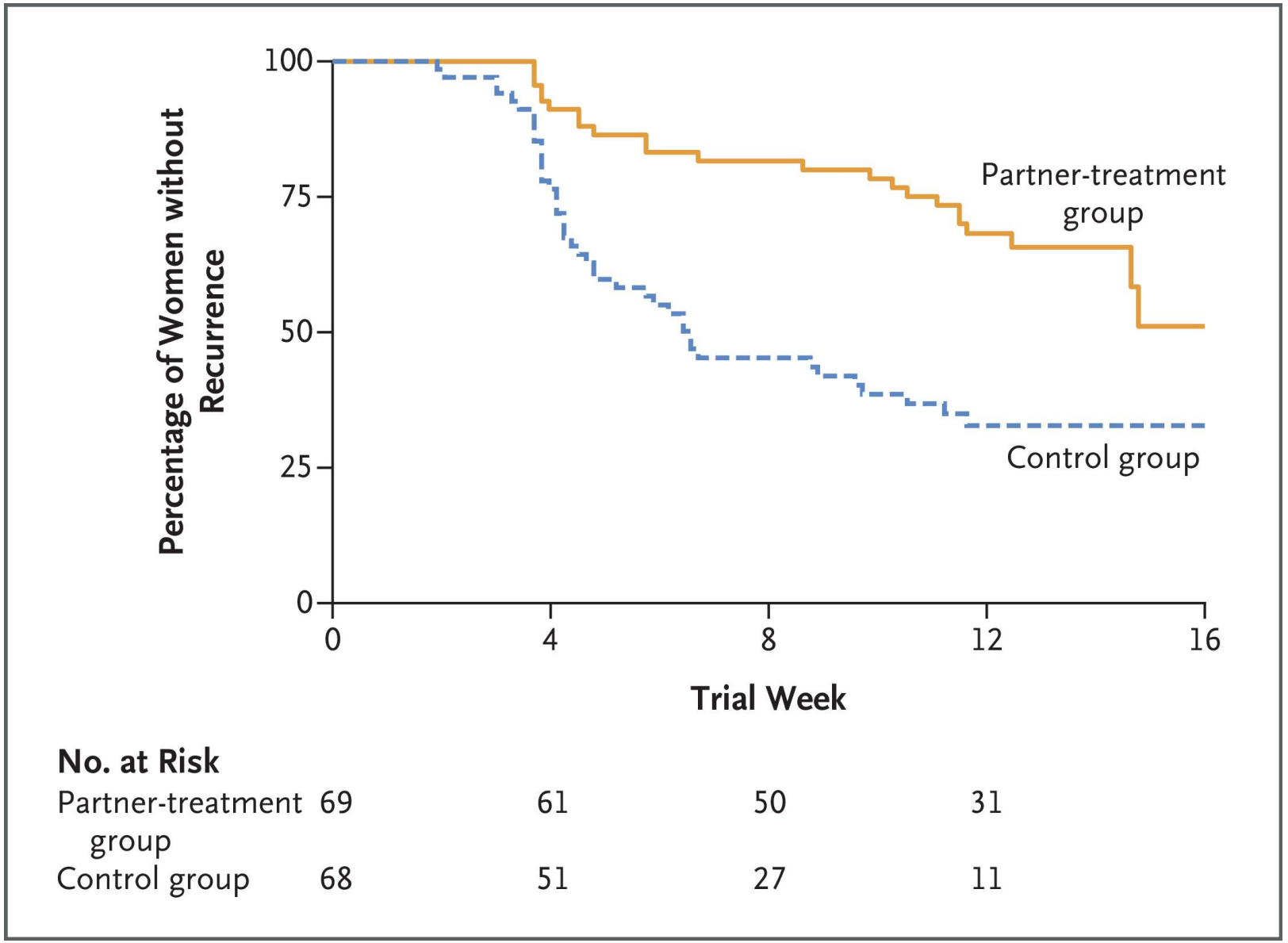
Characteristic	Partner-Treatment Group (N=80)	Control Group (N=79)
Female participants		
Age at randomization — yr	28.5±6.6	30.9±7.5
Participant-reported ethnic background, grouped according to WHO region — no./total no. (%)		
Region of the Americas	9/80 (11)	4/77 (5)
South-East Asian Region	3/80 (4)	1/77 (1)
European Region	20/80 (25)	28/77 (36)
Western Pacific†	44/80 (55)	37/77 (48)
Mixed ethnic background	4/80 (5)	7/77 (9)
Current IUD use — no. (%)‡	22 (28)	26 (33)
Median no. of previous diagnoses of bacterial vaginosis (IQR)§	3 (1–5)	3 (1–5)
Median no. of male sexual partners during lifetime (IQR)	15 (7–24)	15 (8–30)
Median no. of female sexual partners during lifetime (IQR)	0 (0–2)	0 (0–4)
Median duration of sexual relationship with regular male partner (IQR) — mo	14 (6–36)	14 (6–37)
Median no. of times per month reporting vaginal sex with regular male partner (IQR)	12 (8–16)	8 (4–16)
Always uses condom with regular male partner for vaginal sex — no./total no. (%)	2/78 (3)	4/75 (5)
Clinical findings at enrollment		
Vaginal pH >4.5 — no./total no. (%)	77/79 (97)	74/76 (97)
Characteristic homogeneous vaginal discharge — no. (%)	77 (96)	76 (96)
Fishy odor or positive amine test — no. (%)	75 (94)	74 (94)
Presence of clue cells visualized on wet mount — no./total no. (%)	76/80 (95)	70/78 (90)
Nugent score of 4–6 — no. (%)¶	11 (14)	10 (13)
Nugent score of 7–10 — no. (%)¶	69 (86)	69 (87)
Male participants		
Age at randomization — yr	31.1±8.7	34.2±8.0
Uncircumcised — no. (%)‡	64 (80)	63 (80)
Participant-reported ethnic background, grouped according to WHO region — no./total no. (%)		
Africa Region	1/72 (1)	1/69 (1)
Region of the Americas	4/72 (6)	7/69 (10)
European Region	22/72 (31)	24/69 (35)
Eastern Mediterranean Region	2/72 (3)	1/69 (1)
Western Pacific†	38/72 (53)	33/69 (48)
Mixed ethnic background	5/72 (7)	3/69 (4)
Median no. of female sexual partners during lifetime (IQR)	18 (10–40)	20 (10–40)

RESULTS

Recurrence in 24/69 (35%) in partner treatment group

Recurrence in 43/68 (63%) in control group

HR 0.37 (95% CI, 0.22 to 0.61)



CONCLUSION

- The addition of combined oral and topical antimicrobial therapy for male partners to treatment of women for bacterial vaginosis resulted in a lower rate of recurrence of bacterial vaginosis within 12 weeks than standard care.

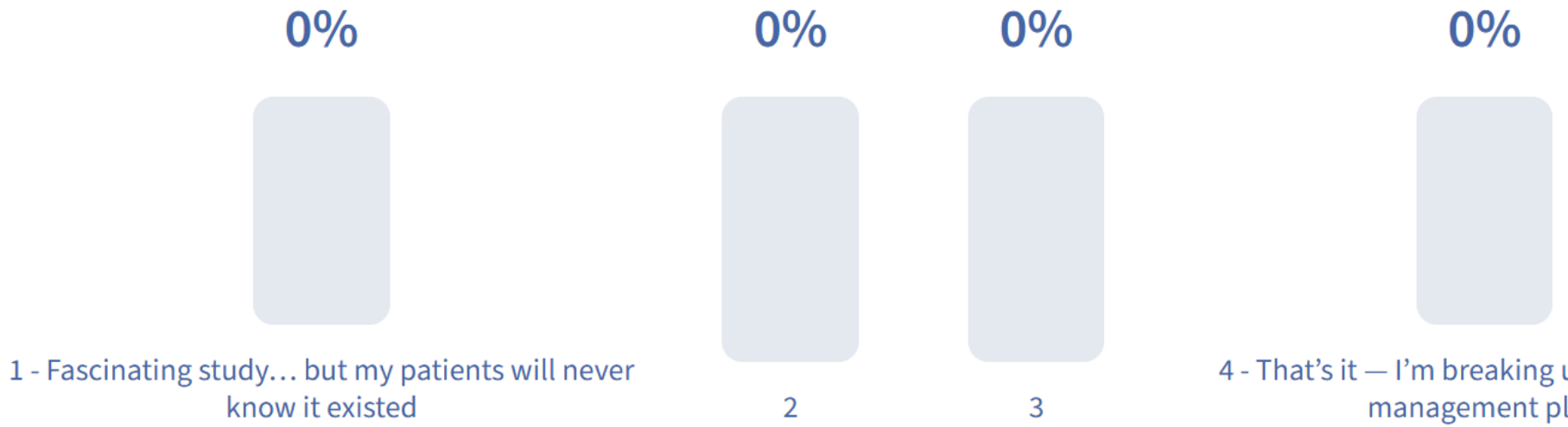
MY CONCLUSION

This is a paradigm shift; we should always treat the partner in bacterial vaginosis cases.

ACOG guidelines Oct 2025 now support treating sexual partner in BV patients.

When poll is active respond at **PollEv.com/arunabmehta145**

How does this trial change your clinical practice?



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The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 APRIL 10, 2025 VOL. 392 NO. 14

Extended Reduced-Dose Apixaban for Cancer-Associated Venous Thromboembolism

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API-CAT trial

ABSTRACT

BACKGROUND

In patients with active cancer and venous thromboembolism, whether extended treatment with a reduced dose of an oral anticoagulant is effective in preventing recurrent thromboembolic events and decreasing bleeding is unclear.

METHODS

We conducted a randomized, double-blind, noninferiority trial with blinded central outcome adjudication. Consecutive patients with active cancer and proximal deep-vein thrombosis or pulmonary embolism who had completed at least 6 months of anticoagulant therapy were randomly assigned in a 1:1 ratio to receive oral apixaban at a reduced (2.5 mg) or full (5.0 mg) dose twice daily for 12 months. The primary outcome was centrally adjudicated fatal or nonfatal recurrent venous thromboembolism, assessed in a noninferiority analysis (margin of 2.00 for the upper boundary of the 95% confidence interval of the subhazard ratio). The key secondary outcome

The authors' full names, academic degrees, and affiliations are listed at the end of the article. Dr. Mahé can be contacted at isabelle.mahe@aphp.fr or at Hôpital Louis Mourier, Service de Médecine Interne, Assistance Publique–Hôpitaux de Paris, Université Paris Cité, 178 Rue des Renouillers, 92700 Colombes, France.

*Deceased.

†A list of the API-CAT investigators is provided in the Supplementary Appendix, available at NEJM.org.

This article was published on March 29, 2025, at NEJM.org

WHY IS THIS PAPER IMPORTANT?

- While we recently have started reducing the dose of DOACs to half dose after 6 months of therapy for VTE, we were not doing this for patients with active malignancy.

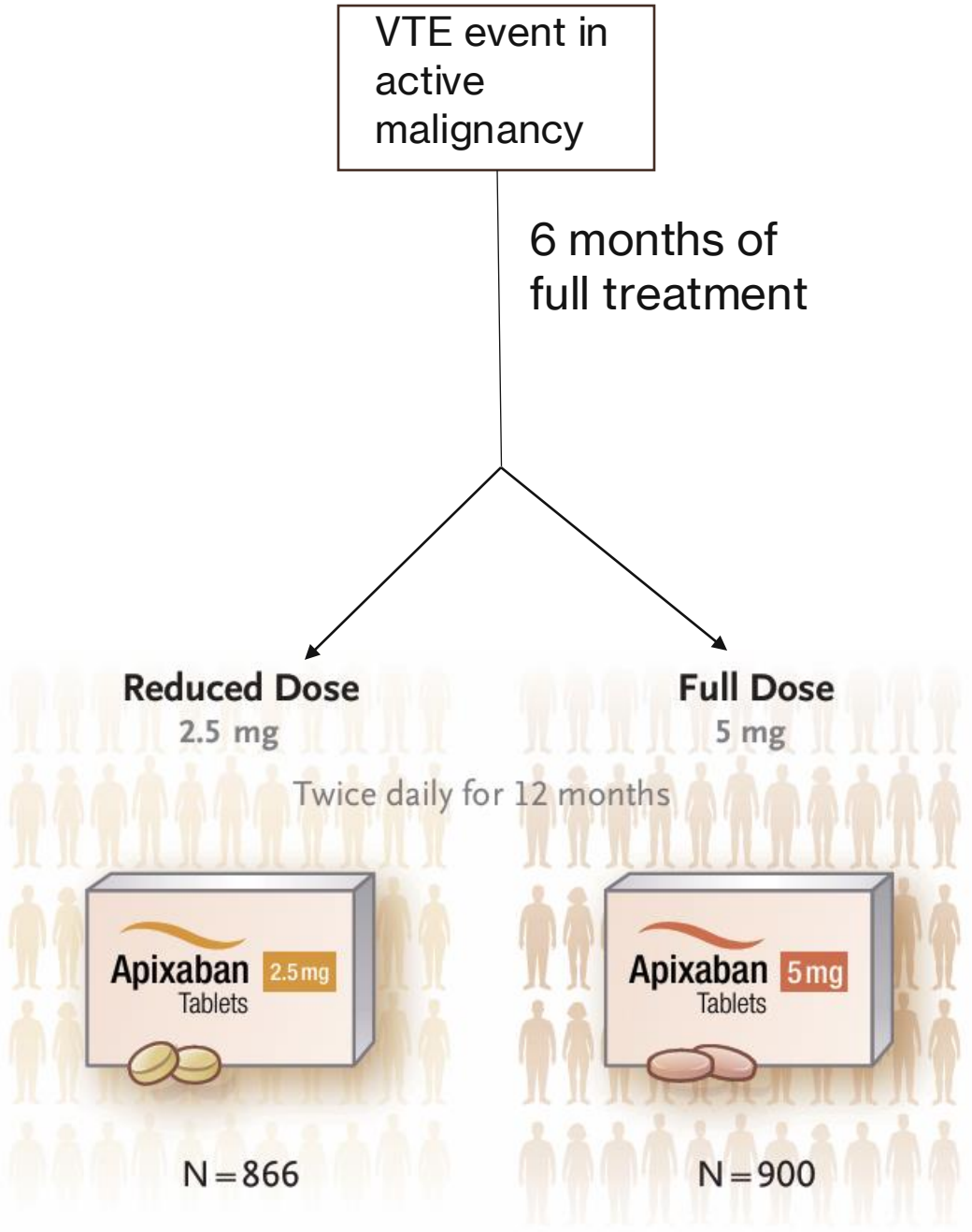
METHODS

Prospective, Double-blind, Randomized, Controlled trial

International (121 centers in 11 countries), non-inferiority

Funded by the Bristol-Myers Squibb–Pfizer Alliance

STUDY OVERVIEW



OUTCOMES

Primary Outcome: fatal or nonfatal recurrent VTE over 12 months of follow-up

Secondary (safety) outcome: Clinically relevant bleeding

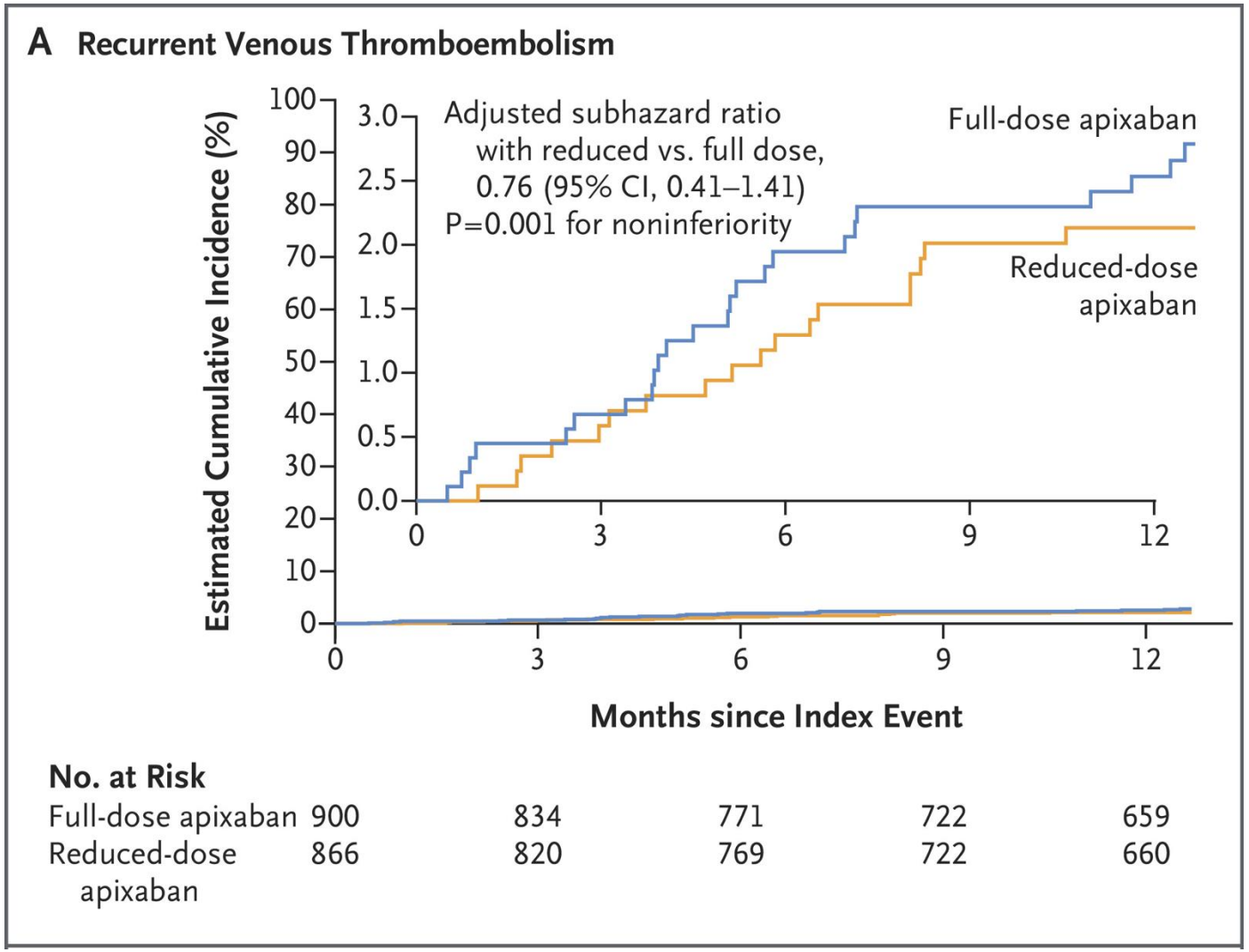
BASELINE CHARACTERISTICS

Table 1. Demographic and Clinical Characteristics of the Patients at Baseline (Intention-to-Treat Population).*

Characteristic	Reduced-Dose Apixaban (N=866)	Full-Dose Apixaban (N=900)
Age — yr	67.2±11.0	67.7±11.4
Male sex — no. (%)	375 (43.3)	391 (43.4)
Body weight — kg	75.7±16.3	75.7±16.4
Body-mass index†	27.0±5.3	27.0±5.4
Platelet count <100,000/mm^3 — no./total no. (%)	18/863 (2.1)	15/899 (1.7)
Creatinine clearance <50 ml/min — no./total no. (%)	115/864 (13.3)	127/900 (14.1)
Qualifying diagnosis of venous thromboembolism — no. (%)		
Pulmonary embolism with or without lower-limb proximal deep-vein thrombosis	669 (77.3)	665 (73.9)
Lower-limb proximal deep-vein thrombosis only	197 (22.7)	235 (26.1)
Clinical manifestation of index venous thromboembolism — no./total no. (%)		
Symptomatic deep-vein thrombosis or pulmonary embolism	528/856 (61.7)	580/888 (65.3)
Incidental pulmonary embolism	290/856 (33.9)	275/888 (31.0)
Incidental deep-vein thrombosis only	38/856 (4.4)	33/888 (3.7)
History of venous thromboembolism — no. (%)	157 (18.1)	170 (18.9)
Active cancer — no. (%)‡	864 (99.8)	897 (99.7)
Stage of cancer — no. (%)		
Localized	111 (12.8)	117 (13.0)
Locally advanced	115 (13.3)	113 (12.6)
Metastatic	574 (66.3)	584 (64.9)
Other	64 (7.4)	83 (9.2)
Unknown	2 (0.2)	3 (0.3)
Site of cancer — no. (%)		
Breast	199 (23.0)	202 (22.4)
Prostate	77 (8.9)	87 (9.7)
Colon or rectum	123 (14.2)	148 (16.4)
Lung	99 (11.4)	100 (11.1)
Other	368 (42.5)	363 (40.3)
ECOG performance-status score — no. (%)§		
0	456 (52.7)	504 (56.0)
1	342 (39.5)	329 (36.6)
2	67 (7.7)	63 (7.0)
Unknown	1 (0.1)	4 (0.4)

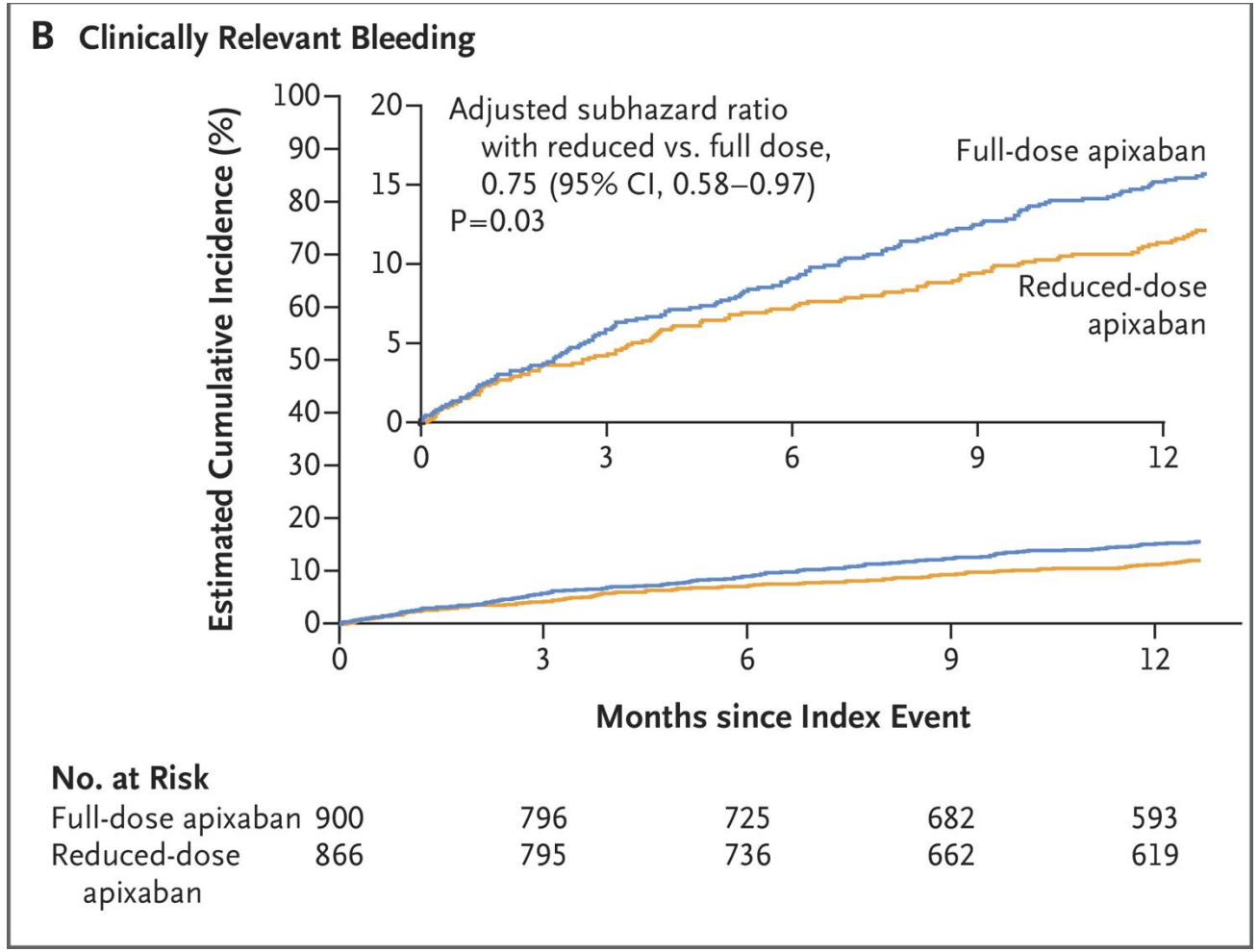
RESULTS

Primary Outcome: 18 in reduced dose vs 24 in full dose
HR 0.76 (95% CI, 0.41 – 1.41;
P = 0.001 for non-inferiority)



RESULTS

Safety event (CRB) = 102 in reduced dose vs 136 in full dose
Sub-HR = 0.75 (95% CI, 0.58 – 0.97; P = 0.03)



CONCLUSIONS

- Extended anticoagulation with reduced-dose apixaban was noninferior to full-dose apixaban for the prevention of recurrent venous thromboembolism in patients with active cancer.
- The reduced dose led to a lower incidence of clinically relevant bleeding complications than the full dose.

MY CONCLUSIONS

- I would use reduced dose of apixaban after 6 months of full dose treatment in patients with active malignancy.
- No change in guidelines yet (but I think there will be eventually).

When poll is active respond at **PollEv.com/arunabmehta145**

How does this trial change your clinical practice?

0%	0%	0%	0%
1 - I'll file that under 'fun facts I'll never use'	2	3	4 - Looks like my old habits just got a discharge summary

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JAMA Internal Medicine | Original Investigation

Lactated Ringer vs Normal Saline Solution During Sickle Cell Vaso-Occlusive Episodes

Augusta K. Alwang, MD; Anica C. Law, MD, MS; Elizabeth S. Klings, MD; Robyn T. Cohen, MD, MPH; Nicholas A. Bosch, MD, MSc

IMPORTANCE Sickle cell disease (SCD), a clinically heterogenous genetic hemoglobinopathy, is characterized by painful vaso-occlusive episodes (VOEs) that can require hospitalization. Patients admitted with VOEs are often initially resuscitated with normal saline (NS) to improve concurrent hypovolemia, despite preclinical evidence that NS may promote erythrocyte sickling. The comparative effectiveness of alternative volume-expanding fluids (eg, lactated Ringer [LR]) for resuscitation during VOEs is unclear.

OBJECTIVE To compare the effectiveness of LR to NS fluid resuscitation in patients with SCD and VOEs.

DESIGN, SETTING, AND PARTICIPANTS This multicenter cohort study and target trial emulation included inpatient adults with SCD VOEs who received either LR or NS on hospital day 1. The Premier PINC AI database (2016-2022), a multicenter clinical database including approximately 25% of US hospitalizations was used. The analysis took place between October 6, 2023, and June 20, 2024.

EXPOSURE Receipt of LR (intervention) or NS (control) on hospital day 1.

Invited Commentary page 1372

Supplemental content

WHY IS THIS PAPER IMPORTANT?

- Sickle cell vaso-occlusive crises almost always get IV fluids during their inpatient stay. They get normal saline or lactated ringer solutions and the choice is up to the provider.

METHODS

Target trial emulation study

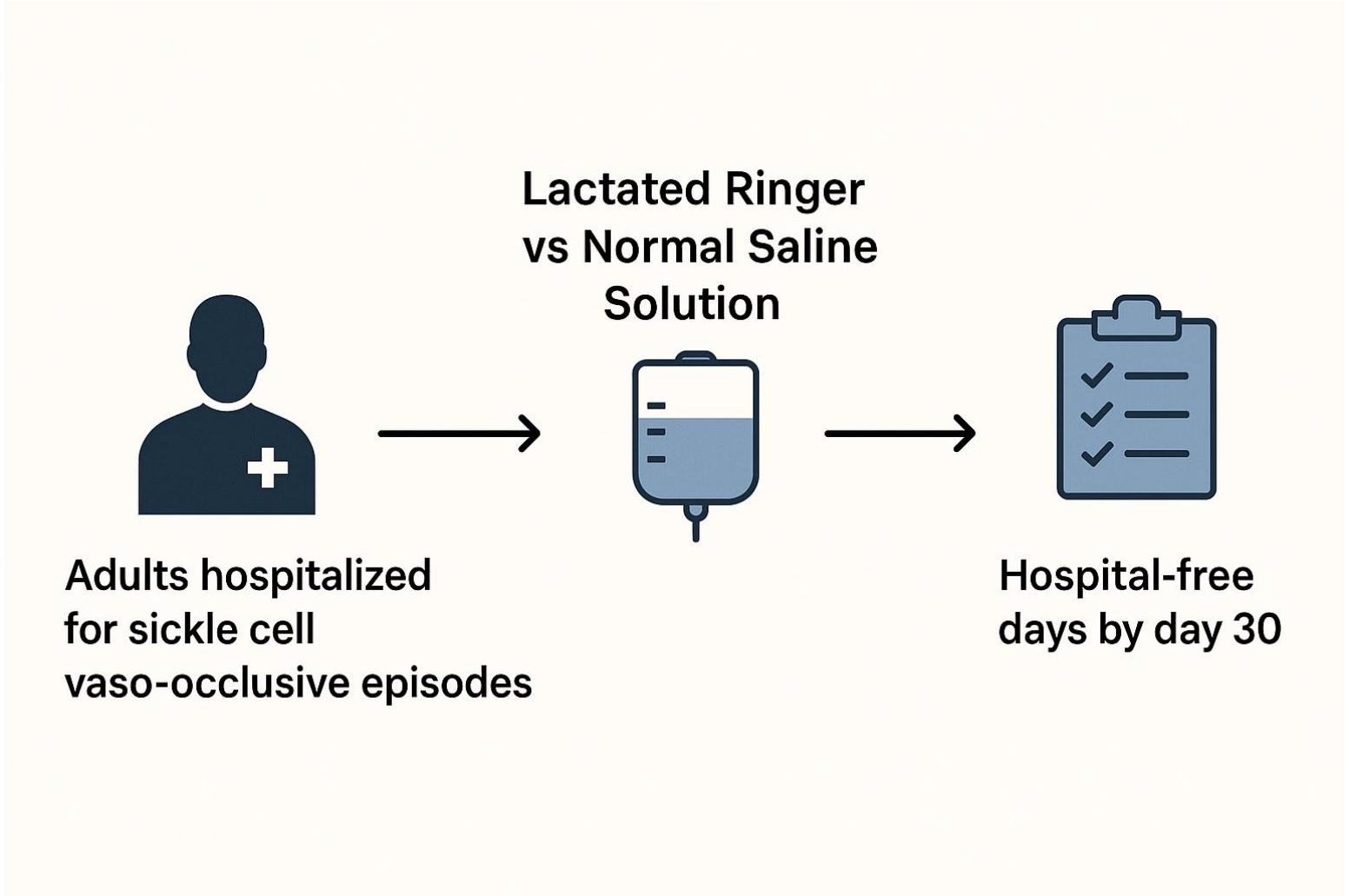
Retrospective cohort study

Oct 2023- June 2024

Multicenter (database included 25% US hospitalizations)

Included patients who got either NS or LR on day 1 of hospitalization (excluded those that got both)

STUDY OVERVIEW



OUTCOMES

Primary Outcome: Hospital Free days at 30 days

Secondary Outcomes:

(1) intravenous opioid-free days by day 30

(2) blood transfusion–free days by day 30

(3) Organ support–free(kidney replacement therapy, invasive mechanical ventilation, or vasopressor use) days by day 30

(4) hospital mortality by day 30

(5) intravenous diuretic use by day 30 (a surrogate for hypervolemia)

(6) 30-day readmission

(7)Hospital length of stay by day 30

BASELINE CHARACTERISTICS

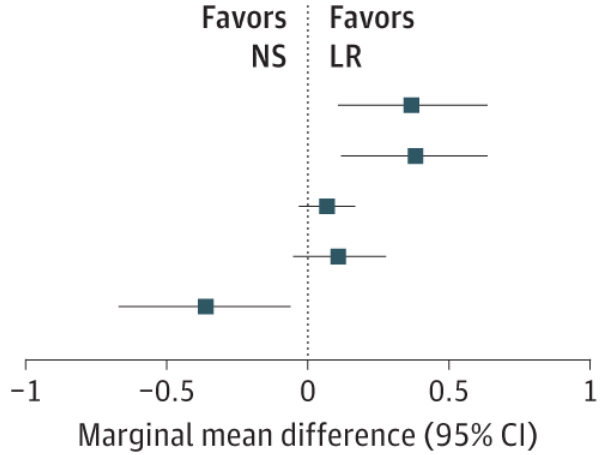
Table 1. Characteristics of Patients Admitted for Vaso-Occlusive Episodes

Characteristic	No. (%) Overall (N = 55 574)	LR (n = 3495)	NS (52 079)	SMD
Demographics				
Age, median (IQR), y	30 (25-37)	29 (24-36)	30 (25-37)	0.08
Sex				0.06
Female	30 396 (54.7)	NA[a]	NA[a]	
Male	25 153 (45.3)	NA[a]	NA[a]	
Unknown	25 (0.0)	NA[a]	NA[a]	
Race[b]				0.11
Asian	101 (0.2)	6 (0.2)	95 (0.2)	
Black	51 162 (92.1)	3304 (94.5)	47 858 (91.9)	
White	944 (1.7)	44 (1.3)	900 (1.7)	
Other	2853 (5.1)	120 (3.4)	2733 (5.2)	
Unknown	514 (0.9)	21 (0.6)	493 (0.9)	
Characteristics present on admission				
Angus organ dysfunctions				
Cardiac	590 (1.1)	28 (0.8)	562 (1.1)	0.03
Respiratory	1203 (2.2)	117 (3.3)	1086 (2.1)	0.08
Neurologic	255 (0.5)	21 (0.6)	234 (0.4)	0.02
Hematologic	1769 (3.2)	107 (3.1)	1662 (3.2)	0.007
Hepatic	64 (0.1)	6 (0.2)	58 (0.1)	0.02
Kidney	2919 (5.3)	158 (4.5)	2761 (5.3)	0.04
Angus sepsis criteria	1447 (2.6)	94 (2.7)	1353 (2.6)	0.006
Gagne comorbidity score, median (IQR)	3 (0-4)	3 (0-4)	3 (0-4)	0.07
Kidney failure	3169 (5.7)	147 (4.2)	3022 (5.8)	0.07
Congestive heart failure	4548 (8.2)	221 (6.3)	4327 (8.3)	0.08
Pulmonary circulation disorder	3717 (6.7)	256 (7.3)	3461 (6.6)	0.03
Hb-SS disease	47 303 (85.1)	2848 (81.5)	44 455 (85.4)	0.10
Acute chest syndrome	3689 (6.6)	247 (7.1)	3442 (6.6)	0.02
Care received on hospital day 1				
Major surgery	50 (0.1)	5 (0.1)	45 (0.1)	0.02
Admission to the ICU	693 (1.2)	49 (1.4)	644 (1.2)	0.01
Admission to the intermediate care unit	8058 (14.5)	251 (7.2)	7807 (15.0)	0.25
Invasive mechanical ventilation use	36 (0.1)	NA[a]	NA[a]	0.003
Noninvasive mechanical ventilation use	184 (0.3)	NA[a]	NA[a]	0.03
Hydroxyurea use	17 760 (32.0)	1204 (34.4)	16 556 (31.8)	0.06
Volume of fluid received, median (IQR), L[c]	2 (1-3)	1 (1-2)	2 (1-3)	0.45

RESULTS

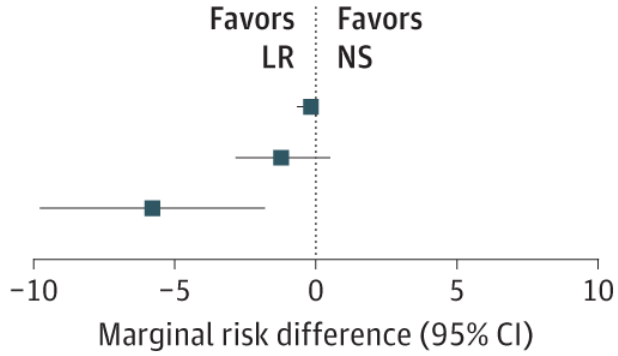
A Free day and length-of-stay outcomes

Outcome	LR, mean (SD)	NS, mean (SD)	Marginal mean difference (95% CI)
Hospital-free days (primary outcome)	24.8 (4.5)	24.7 (4.4)	0.37 (0.11 to 0.64)
Intravenous opioid-free days	25.1 (4.3)	24.9 (4.2)	0.38 (0.12 to 0.64)
Organ support-free days	29.9 (1.2)	29.9 (1.8)	0.07 (−0.03 to 0.17)
Blood transfusion-free days	29.9 (1.2)	29.9 (1.8)	0.11 (−0.05 to 0.28)
Hospital LOS in days[a]	5.2 (4.4)	5.2 (4.2)	−0.36 (−0.67 to −0.06)



B Dichotomous outcomes

Outcome, %	LR count, mean (SD)	NS count, mean (SD)	Marginal risk difference (95% CI)
Hospital mortality	4 (0.1)	169 (0.3)	−0.2 (−0.6 to 0.1)
Intravenous diuretic use	140 (4.0)	3309 (6.4)	−1.2 (−2.9 to 0.5)
30-d Readmission	1768 (50.6)	24043 (46.2)	−5.8 (−9.8 to −1.8)



CONCLUSIONS

- Compared with NS, LR had a small but significant improvement in Hospital Free Days and secondary outcomes including 30-day readmission. These results suggest that, among patients with VOEs in whom clinicians plan to give volume resuscitation fluids on hospital admission, LR should be preferred over NS.

MY CONCLUSION

- I might favor LR over NS instead of being agnostic.

When poll is active respond at **PollEv.com/arunabmehta145**

How does this trial change your practice?

0%	0%	0%	0%
1 - Ah yes, another paper that	2	3	4 - Time to retire my

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Annals of Internal Medicine

ORIGINAL RESEARCH

Assessing the Risk for Falls in Older Adults After Initiating Gabapentin Versus Duloxetine

Alexander Chaitoff, MD, MPH; Rishi J. Desai, PhD; Niteesh K. Choudhry, MD, PhD; Katharina T. Jungo, PhD; Nancy Haff, MD, MPH; and Julie C. Lauffenburger, PharmD, PhD

Background: The evidence informing the harms of gabapentin use are at risk of bias from comparing users with nonusers.

Objective: To describe the risk for fall-related outcomes in older adults starting treatment with gabapentin versus duloxetine.

Design: New user, active comparator study using a target trial emulation framework.

Setting: MarketScan (IBM) commercial claims between

inverse probability of treatment weighting was used to adjust for baseline characteristics.

Results: Our analytic cohort included 57 086 older adults with a diagnosis of interest initiating treatment with gabapentin ($n = 52\,152$) or duloxetine ($n = 4934$). Overall median follow-up duration was 30 days (IQR, 30 to 90 days). Weighted cumulative incidence of a fall-related visit per 1000 person-years at 30, 90, and 180 days was 103.60, 90.44, and 84.44 for gabapentin users and 203.43, 177.73, and 158.21 for duloxetine

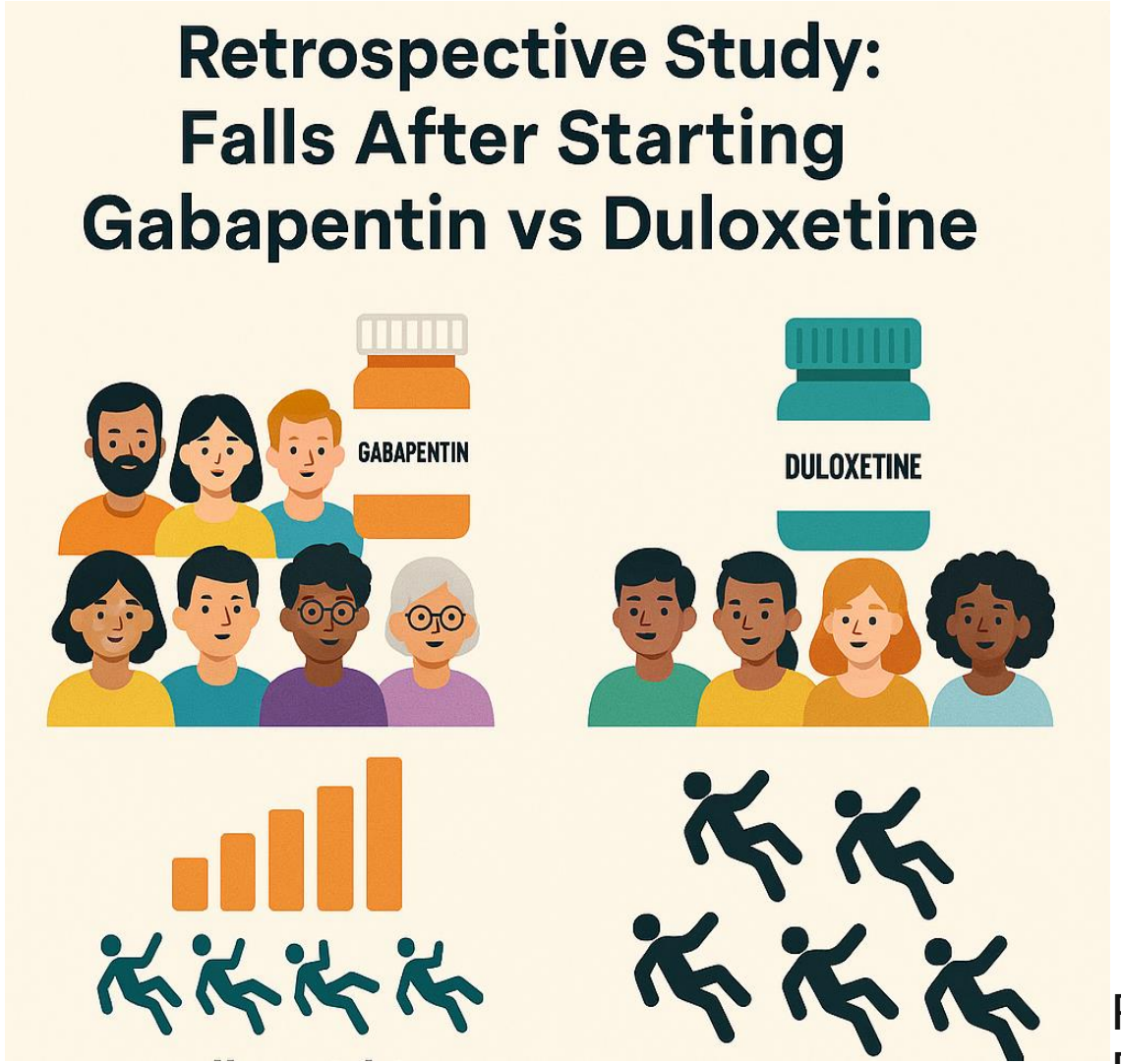
WHY IS THIS PAPER IMPORTANT?

- We have been told repeatedly that gabapentin is a medication that has increasingly known side effects, FDA/NHS suggests titrating slowly and carefully due to risk of falls, drowsiness.

METHODS

- Design:
  - New user, active comparator study (observational)
  - Target trial emulation network
  - MarketScan (IBM) commercial claims between January 2014 and December 2021
  - USA

STUDY OVERVIEW



Patients > 65 years
Falls after 6 months

OUTCOMES

Primary Outcome: experiencing any fall-related visit in the 6 months after initiating gabapentin or duloxetine until discontinuation of treatment.

Secondary Outcomes: severe fall-related events defined as a fall associated with hip fracture or emergency department visit or hospitalization associated with a fall.

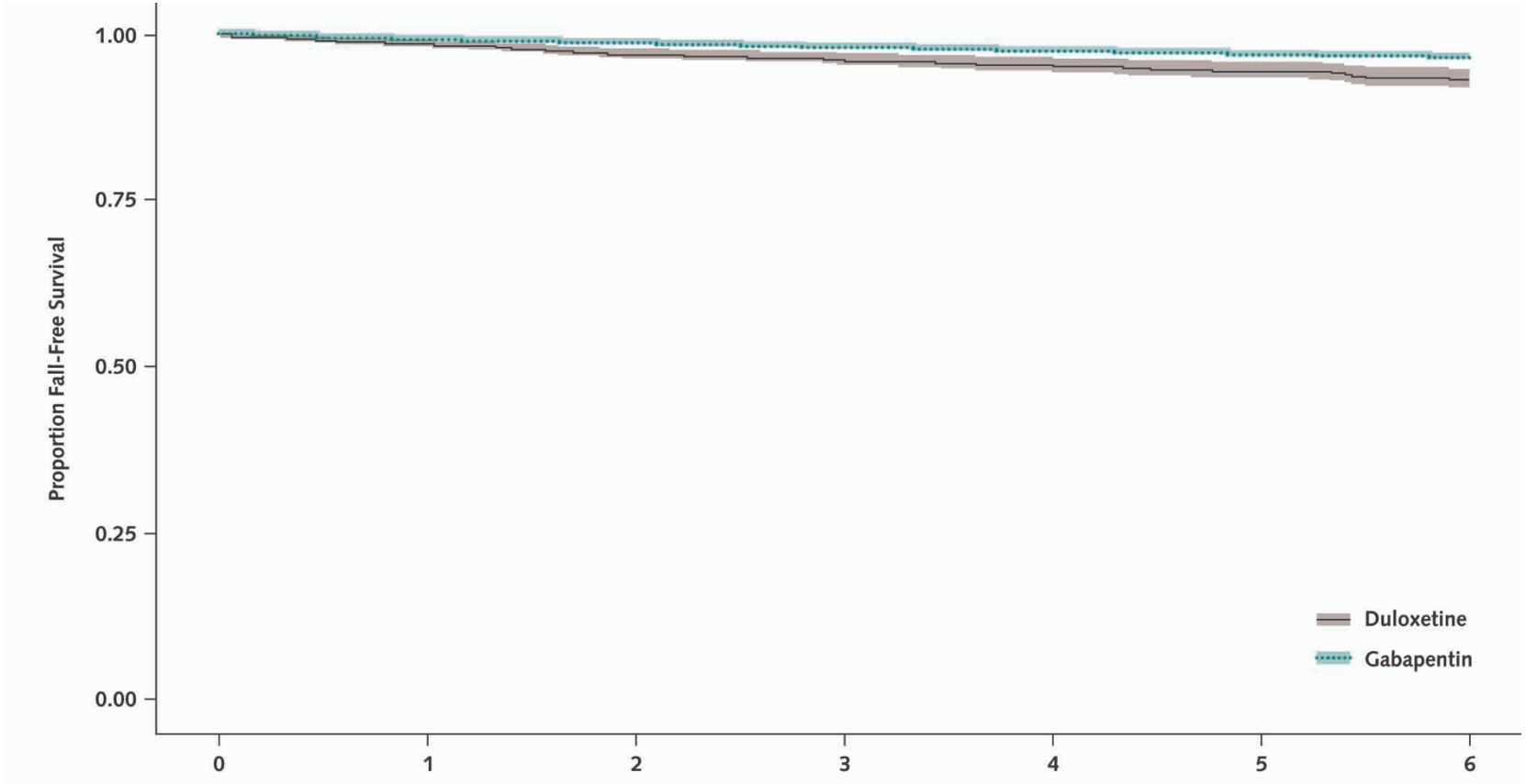
BASELINE CHARACTERISTICS

Variable	Gabapentin (*n* = 52 152)	Duloxetine (*n* = 4934)
Demographic characteristic		
Mean age (SD), *y*	75.34 (7.38)	74.75 (7.15)
Men, *n* (%)	24 655 (47.3)	1788 (36.2)
Falls and general health		
Mean frailty score (SD)	0.18 (0.06)	0.18 (0.06)
Fall in prior year, *n yes* (%)	2621 (5.0)	253 (5.1)
Charlson Comorbidity Index, *n* (%)	—	—
0	13 365 (25.6)	1190 (24.1)
1–2	22 392 (42.9)	2257 (45.7)
≥3	16 395 (31.4)	1487 (30.1)

Pain conditions, *n yes* (%)		
Diabetic neuropathic pain	41 713 (80.0)	3447 (69.9)
Fibromyalgia	5739 (11.0)	1629 (33.0)
Headache/migraine	4767 (9.1)	540 (10.9)
Osteoarthritis	20 333 (39.0)	2440 (49.5)
Postherpetic neuralgia	7734 (14.8)	268 (5.4)

Medication use, *n yes* (%)		
Antipsychotics	909 (1.7)	113 (2.3)
Benzodiazepines	6499 (12.5)	850 (17.2)
Corticosteroids (inhaled)	11 039 (21.2)	1192 (24.2)
Corticosteroids (oral)	15 552 (29.8)	1546 (31.3)
Noninsulin diabetes medication	19 074 (36.6)	1531 (31.0)
Sleep aids	3098 (5.9)	408 (8.3)
Antihypertensive medication	43 131 (82.7)	4019 (81.5)
Anticholinergic bronchodilator	2610 (5.0)	251 (5.1)
Anticoagulant medication	7563 (14.5)	641 (13.0)
Antiplatelet medication	7038 (13.5)	620 (12.6)

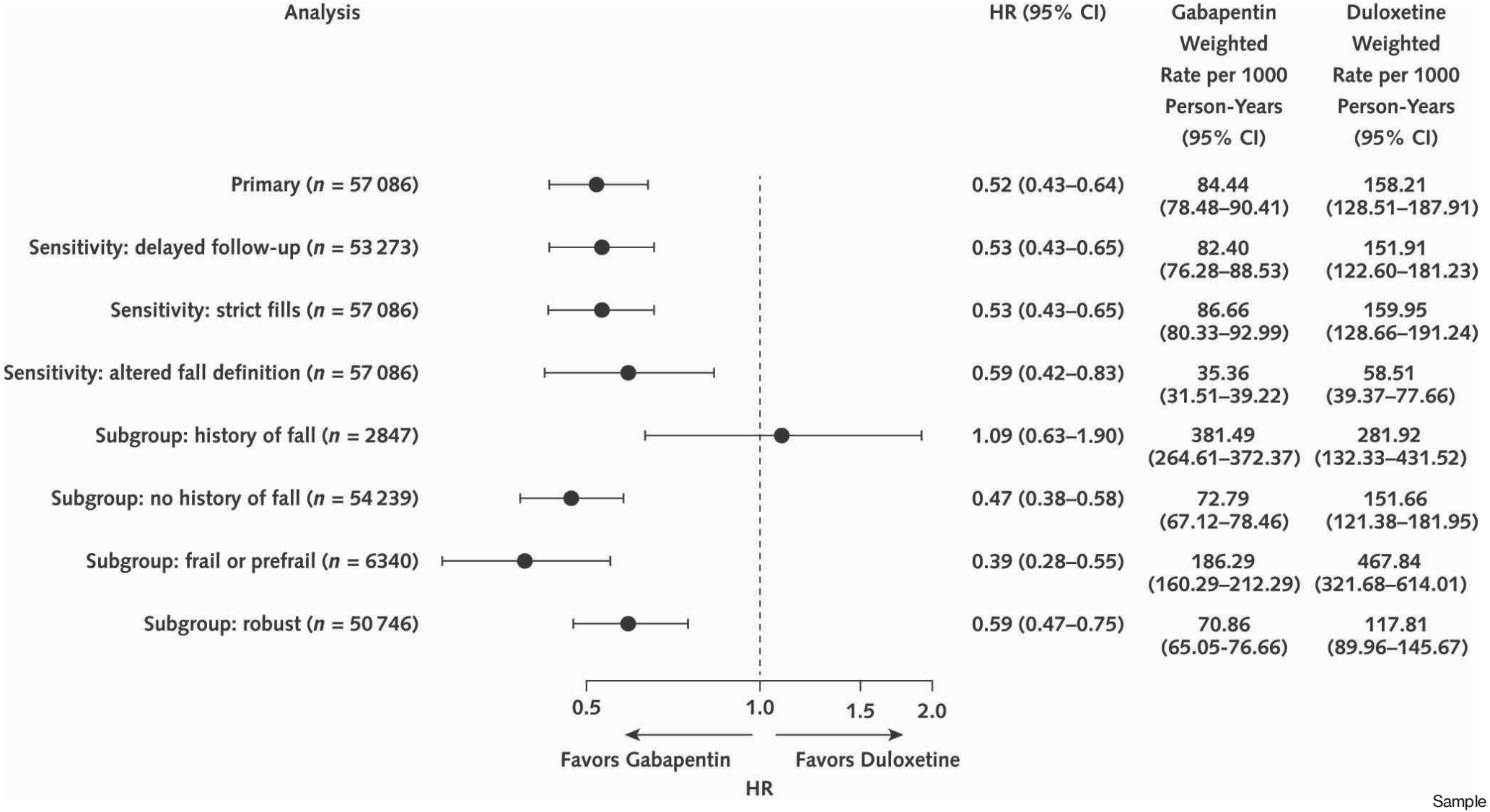
RESULTS



Duloxetine, *n*							
Total at risk	4934	4254	2187	1791	1237	1069	901
Total events	0	60	95	113	124	132	143
Gabapentin, *n*							
Total at risk	52 152	43 166	19 328	15 059	9530	7737	6239
Total events	0	393	522	633	692	736	775

At 6-month follow-up, **incident gabapentin users had lower hazard of falls** (hazard ratio, 0.52 [95% CI, 0.43 to 0.64]), but there was no difference in the hazards of experiencing severe falls.

RESULTS


Analysis
HR (95% CI)
Gabapentin Weighted Rate per 1000 Person-Years (95% CI)
Duloxetine Weighted Rate per 1000 Person-Years (95% CI)
Primary (n = 57 086)
0.52 (0.43–0.64)
84.44 (78.48–90.41)
158.21 (128.51–187.91)
Sensitivity: delayed follow-up (n = 53 273)
0.53 (0.43–0.65)
82.40 (76.28–88.53)
151.91 (122.60–181.23)
Sensitivity: strict fills (n = 57 086)
0.53 (0.43–0.65)
86.66 (80.33–92.99)
159.95 (128.66–191.24)
Sensitivity: altered fall definition (n = 57 086)
0.59 (0.42–0.83)
35.36 (31.51–39.22)
58.51 (39.37–77.66)
Subgroup: history of fall (n = 2847)
1.09 (0.63–1.90)
381.49 (264.61–372.37)
281.92 (132.33–431.52)
Subgroup: no history of fall (n = 54 239)
0.47 (0.38–0.58)
72.79 (67.12–78.46)
151.66 (121.38–181.95)
Subgroup: frail or prefrail (n = 6340)
0.39 (0.28–0.55)
186.29 (160.29–212.29)
467.84 (321.68–614.01)
Subgroup: robust (n = 50 746)
0.59 (0.47–0.75)
70.86 (65.05-76.66)
117.81 (89.96–145.67)
0.5
1.0
1.5
2.0
Favors Gabapentin
Favors Duloxetine
HR

CONCLUSION

- Compared with incident use of duloxetine, incident use of gabapentin was not associated with increased fall-related visits.

Limitations

- Retrospective study
- Gabapentin was likely at a lower dose

MY CONCLUSION

- Gabapentin at lower doses is probably safe in older adults from a falls perspective

Activities

Visual settings

Edit

When poll is active respond at **PollEv.com/arunabmehta145**

How does this trial change your practice?

0

0%	0%	0%	0%
1- Ah yes, another paper that	2	3	4- Time to retire my

Powered by Poll Everywhere

Received: 5 September 2024 | Accepted: 27 January 2025

DOI: 10.1002/jhm.70008

Journal of Hospital Medicine | shm Society of Hospital Medicine

ORIGINAL RESEARCH

Elevation in white blood cell count after corticosteroid use in noninfected hospitalized patients

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[2]Department of Quantitative Health Sciences, Cleveland Clinic, Cleveland, Ohio, USA

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X (formerly known as Twitter):

Abstract

Background: It is widely accepted that corticosteroids cause leukocytosis. Clinicians must decide whether a rise in white blood cell (WBC) count is due to steroids versus other processes like developing infection.

Objective: The objective of this study is to measure the increase in white blood cell count after corticosteroid administration in hospitalized patients without malignancy, infection, or immune dysfunction.

Methods: This is a retrospective cohort study from 2017 to 2018 in a single large healthcare system. We analyzed the trajectory of WBC count stratified by steroid dose. The study included nonsurgical patients admitted with at least two complete

WHY IS THIS ARTICLE IMPORTANT?

- There is always a concern in WBC elevation that is attributed to steroid use and when the clinician needs to start considering another reason for the elevation in patients.

METHODS

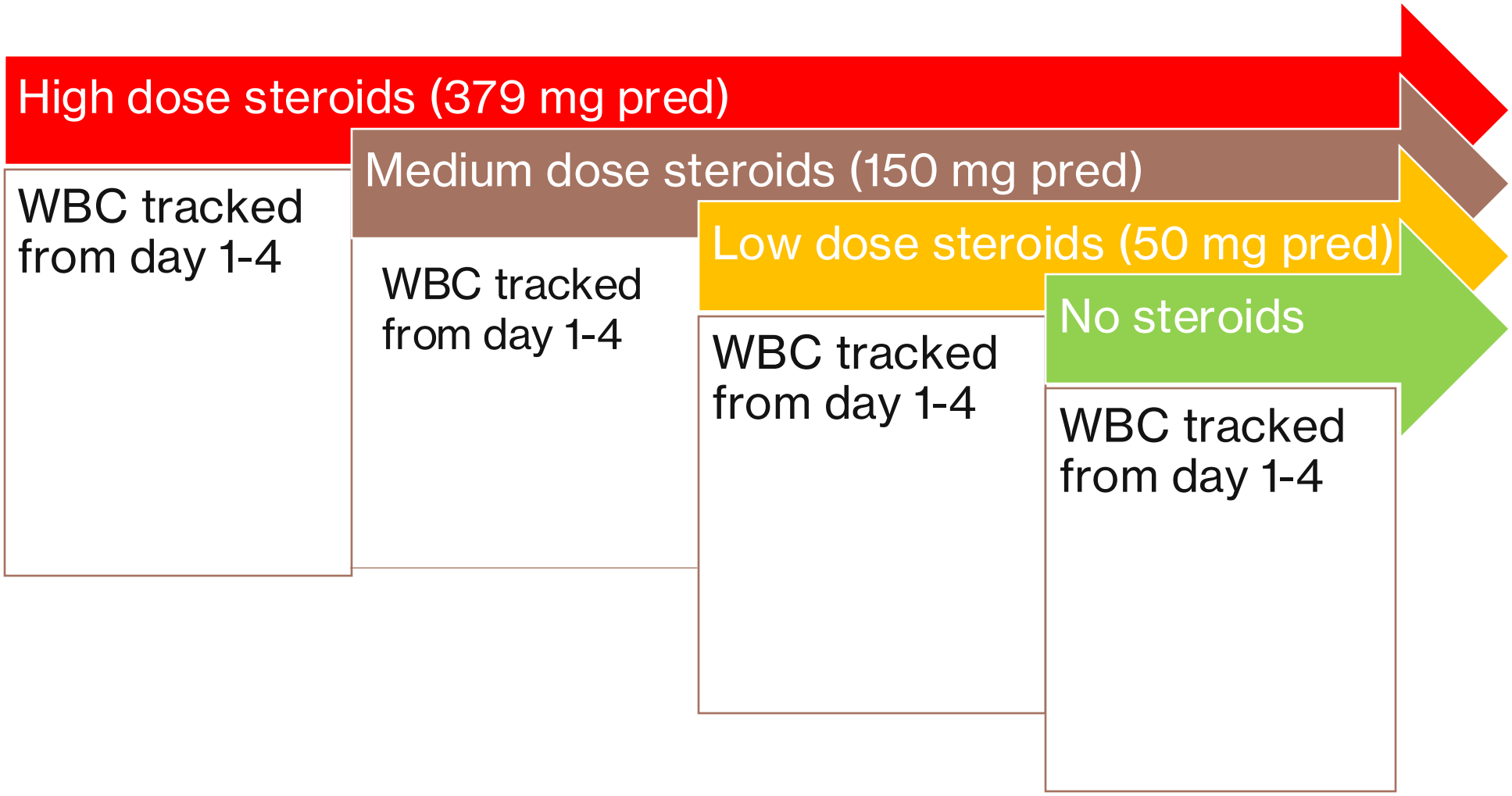
Retrospective cohort study

2017-2018

Single, large healthcare system (hospitalized)

Analysis of trajectory of WBC count by steroid dose

STUDY OVERVIEW



OUTCOMES

Mean WBC counts at up to 4 days of administration of steroids

(Patients were excluded if they had **immunosuppression, infection, malignancy, or steroid use** within 2 weeks before admission)

BASELINE CHARACTERISTICS

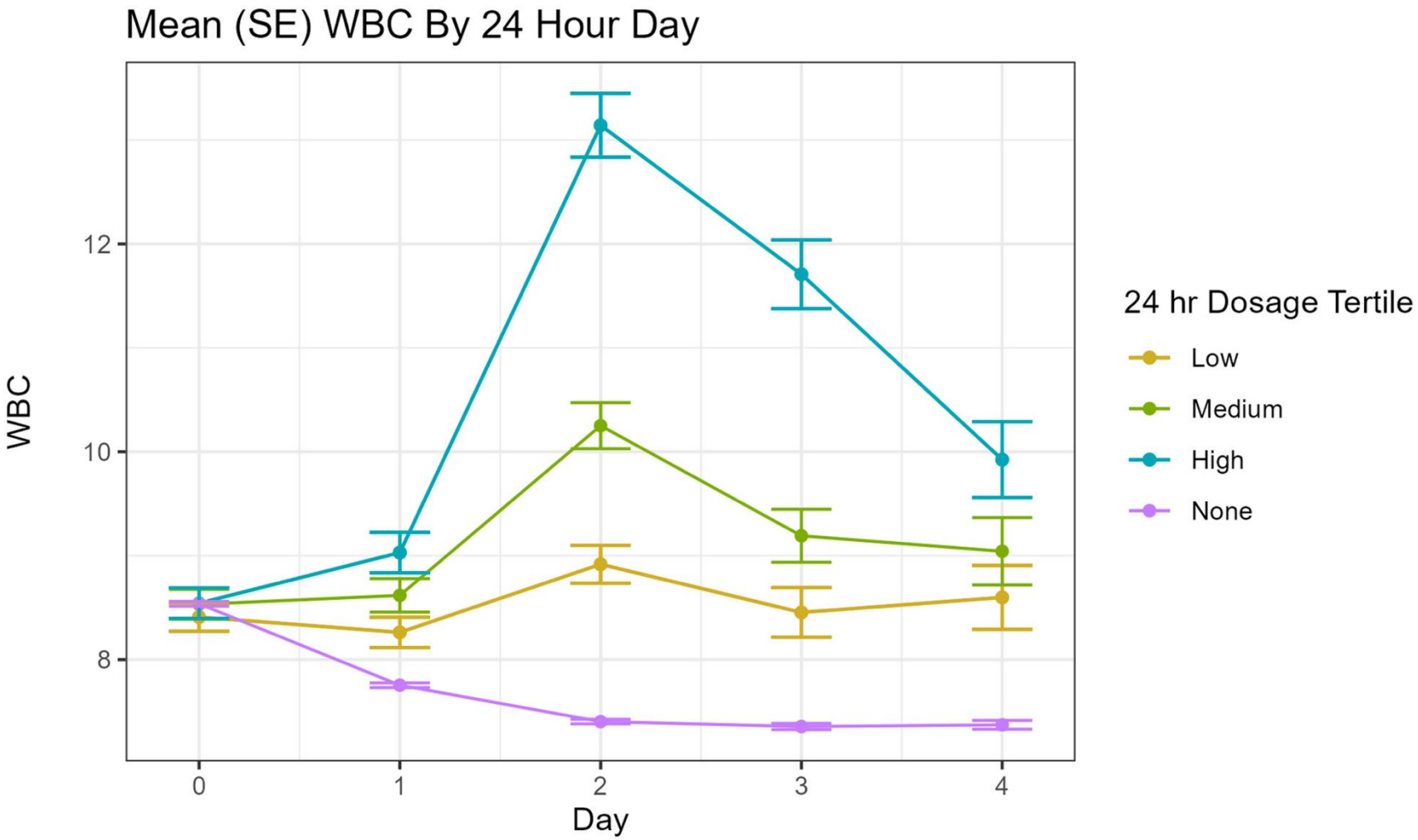
Table 1. Patient characteristics.

Characteristics	Overall, *N* = 28,245 [a]	Low, *N* = 536 [a]	Medium, *N* = 536 [a]	High, *N* = 536 [a]	None, *N* = 26,817 [a]	*p*-Value [b]
Age	65 (52, 77)	68 (54, 80)	65 (54, 76)	58 (44, 71)	65 (52, 77)	<.001
Gender						<.001
Female	13,741 (48%)	298 (56%)	283 (53%)	314 (59%)	12,846 (48%)	
Male	14,684 (52%)	238 (44%)	253 (47%)	222 (41%)	19,971 (52%)	
Race						.046
White	19,499 (69%)	357 (67%)	371 (69%)	340 (63%)	18,431 (69%)	
Black	7205 (25%)	142 (26%)	131 (24%)	169 (32%)	6763 (25%)	
Other	1721 (6.1%)	37 (6.9%)	34 (6.3%)	27 (5.0%)	1623 (6.1%)	
BMI category						.011
Underweight	867 (3.1%)	22 (4.1%)	17 (3.2%)	21 (3.9%)	807 (3.0%)	

Table 1. Patient characteristics.

Characteristics	Overall, *N* = 28,245 [a]	Low, *N* = 536 [a]	Medium, *N* = 536 [a]	High, *N* = 536 [a]	None, *N* = 26,817 [a]	*p*-Value [b]
COPD	5245 (18%)	158 (29%)	181 (34%)	184 (34%)	4722 (18%)	<.001
Diabetes	7982 (28%)	150 (28%)	141 (26%)	122 (23%)	7569 (28%)	.035
Hepatitis	618 (2.2%)	15 (2.8%)	11 (2.1%)	8 (1.5%)	584 (2.2%)	.5
Hypertension	16,769 (59%)	342 (64%)	307 (57%)	270 (50%)	15,850 (59%)	<.001
Hyperthyroid	514 (1.8%)	24 (4.5%)	7 (1.3%)	6 (1.1%)	477 (1.8%)	<.001
Hypothyroid	3359 (12%)	81 (15%)	60 (11%)	56 (10%)	3162 (12%)	.08
Inflammatory bowel disease	1120 (3.9%)	35 (6.5%)	53 (9.9%)	50 (9.3%)	982 (3.7%)	<.001
Pancreatitis	389 (1.4%)	6 (1.1%)	8 (1.5%)	1 (0.2%)	374 (1.4%)	.11
Rheumatoid arthritis	418 (1.5%)	30 (5.6%)	17 (3.2%)	8 (1.5%)	363 (1.4%)	<.001

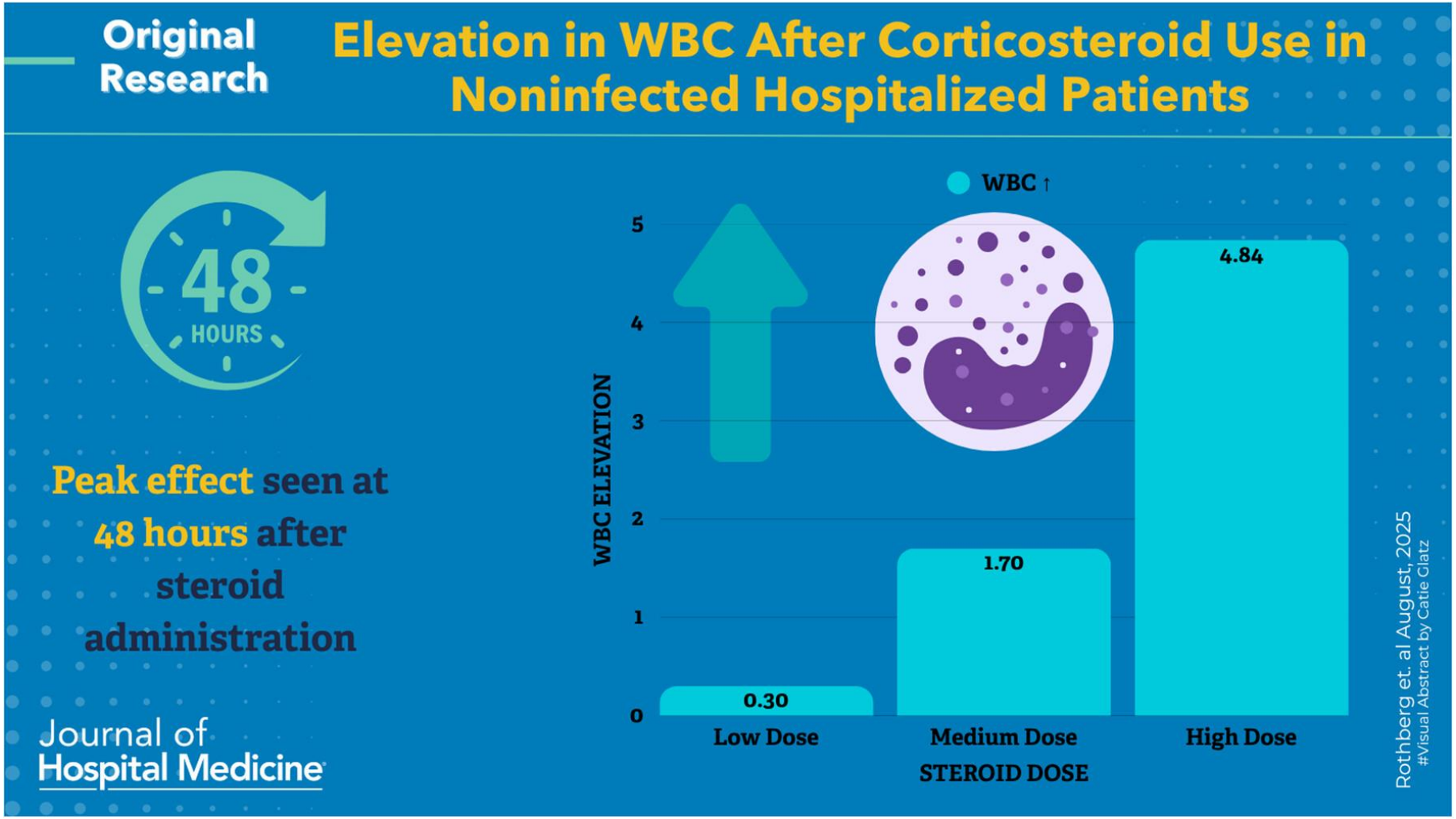
RESULTS



Number of Patients

Low	536	461	297	171	105
Medium	536	467	297	175	113
High	536	436	326	192	104
None	26817	20413	16757	10080	6151

RESULTS


Original Research
Elevation in WBC After Corticosteroid Use in Noninfected Hospitalized Patients
48 HOURS
Peak effect seen at 48 hours after steroid administration
Journal of Hospital Medicine
WBC ↑
WBC ELEVATION
0
1
2
3
4
5
0.30
1.70
4.84
Low Dose
Medium Dose
High Dose
STEROID DOSE
Rothberg et. al August, 2025
#Visual Abstract by Catie Glatz

CONCLUSION

- When interpreting WBC counts after initiating steroids, increases of up to 4.84×10^9/L cells may be seen within 48h after high-dose steroids. Larger increases, and any increase after low-dose steroids, suggest other causes of leukocytosis.

MY CONCLUSION

I would start thinking of other etiologies for large WBC elevations or if WBC elevations persist longer than 4 days.

Activities

Visual settings

Edit

When poll is active respond at **PollEv.com/arunabmehta145**

How does this trial change your practice?

0%	0%	0%	0%
1- Impressive data — I	2	3	4 - I've seen the light — and

Powered by Poll Everywhere

ORIGINAL ARTICLE

Apixaban for Extended Treatment of Provoked Venous Thromboembolism

Gregory Piazza, M.D.,[1,2] Behnood Bikdeli, M.D.,[1-3] Arvind K. Pandey, M.D.,[2] Darsiya Krishnathasan, M.S.,[1] Candrika D. Khairani, M.D.,[1] Antoine Bejjani, M.D.,[1,4] Ruth H. Morrison, R.N., B.S.N.,[1] Heather Hogan, R.N., B.S.N.,[1] Sina Rashedi, M.D., M.P.H.,[1] Mariana Pfeferman, M.D.,[1] Junyang Lou, M.D., Ph.D.,[1,2] John Fanikos, R.P.H.,[1,5] Nicole Porio, B.A.,[1] Lisa Rosenbaum, M.D.,[6] Piotr Sobieszczyk, M.D.,[2] Zhou Lan, Ph.D.,[1,7] Marie Gerhard-Herman, M.D.,[2] Umberto Campia, M.D.,[1,2] and Samuel Z. Goldhaber, M.D.,[1,2] for the HI-PRO Trial Investigators*

HI-PRO trial

ABSTRACT

BACKGROUND

The appropriate duration of anticoagulation for venous thromboembolism (VTE) in patients who have a transient provoking factor (e.g., surgery, trauma, or immobility) and concomitant enduring risk factors is uncertain.

METHODS

In this single-center, double-blind, randomized trial, adults with VTE after the occurrence of a transient provoking factor who had at least one enduring risk factor and had completed at least 3 months of anticoagulation were assigned to receive oral apixaban (at a dose of 2.5 mg twice daily) or placebo for 12 months. The primary efficacy outcome was the first symptomatic recurrent VTE. The primary safety outcome was the first episode of major bleeding according to the criteria of the Inter-

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WHY IS THIS ARTICLE IMPORTANT?

- The exact duration of anticoagulation for a patient with provoked VTE with some enduring risk factors is uncertain.

METHODS

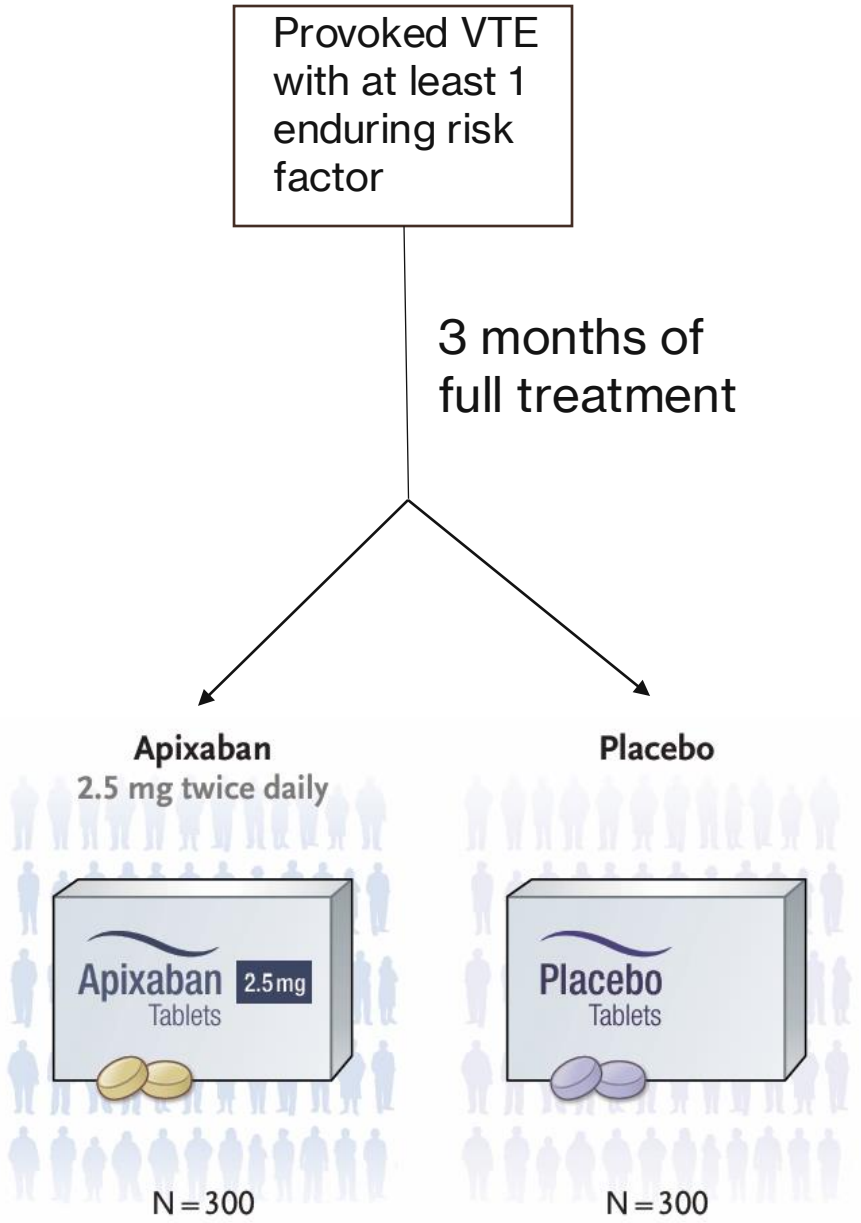
Single center

Double blinded, Randomized, Controlled Trial

Placebo-controlled

Funded by Bristol-Myers-Squibb

STUDY OVERVIEW



ENDURING RISK FACTORS

Table 2. Characteristics of Venous Thromboembolic (VTE) Events and Risk Factors (Intention-to-Treat Population).*

Characteristic	Total (N=600)	Apixaban (N=300)	Placebo (N=300)	Standardized Difference
				%
VTE diagnosis for eligibility — no. (%)				
Only deep-vein thrombosis	288 (48.0)	142 (47.3)	146 (48.7)	2.7
Isolated calf deep-vein thrombosis	119 (19.8)	48 (16.0)	71 (23.7)	19.3
Only pulmonary embolism	140 (23.3)	77 (25.7)	63 (21.0)	11.1
Right ventricular dysfunction	80 (13.3)	38 (12.7)	42 (14.0)	3.9
Both pulmonary embolism and deep-vein thrombosis	172 (28.7)	81 (27.0)	91 (30.3)	7.4
Provoking factors for VTE — no. (%)†				
Acute medical illness‡	110 (18.3)	56 (18.7)	54 (18.0)	1.7
Surgery	201 (33.5)	102 (34.0)	99 (33.0)	2.1
Trauma	115 (19.2)	62 (20.7)	53 (17.7)	7.6
Pregnancy	11 (1.8)	7 (2.3)	4 (1.3)	7.5
Infection	99 (16.5)	45 (15.0)	54 (18.0)	8.1
Hormonal contraceptive or replacement therapy	69 (11.5)	42 (14.0)	27 (9.0)	15.7
Hospitalization ≤3 mo before the VTE event	56 (9.3)	25 (8.3)	31 (10.3)	6.9
Immobility	188 (31.3)	81 (27.0)	107 (35.7)	18.8
Blood transfusion§	2 (0.3)	1 (0.3)	1 (0.3)	0
Coronavirus disease 2019§	49 (8.2)	23 (7.7)	26 (8.7)	3.7
Long-haul travel§	100 (16.7)	46 (15.3)	54 (18.0)	7.2
Other factor¶	53 (8.8)	26 (8.7)	27 (9.0)	1.2
Enduring risk factors for VTE — no. (%)†				
Persistent immobility	39 (6.5)	15 (5.0)	24 (8.0)	12.2
Obesity: BMI ≥30	289 (48.2)	141 (47.0)	148 (49.3)	4.7
Heart failure	15 (2.5)	10 (3.3)	5 (1.7)	10.7
Chronic lung disease	134 (22.3)	78 (26.0)	56 (18.7)	17.7
Chronic inflammatory or autoimmune disorder	313 (52.2)	152 (50.7)	161 (53.7)	6.0
Atherosclerotic cardiovascular disease	176 (29.3)	86 (28.7)	90 (30.0)	2.9
Chronic kidney disease	64 (10.7)	32 (10.7)	32 (10.7)	0
Chronic liver disease	23 (3.8)	10 (3.3)	13 (4.3)	5.2
Median duration of anticoagulant treatment before randomization — mo (IQR)	6.6 (3.7–35.3)	7.6 (3.9–39.6)	5.9 (3.5–32.5)	6.9

OUTCOMES

Primary Outcome: first symptomatic, recurrent, objectively confirmed VTE at 12 months (time to event analysis)

Primary Safety Outcome: First event of Major Bleeding (ISTH criteria)

Secondary Safety Outcome: Clinically Relevant Non-major Bleeding

BASELINE CHARACTERISTICS

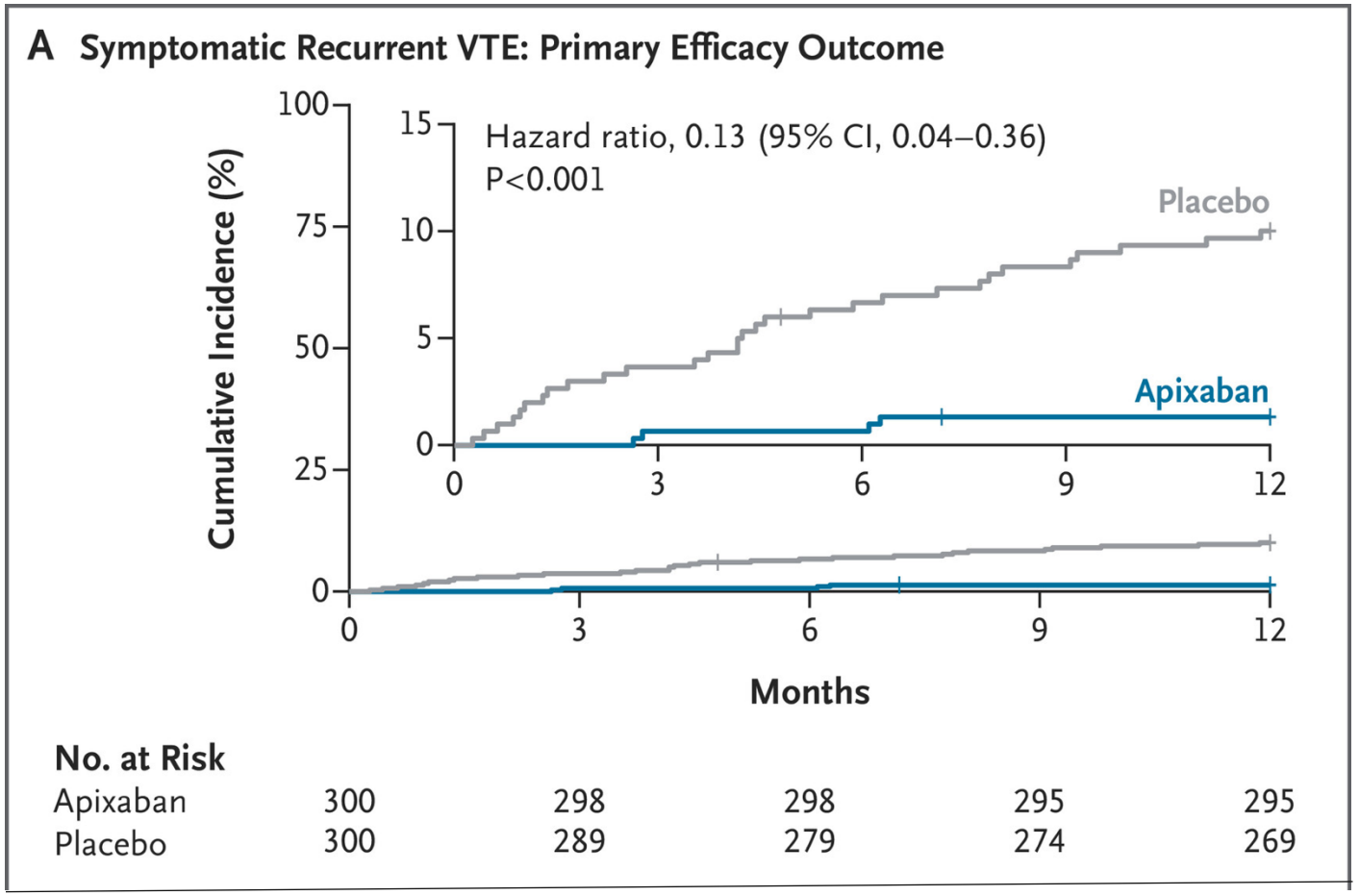
Table 1. Demographic and Clinical Characteristics of the Patients at Baseline.*

Characteristic	All Patients (N=600)	Apixaban (N=300)	Placebo (N=300)	Standardized Difference†
				%
Age — yr	59.5±15.2	59.1±15.2	59.9±15.2	5.8
Female sex — no. (%)	342 (57.0)	176 (58.7)	166 (55.3)	6.7
Race — no. (%)‡				
White	485 (80.8)	246 (82.0)	239 (79.7)	5.9
Black	70 (11.7)	33 (11.0)	37 (12.3)	4.2
Asian	5 (0.8)	4 (1.3)	1 (0.3)	11.0
Other	18 (3.0)	9 (3.0)	9 (3.0)	0
Unknown	27 (4.5)	9 (3.0)	18 (6.0)	14.5
Hispanic or Latino ethnic group — no. (%)‡	55 (9.2)	26 (8.7)	29 (9.7)	3.5
BMI§	30.6±6.7	30.7±6.8	30.4±6.6	3.5
Current smoker — no. (%)	32 (5.3)	15 (5.0)	17 (5.7)	3.0
Coexisting conditions — no. (%)¶				
Previous VTE‖	125 (20.8)	67 (22.3)	58 (19.3)	7.4
Diabetes	71 (11.8)	40 (13.3)	31 (10.3)	9.3
Hypertension	296 (49.3)	146 (48.7)	150 (50.0)	2.7
Coronary artery disease	104 (17.3)	50 (16.7)	54 (18.0)	3.5
Peripheral artery disease	23 (3.8)	12 (4.0)	11 (3.7)	1.7
Stroke or TIA	31 (5.2)	17 (5.7)	14 (4.7)	4.5
Heart failure	15 (2.5)	10 (3.3)	5 (1.7)	10.7
Dyslipidemia	317 (52.8)	164 (54.7)	153 (51.0)	7.4
Carotid occlusive disease	13 (2.2)	6 (2.0)	7 (2.3)	2.3
Family history of VTE — no. (%)	154 (25.7)	78 (26.0)	76 (25.3)	1.5
Use of aspirin at ≤81 mg/day — no. (%)				
At baseline	125 (20.8)	55 (18.3)	70 (23.3)	12.3
During follow-up period	119 (19.8)	54 (18.0)	65 (21.7)	9.2

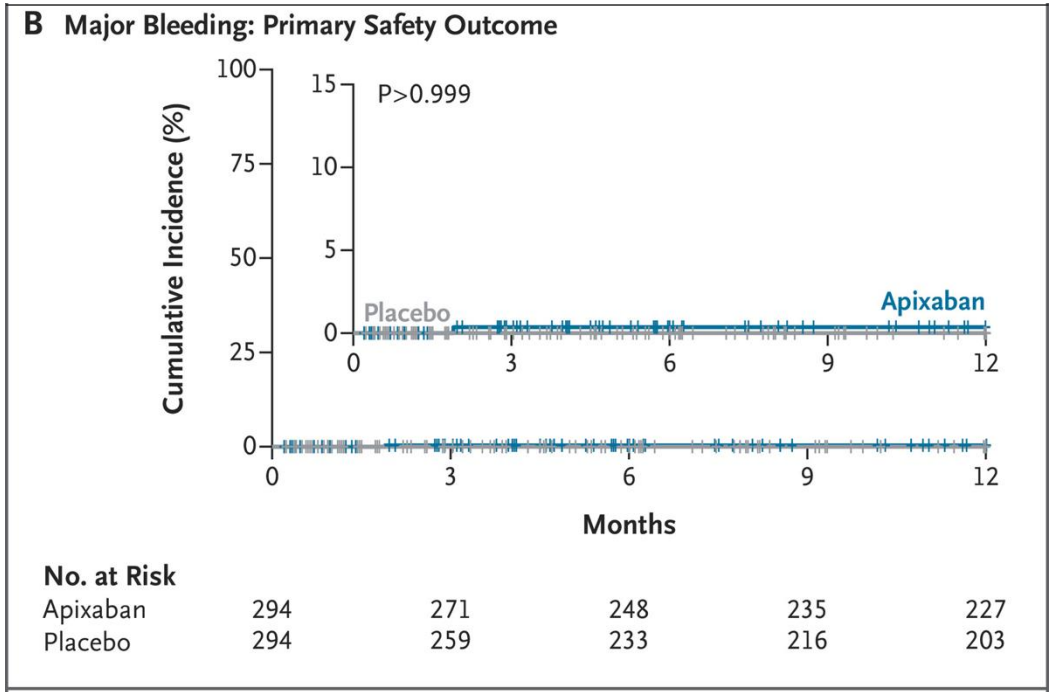
RESULTS

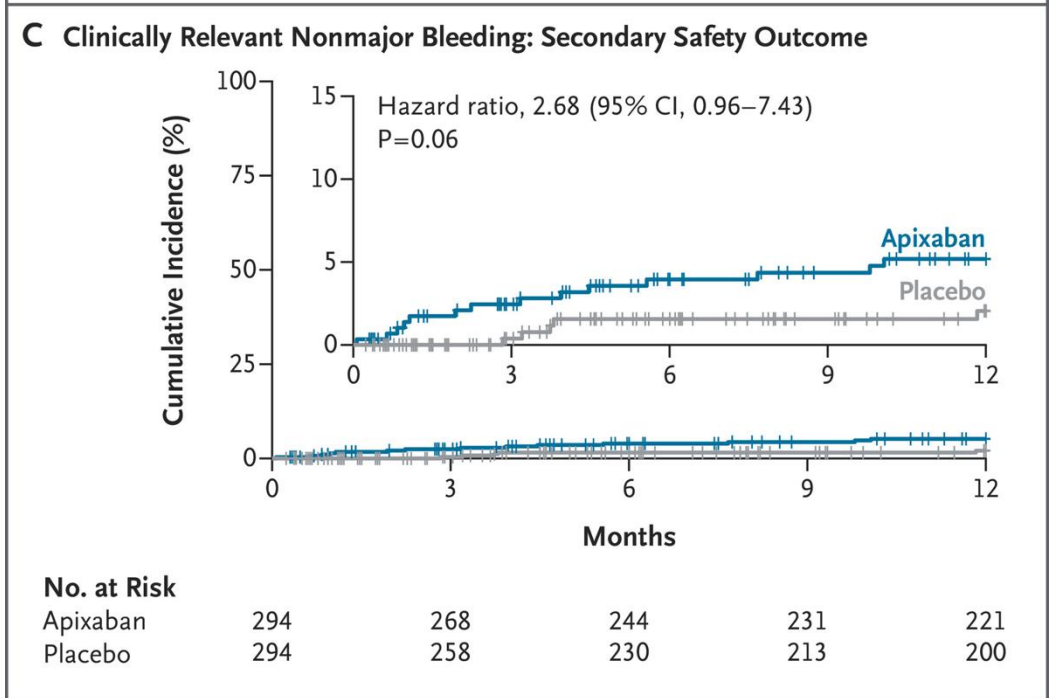
Primary Outcome: 4 in apixaban vs 30 in placebo

HR 0.13 (95% CI, 0.04-0.36, P<0.001)



RESULTS


B Major Bleeding: Primary Safety Outcome
Cumulative Incidence (%)
P>0.999
Placebo
Apixaban
Months
No. at Risk
Apixaban 294 271 248 235 227
Placebo 294 259 233 216 203


C Clinically Relevant Nonmajor Bleeding: Secondary Safety Outcome
Cumulative Incidence (%)
Hazard ratio, 2.68 (95% CI, 0.96–7.43)
P=0.06
Apixaban
Placebo
Months
No. at Risk
Apixaban 294 268 244 231 221
Placebo 294 258 230 213 200

CONCLUSIONS

- Among patients with provoked VTE and enduring risk factors, low-intensity therapy with apixaban for 12 months resulted in a lower risk of symptomatic recurrent VTE than placebo, with a low risk of major bleeding.

MY CONCLUSION

- I will strongly consider half-dose apixaban in patients with provoked VTE and an “enduring risk factor”

When poll is active respond at **PollEv.com/arunabmehta145**

How does this trial change your practice

0%	0%	0%	0%
1 - Great talk. Zero effect on my daily life	2	3	4 - Fine, fine… I'll stop practicing 2010 medicine in

Powered by Poll Everywhere

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 OCTOBER 10, 2024 VOL. 391 NO. 14

Beta-Blocker Interruption or Continuation after Myocardial Infarction

J. Silvain, G. Cayla, E. Ferrari, G. Range, E. Puymirat, N. Delarche, P. Guedeney, T. Cuisset, F. Ivanes, T. Lhermusier, T. Petroni, G. Lemesle, F. Bresoles, J.-N. Labeque, T. Pommier, J.-G. Dillinger, F. Leclercq, F. Boccara, P. Lim, T. Besseyre des Horts, T. Fourme, F. Jourda, A. Furber, B. Lattuca, N. Redjimi, C. Thuaire, P. Deharo, N. Procopi, R. Dumaine, M. Slama, L. Payot, M. El Kasty, K. Aacha, A. Diallo, E. Vicaut, and G. Montalescot, for the ABYSS Investigators of the ACTION Study Group*

ABYSS trial

ABSTRACT

BACKGROUND

The appropriate duration of treatment with beta-blocker drugs after a myocardial infarction is unknown. Data are needed on the safety and efficacy of the interruption of long-term beta-blocker treatment to reduce side effects and improve quality of life in patients with a history of uncomplicated myocardial infarction.

METHODS

In a multicenter, open label, randomized, noninferiority trial conducted at 49 sites in France, we randomly assigned patients with a history of myocardial infarction, in a 1:1 ratio, to interruption or continuation of beta-blocker treatment. All the patients had a left ventricular ejection fraction of at least 40% while receiving long-term beta-blocker treatment and had no history of a cardiovascular event in the previous 6 months. The primary end point was a composite of death, nonfatal myocardial infarction, nonfatal stroke, or hospitalization for cardiovascular reasons at the longest follow-up (minimum, 1 year), according to an analysis of noninferiority (defined as a between-

The authors' full names, academic degrees, and affiliations are listed in the Appendix. Dr. Silvain can be contacted at johanne.silvain@aphp.fr or at ACTION Group, Sorbonne Université, Pitié–Salpêtrière Hospital, Paris Institut de Cardiologie, 83 Boulevard de l'Hôpital, 75013 Paris, France.

*A complete list of the investigators in the ABYSS trial is provided in the Supplementary Appendix, available at NEJM.org.

This article was published on August 30, 2024, at NEJM.org.

N Engl J Med 2024;391:1277-86.

WHY IS THIS ARTICLE IMPORTANT?

- The actual duration of beta blocker use after MI is unknown. We don’t know what happens definitively if a beta blocker is stopped for such a patient; the data is old.
- Recent REDUCE-AMI trial showed no benefit of beta blockers in patients with acute MI and EF > 50%.

METHODS

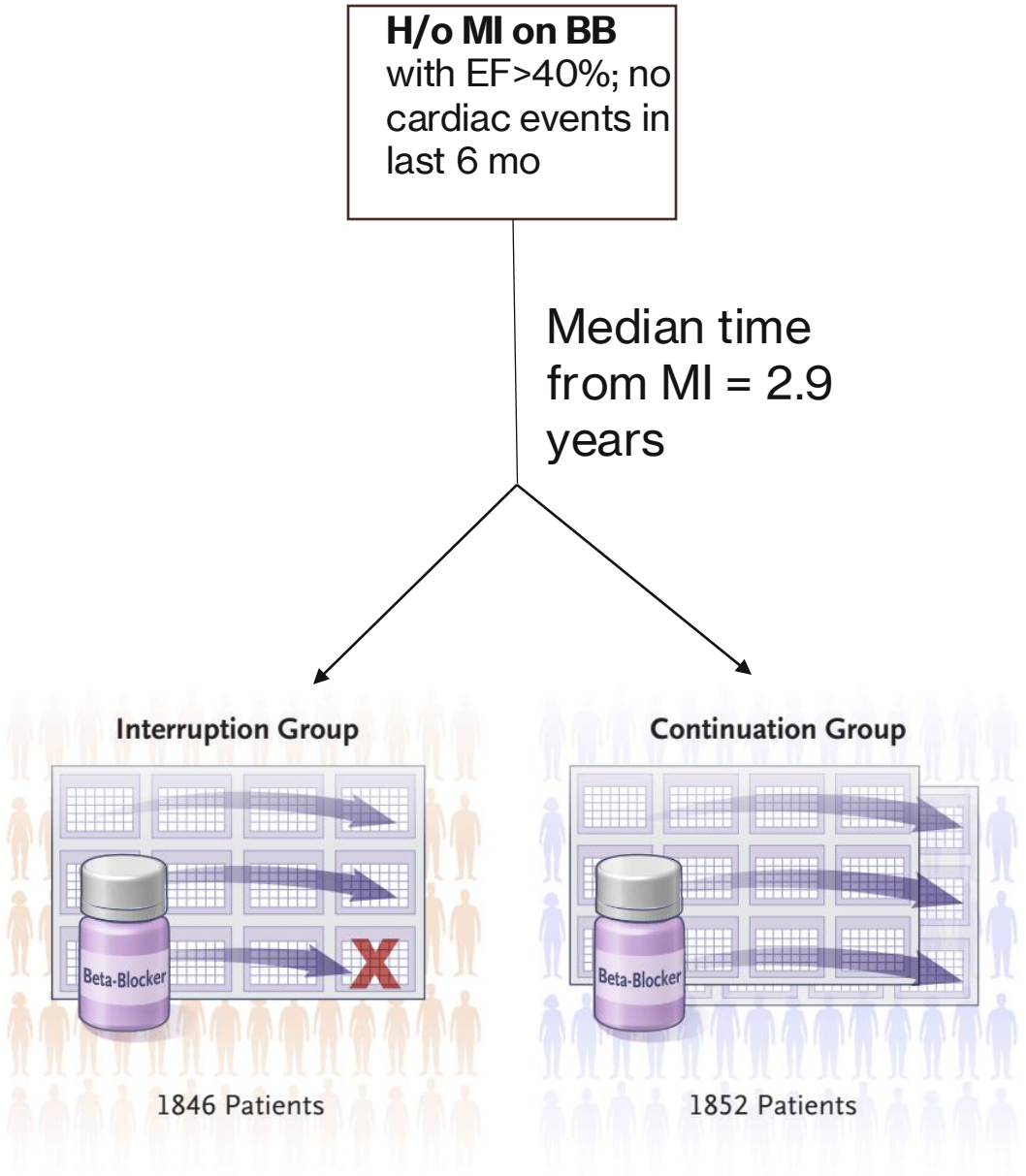
Prospective, Randomized, Controlled Trial

Open-label, non-inferiority

Multi-site (49 sites in France)

Funded by French Ministry of Health and ACTION Study Group

STUDY OVERVIEW



12 months outcome (Median follow up 3 yr)

OUTCOMES

Primary Outcome: Composite of death, nonfatal myocardial infarction, nonfatal stroke, or hospitalization for cardiovascular reasons at the longest follow-up (minimum, 1 year)

Main **secondary end point**: Change in score from baseline to 6 months and 12 months on the European Quality of Life–5 Dimensions (EQ-5D) questionnaire

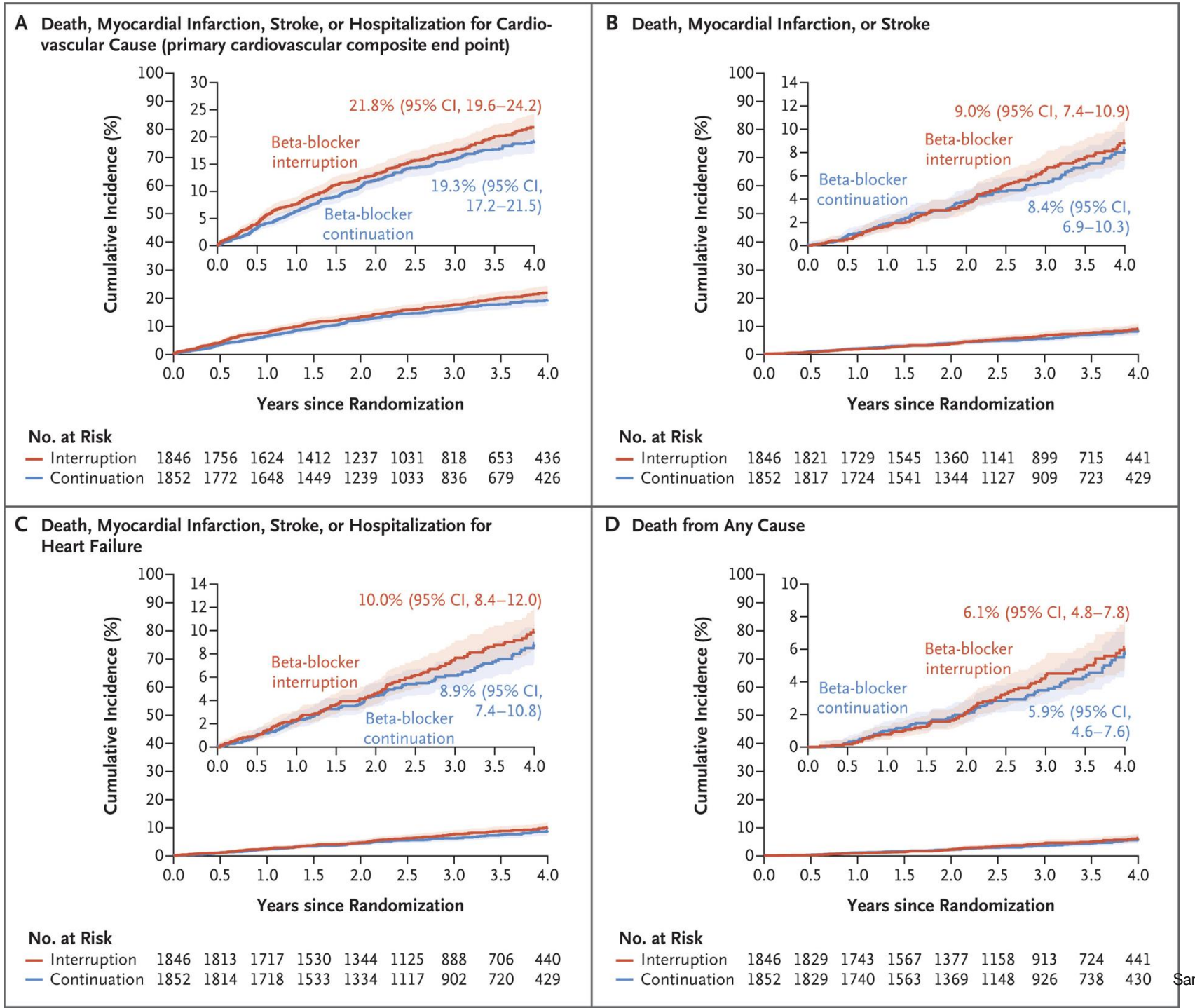
BASELINE CHARACTERISTICS

Table 1. Characteristics of the Patients at Baseline.*

Characteristic	Beta-Blocker Interruption (N = 1846)	Beta-Blocker Continuation (N = 1852)
Demographic and cardiovascular risk		
Age — yr	63.5±11.2	63.5±10.9
Male sex — no. (%)	1530 (82.9)	1531 (82.7)
Median body-mass index (IQR)†	26.3 (23.9–29.4)	26.5 (24.1–29.6)
Current smoker — no. (%)	385 (20.9)	342 (18.5)
Hypertension — no. (%)	786 (42.6)	805 (43.5)
Diabetes — no. (%)	372 (20.2)	375 (20.2)
Dyslipidemia — no. (%)	948 (51.4)	994 (53.7)
Medical history		
ST-segment elevation myocardial infarction — no. (%)	1168 (63.3)	1162 (62.7)
Non–ST-segment elevation myocardial infarction — no. (%)	678 (36.7)	690 (37.3)
Median time from index myocardial infarction to randomization (IQR) — yr	2.9 (1.2–6.2)	2.8 (1.1–6.6)
Multivessel disease — no. (%)	955 (51.7)	979 (52.9)
Revascularization for index myocardial infarction — no./total no. (%)	1755/1846 (95.1)	1757/1852 (94.9)
Completeness‡	1601/1753 (91.2)	1619/1755 (92.1)
Percutaneous coronary intervention	1709/1755 (97.4)	1693/1757 (96.4)
Fibrinolysis	29/1755 (1.7)	46/1757 (2.6)
Coronary-artery bypass grafting	62/1755 (3.5)	83/1757 (4.7)
Peripheral vascular disease — no. (%)	104 (5.6)	83 (4.5)
Stroke or transient ischemic attack — no. (%)	56 (3.0)	67 (3.6)
Episode of heart failure — no. (%)§	34 (1.8)	26 (1.4)
Arrhythmia — no. (%)	7 (0.4)	5 (0.3)
Health status		
Left ventricular ejection fraction		
Median (IQR) — %	60 (52–60)	60 (52–60)
Patients with value of 40 to 50% — no. (%)	430 (23.3)	435 (23.5)
Residual angina — no. (%)	21 (1.1)	30 (1.6)
Median blood pressure (IQR) — mm Hg		
Systolic	132 (121–144)	131 (121–144)
Diastolic	77 (70–83)	77 (70–83)
Median resting heart rate (IQR) — beats/min	63 (57–71)	63 (57–71)

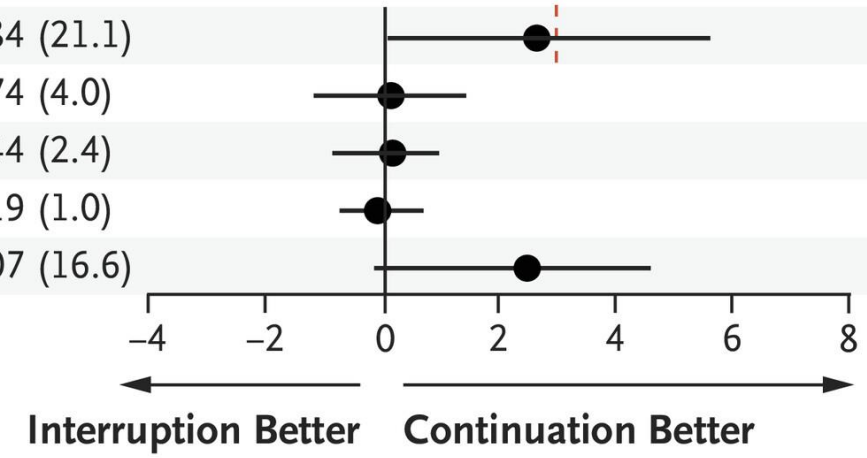
RESULTS

HR interruption vs continuation 1.16 (95% CI, 1.01 – 1.33; P = 0.44)



RESULTS

End Point	Beta-Blocker Interruption (N=1846)	Beta-Blocker Continuation (N=1852)	Risk Difference (95% CI) (percentage points)
	no. of patients with event (%)		
Primary end point	432 (23.8)	384 (21.1)	2.8 (<0.1 to 5.5)
Death	76 (4.1)	74 (4.0)	0.1 (–1.2 to 1.4)
Myocardial infarction	46 (2.5)	44 (2.4)	0.1 (–0.9 to 1.1)
Stroke	18 (1.0)	19 (1.0)	–0.1 (–0.7 to 0.6)
Hospitalization for cardiovascular reason	349 (18.9)	307 (16.6)	2.3 (–0.1 to 4.8)



CONCLUSIONS

In patients with a history of myocardial infarction, interruption of long-term beta-blocker treatment was not found to be noninferior to a strategy of beta-blocker continuation

MY CONCLUSION

- After reviewing the REDUCE-AMI trial and now the ABYSS trial, there are some different outcomes, I would not change practice yet
- New trials related to beta blocker use in this population are pending, guidelines remain unchanged.

When poll is active respond at **PollEv.com/arunabmehta145**

How does this trial change your practice?

0%	0%	0%	0%
1 - I admire the speaker's optimism that this would	2	3	4 - I'm making a bold pivot from tradition to

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FINEARTS-HF trial

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 OCTOBER 24, 2024 VOL. 391 NO. 16

Finerenone in Heart Failure with Mildly Reduced or Preserved Ejection Fraction

S.D. Solomon, J.J.V. McMurray, M. Vaduganathan, B. Claggett, P.S. Jhund, A.S. Desai, A.D. Henderson, C.S.P. Lam, B. Pitt, M. Senni, S.J. Shah, A.A. Voors, F. Zannad, I.Z. Abidin, M.A. Alcocer-Gamba, J.J. Atherton, J. Bauersachs, M. Chang-Sheng, C.-E. Chiang, O. Chioncel, V. Chopra, J. Comin-Colet, G. Filippatos, C. Fonseca, G. Gajos, S. Goland, E. Goncalvesova, S. Kang, T. Katova, M.N. Kosiborod, G. Latkovskis, A.P.-W. Lee, G.C.M. Linssen, G. Llamas-Esperón, V. Mareev, F.A. Martinez, V. Melenovský, B. Merkely, S. Nodari, M.C. Petrie, C.I. Saldarriaga, J.F.K. Saraiva, N. Sato, M. Schou, K. Sharma, R. Troughton, J.A. Udell, H. Ukkonen, O. Vardeny, S. Verma, D. von Lewinski, L. Voronkov, M.B. Yilmaz, S. Zieroth, J. Lay-Flurrie, I. van Gameren, F. Amarante, P. Kolkhof, and P. Viswanathan, for the FINEARTS-HF Committees and Investigators*

ABSTRACT

BACKGROUND

Steroidal mineralocorticoid receptor antagonists reduce morbidity and mortality among patients with heart failure and reduced ejection fraction, but their efficacy in those with heart failure and mildly reduced or preserved ejection fraction has not been established. Data regarding the efficacy and safety of the nonsteroidal mineralocorticoid receptor antagonist finerenone in patients with heart failure and mildly reduced or preserved ejection fraction are needed.

METHODS

In this international, double-blind trial, we randomly assigned patients with heart failure and a left ventricular ejection fraction of 40% or greater, in a 1:1 ratio, to receive finerenone (at a maximum dose of 20 mg or 40 mg once daily) or matching placebo, in addition to usual therapy. The primary outcome was a composite of total worsening heart failure events (with an event defined as a first or recurrent un-

The authors' full names, academic degrees, and affiliations are listed in the Appendix. Dr. Solomon can be contacted at ssolomon@bwh.harvard.edu or at the Cardiovascular Division, Brigham and Women's Hospital, 75 Francis St., Boston, MA 02115. Dr. McMurray can be contacted at john.mcmurray@glasgow.ac.uk or at the British Heart Foundation Cardiovascular Research Centre, University of Glasgow, 126 University Pl., Glasgow G128TA, United Kingdom.

*A list of the committees and investigators in the FINEARTS-HF trial is provided in the Supplementary Appendix, available at NEJM.org.

- We don’t have RCT evidence of MRA improvement for HFpEF patients
- Level of evidence in guidelines is Class IIb

METHODS

Event-driven

Double-blind

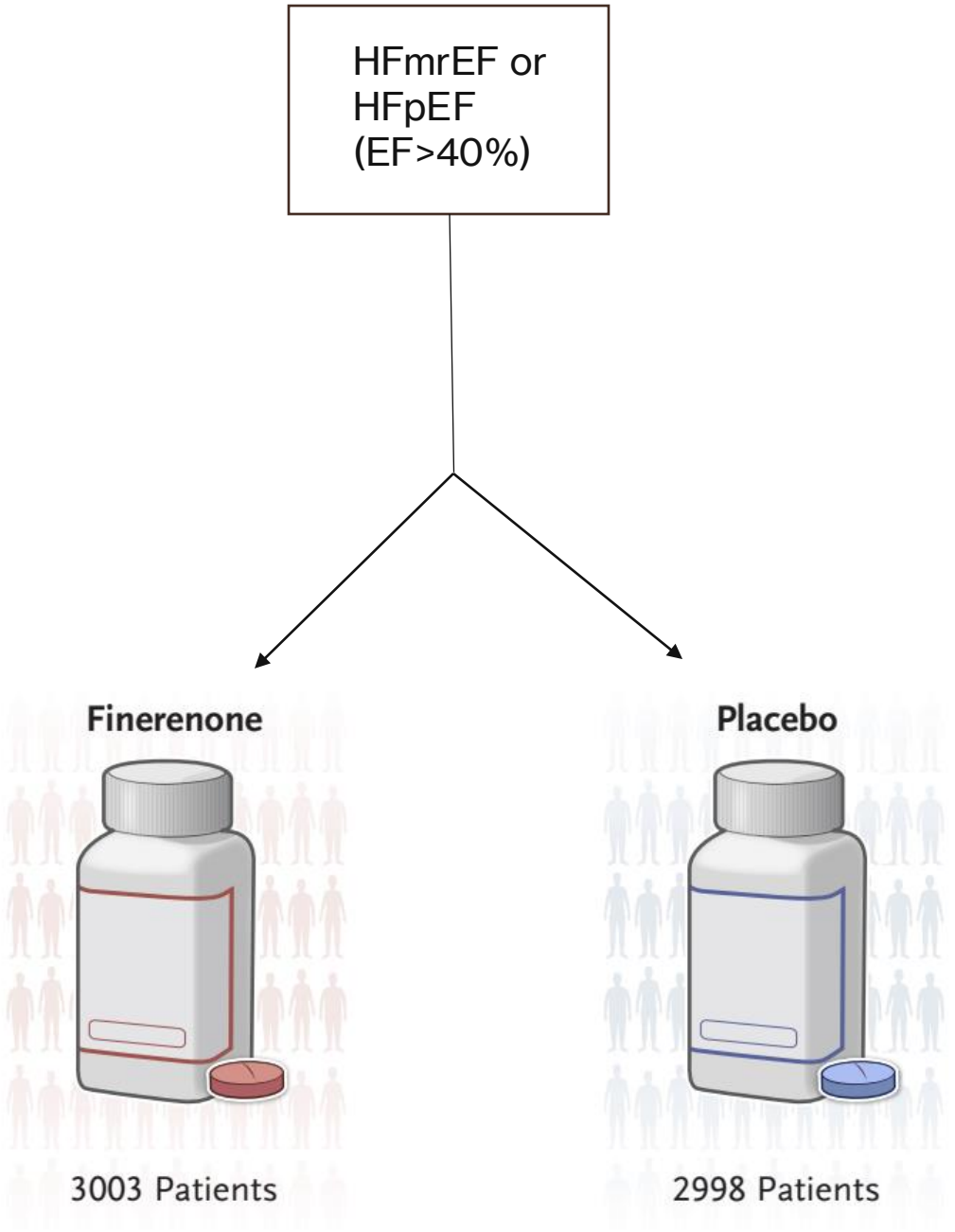
Randomized, Controlled trial

Multi-site (654 sites across 37 countries)

Funded by Bayer

STUDY OVERVIEW

Median follow up: 32 months



OUTCOMES

Primary Outcome: Composite of total worsening heart failure events and death from cardiovascular causes

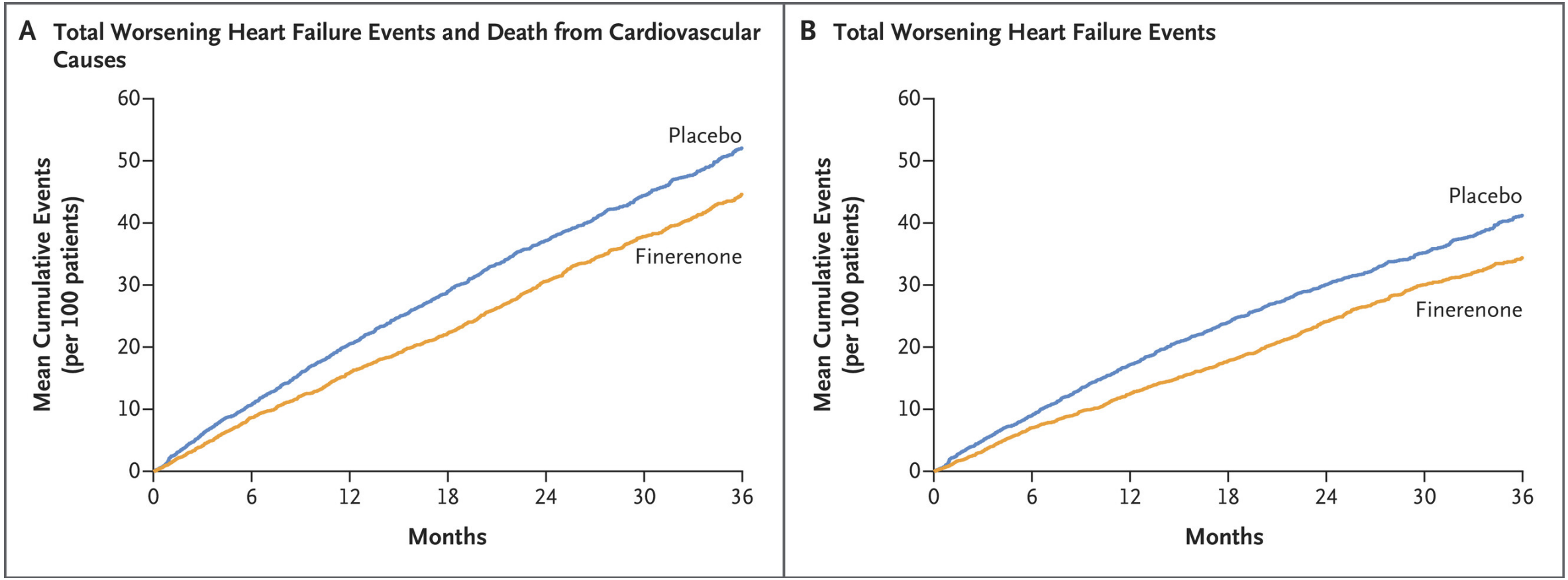
BASELINE CHARACTERISTICS

Table 1. Characteristics of the Patients at Baseline.*

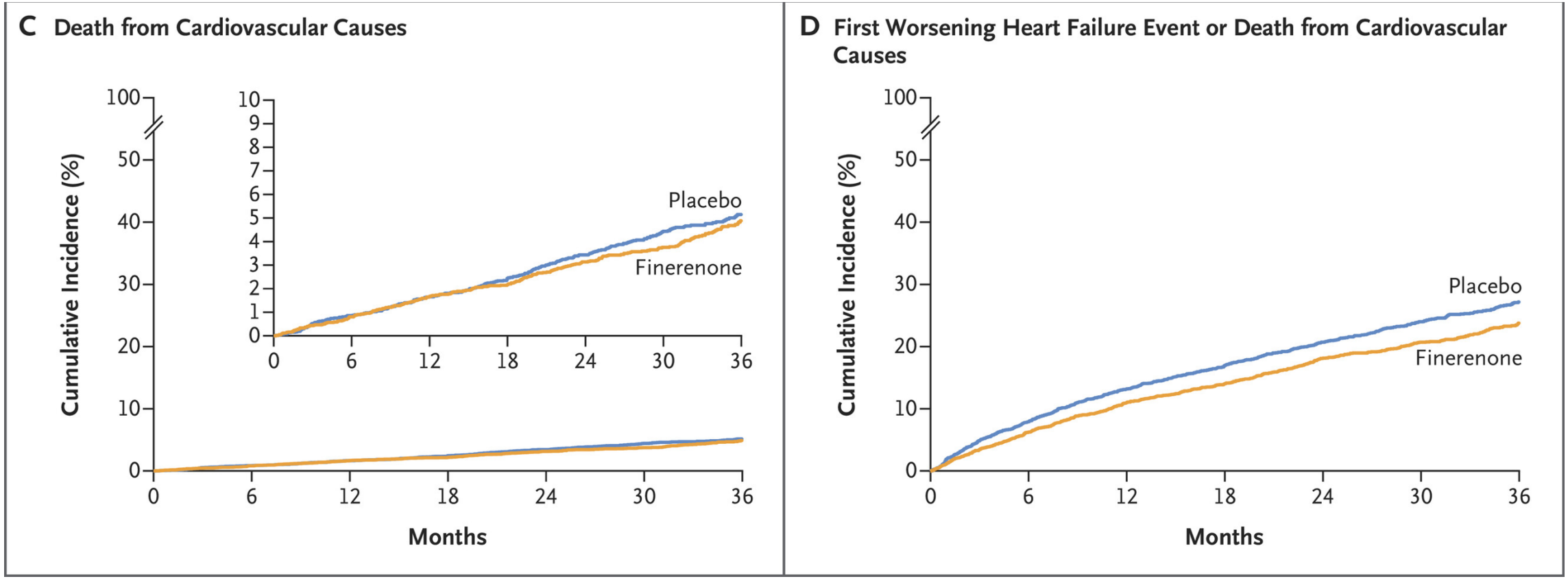
Characteristic	Finerenone (N = 3003)	Placebo (N = 2998)
Age — yr	71.9±9.6	72.0±9.7
Female sex — no. (%)	1355 (45.1)	1377 (45.9)
Race — no. (%)†		
Asian	497 (16.6)	499 (16.6)
Black	49 (1.6)	39 (1.3)
Other	91 (3.0)	91 (3.0)
White	2366 (78.8)	2369 (79.0)
Geographic region — no. (%)		
Asia	493 (16.4)	490 (16.3)
Eastern Europe	1329 (44.3)	1321 (44.1)
Latin America	322 (10.7)	319 (10.6)
North America	235 (7.8)	236 (7.9)
Western Europe, Oceania, or other	624 (20.8)	632 (21.1)
Any previous hospitalization for heart failure — no. (%)	1797 (59.8)	1822 (60.8)
Time since heart failure event at randomization — no. (%)		
≤7 days	609 (20.3)	610 (20.3)
>7 days to 3 mo	1030 (34.3)	998 (33.3)
>3 mo or no index event	1364 (45.4)	1390 (46.4)
Systolic blood pressure — mm Hg	129.5±15.3	129.3±15.3
Body-mass index‡	29.9±6.1	30.0±6.1
Serum creatinine level — mg/dl	1.1±0.3	1.1±0.4
Estimated glomerular filtration rate		
Value — ml/min/1.73 m^2	61.9±19.4	62.3±20.0
<60 ml/min/1.73 m^2 — no. (%)	1451 (48.3)	1437 (47.9)
Median urinary albumin:creatinine ratio (IQR) — mg/g	18 (7–67)	19 (7–66)
Serum potassium level — mmol/liter	4.4±0.5	4.4±0.5
Left ventricular ejection fraction		
Value — %	52.6±7.8	52.5±7.8
<50% — no. (%)	1093 (36.5)	1079 (36.0)
≥50% to <60% — no. (%)	1329 (44.3)	1345 (44.9)
≥60% — no. (%)	575 (19.2)	572 (19.1)
Median NT-proBNP level (IQR) — pg/ml	1053 (467–1937)	1028 (433–1963)
NYHA functional class — no. (%)		
Missing	1 (<0.1)	0
II	2081 (69.3)	2065 (68.9)
III	903 (30.1)	910 (30.4)
IV	18 (0.6)	23 (0.8)
Medical history — no. (%)		
Hypertension	2640 (87.9)	2685 (89.6)
Type 2 diabetes mellitus§	1217 (40.5)	1222 (40.8)
Atrial fibrillation on ECG at baseline	1165 (38.8)	1128 (37.6)
Stroke	355 (11.8)	353 (11.8)
Myocardial infarction	784 (26.1)	757 (25.3)
Previous left ventricular ejection fraction <40%	147 (4.9)	126 (4.2)
Medication use — no. (%)		
Beta-blocker	2541 (84.6)	2554 (85.2)
Angiotensin-converting–enzyme inhibitor	1083 (36.1)	1072 (35.8)
Angiotensin-receptor blocker	1047 (34.9)	1055 (35.2)
Angiotensin receptor–neprilysin inhibitor	256 (8.5)	257 (8.6)
Calcium-channel blocker	958 (31.9)	1010 (33.7)
Sodium–glucose cotransporter 2 inhibitor	393 (13.1)	424 (14.1)
Loop diuretic	2618 (87.2)	2621 (87.4)
Thiazide diuretic	429 (14.3)	402 (13.4)
Potassium supplement	349 (11.6)	365 (12.2)
Glucagon-like peptide-1 receptor agonist	79 (2.6)	88 (2.9)

RESULTS

Finerenone vs placebo: HR, 0.82; 95% CI, 0.71 to 0.94; P=0.006



RESULTS


C Death from Cardiovascular Causes
Cumulative Incidence (%)
100
50
40
30
20
10
0
10
9
8
7
6
5
4
3
2
1
0
0
6
12
18
24
30
36
Placebo
Finerenone
Months
D First Worsening Heart Failure Event or Death from Cardiovascular Causes
Cumulative Incidence (%)
100
50
40
30
20
10
0
0
6
12
18
24
30
36
Placebo
Finerenone
Months

CONCLUSIONS

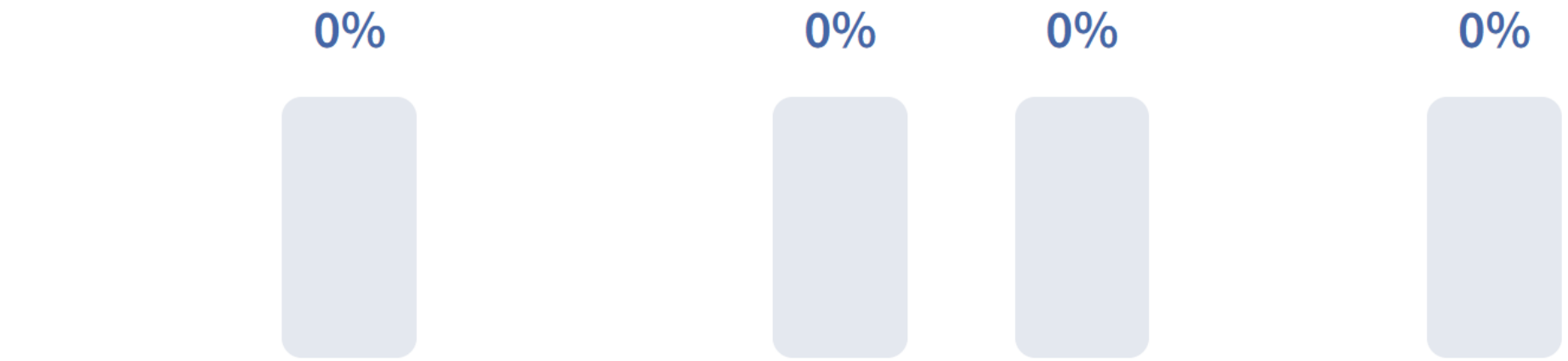
- In patients with heart failure and mildly reduced or preserved ejection fraction, finerenone resulted in a significantly lower rate of a composite of total worsening heart failure events and death from cardiovascular causes than placebo.

MY CONCLUSION

- I would use finerenone in HFmrEF and HFpEF patients (even healthier ones) if it is covered and affordable. The rest get spironolactone.
- Finerenone will likely get Class IIA evidence in the next HFpEF guideline update
- Less of my male patients will get gynecomastia now

When poll is active respond at **PollEv.com/arunabmehta145**

How does this trial change your practice?



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The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 NOVEMBER 7, 2024 VOL. 391 NO. 18

Invasive Treatment Strategy for Older Patients with Myocardial Infarction

V. Kunadian, H. Mossop, C. Shields, M. Bardgett, P. Watts, M.D. Teare, J. Pritchard, J. Adams-Hall, C. Runnett, D.P. Ripley, J. Carter, J. Quigley, J. Cooke, D. Austin, J. Murphy, D. Kelly, J. McGowan, M. Veerasamy, D. Felmeden, H. Contractor, S. Mutgi, J. Irving, S. Lindsay, G. Galasko, K. Lee, A. Sultan, A.G. Dastidar, S. Hussain, I.U. Haq, M. de Belder, M. Denvir, M. Flather, R.F. Storey, D.E Newby, S.J. Pocock, and K.A.A. Fox, for the British Heart Foundation SENIOR-RITA Trial Team and Investigators*

SENIOR-RITA trial

ABSTRACT

BACKGROUND

Whether a conservative strategy of medical therapy alone or a strategy of medical therapy plus invasive treatment is more beneficial in older adults with non–ST-segment elevation myocardial infarction (NSTEMI) remains unclear.

METHODS

We conducted a prospective, multicenter, randomized trial involving patients 75 years of age or older with NSTEMI at 48 sites in the United Kingdom. The patients were assigned in a 1:1 ratio to a conservative strategy of the best available medical therapy or an invasive strategy of coronary angiography and revascularization plus the best available medical therapy. Patients who were frail or had a high burden of coexisting conditions were eligible. The primary outcome was a composite of death from cardiovascular causes (cardiovascular death) or nonfatal myocardial infarction assessed in a time-to-event analysis.

The authors' full names, academic degrees, and affiliations are listed in the Appendix. Dr. Kunadian can be contacted at vijay.kunadian@newcastle.ac.uk or at the William Leech Building, 4th Fl., Translational and Clinical Research Institute, Faculty of Medical Sciences, Newcastle University, Newcastle upon Tyne NE2 4HH, United Kingdom.

*A full list of the British Heart Foundation SENIOR-RITA Trial investigators is provided in the Supplementary Appendix, available at NEJM.org.

This article was published on September 1, 2024, and updated on October 21, 2024, at NEJM.org.

WHY IS THIS ARTICLE IMPORTANT?

- It’s unclear whether a conservative treatment plan is better than a medical + invasive treatment plan in older patients with NSTEMI.

METHODS

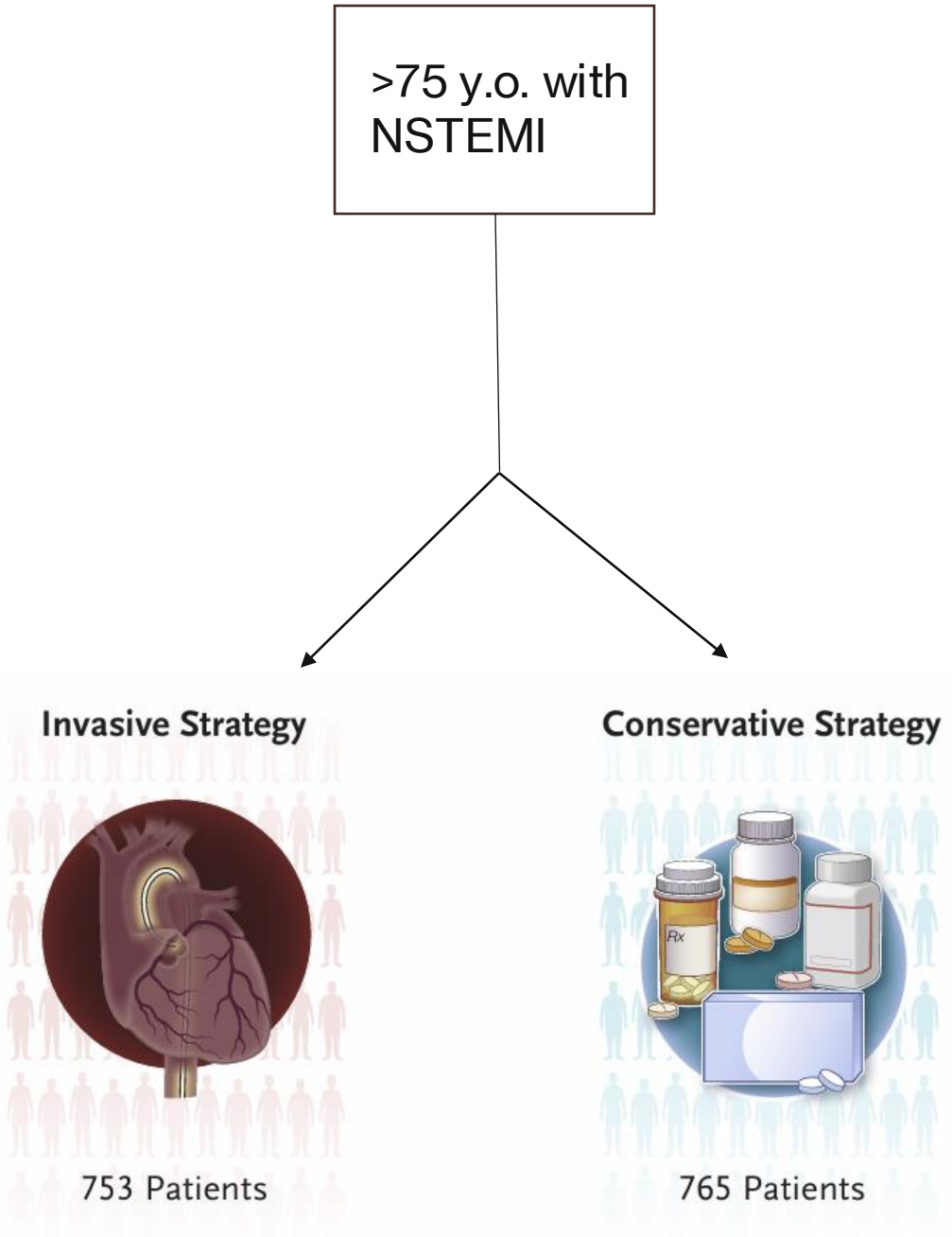
Multi-center (48 sites in the UK)

Prospective, Open-label, Randomized, Controlled Trial

Funded by British Heart Foundation

Follow up: 5 years

STUDY OVERVIEW



Mean follow up 4.1 years

OUTCOMES

- Primary Outcome: Composite of death from cardiovascular causes (cardiovascular death) or nonfatal myocardial infarction assessed in a time-to-event analysis
- Safety outcomes: procedural and in-hospital complications occurring in patients in the invasive-strategy group.

BASELINE CHARACTERISTICS

Table 1. Demographic and Clinical Characteristics of the Patients at Baseline.*

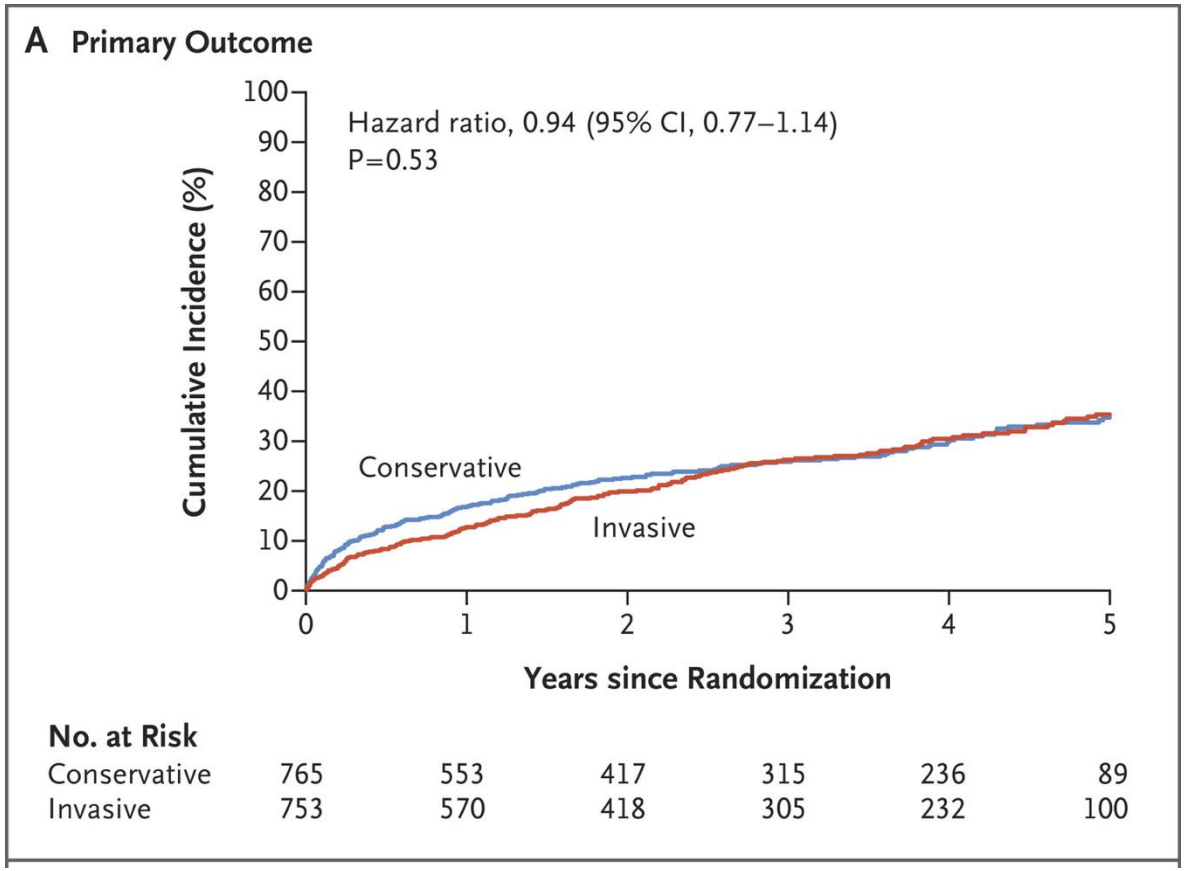
Characteristic	Invasive Strategy (N=753)	Conservative Strategy (N=765)
Age		
Mean — yr	82.5±4.7	82.2±4.7
Distribution — no. (%)		
≥75 to <80	211 (28.0)	246 (32.2)
≥80 to <85	304 (40.4)	291 (38.0)
≥85 to <90	182 (24.2)	171 (22.4)
≥90 to <95	47 (6.2)	51 (6.7)
≥95	9 (1.2)	6 (0.8)
Female sex — no. (%)	337 (44.8)	342 (44.7)
Median no. of days from admission to randomization (IQR)	2 (1–3)	2 (1–3)
MoCA score†		
Median (IQR)	25 (21–27)	24 (21–26)
Impaired — no./total no. (%)	433/724 (59.8)	476/731 (65.1)
Rockwood Clinical Frailty Scale score‡		
Median (IQR)	3 (2 to 4)	3 (2 to 4)
Category — no./total no. (%)		
Frail	153/753 (20.3)	164/765 (21.4)
Very fit	103/752 (13.7)	97/763 (12.7)
Well, without active disease	134/752 (17.8)	155/763 (20.3)
Well, with treated coexisting conditions	198/752 (26.3)	214/763 (28.0)
Apparently vulnerable	165/752 (21.9)	134/763 (17.6)
Mildly frail	97/752 (12.9)	108/763 (14.2)
Moderately frail	47/752 (6.2)	48/763 (6.3)
Severely frail	8/752 (1.1)	7/763 (0.9)

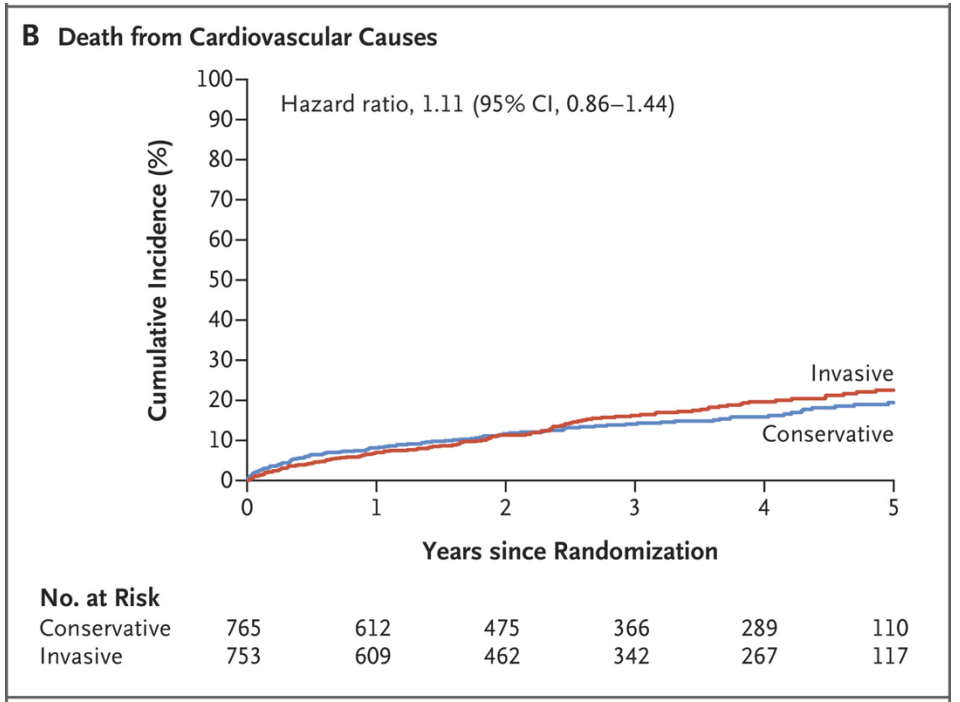
BASELINE CHARACTERISTICS

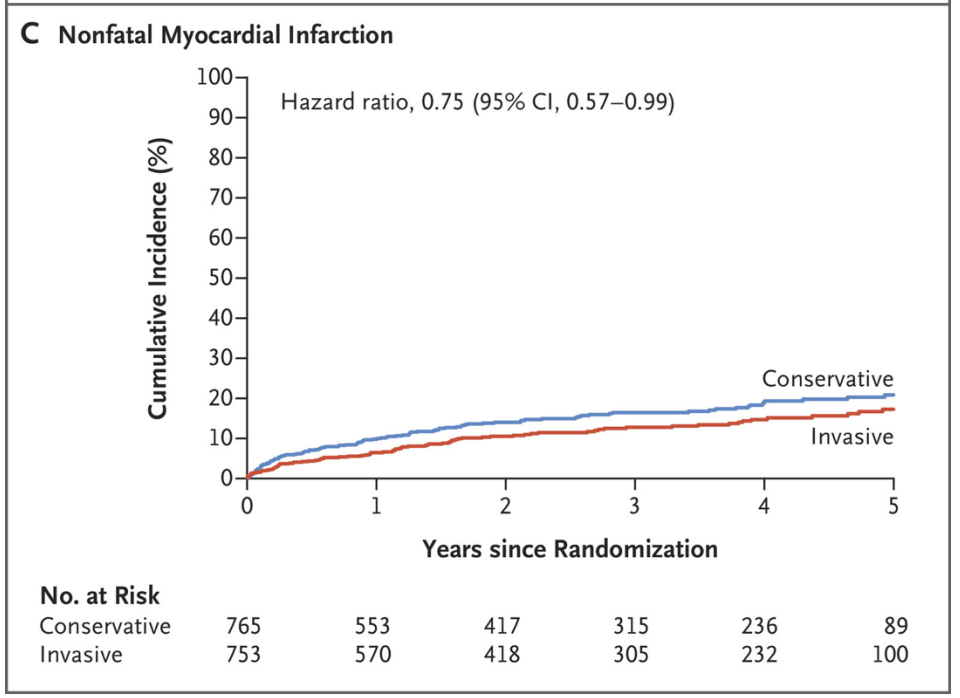
Table 1. (Continued.)

Characteristic	Invasive Strategy (N=753)	Conservative Strategy (N=765)
Hypertension — no./total no. (%)	490/753 (65.1)	500/764 (65.4)
Diabetes — no./total no. (%)	232/753 (30.8)	234/764 (30.6)
Hypercholesterolemia — no./total no. (%)	242/752 (32.2)	231/763 (30.3)
History of renal disease — no./total no. (%)	156/753 (20.7)	158/764 (20.7)
Previous MI — no./total no. (%)	247/753 (32.8)	227/764 (29.7)
Previous PCI — no./total no. (%)	163/752 (21.7)	139/764 (18.2)
Previous CABG — no./total no. (%)	101/753 (13.4)	80/764 (10.5)
History of peripheral vascular disease — no./total no. (%)	57/753 (7.6)	61/764 (8.0)
History of TIA or stroke — no./total no. (%)	128/753 (17.0)	101/764 (13.2)
History of COPD — no./total no. (%)	115/753 (15.3)	118/764 (15.4)
History of congestive heart failure — no./total no. (%)	73/753 (9.7)	70/764 (9.2)

RESULTS


A Primary Outcome
Hazard ratio, 0.94 (95% CI, 0.77–1.14)
P=0.53
Cumulative Incidence (%)
100
90
80
70
60
50
40
30
20
10
0
Conservative
Invasive
0
1
2
3
4
5
Years since Randomization
No. at Risk
Conservative 765 553 417 315 236 89
Invasive 753 570 418 305 232 100


B Death from Cardiovascular Causes
Hazard ratio, 1.11 (95% CI, 0.86–1.44)
Cumulative Incidence (%)
100
90
80
70
60
50
40
30
20
10
0
Invasive
Conservative
0
1
2
3
4
5
Years since Randomization
No. at Risk
Conservative 765 612 475 366 289 110
Invasive 753 609 462 342 267 117


C Nonfatal Myocardial Infarction
Hazard ratio, 0.75 (95% CI, 0.57–0.99)
Cumulative Incidence (%)
100
90
80
70
60
50
40
30
20
10
0
Conservative
Invasive
0
1
2
3
4
5
Years since Randomization
No. at Risk
Conservative 765 553 417 315 236 89
Invasive 753 570 418 305 232 100

CONCLUSIONS

- In older adults with NSTEMI, an invasive strategy did not result in a significantly lower risk of cardiovascular death or nonfatal myocardial infarction (the composite primary outcome) than a conservative strategy over a median follow-up of 4.1 years.

MY CONCLUSION

- Invasive treatment did lead to less non-fatal MI and need for revascularization (similar to smaller prior trials).
- I might discuss that finding with patients as this might affect their perceived quality of life.
- Complication rates from invasive strategy <1%.

When poll is active respond at **PollEv.com/arunabmehta145**

How does this trial change your practice?

0%	0%	0%	0%
1 - I'll keep that in mind… and promptly ignore it	2	3	4 - Consider my practice officially under renovation

Powered by Poll Everywhere

QUICK REVIEW OF GLP1 AGONISTS THIS LAST YEAR

TIRZEPATIDE LED TO A LOWER RISK OF A COMPOSITE OF **DEATH FROM CARDIOVASCULAR CAUSES OR WORSENING HEART FAILURE AND IMPROVED HEALTH STATUS** IN PATIENTS WITH HEART FAILURE WITH PRESERVED EJECTION FRACTION AND OBESITY.

ORAL SEMAGLUTIDE LED TO A LOWER RISK OF **MAJOR ADVERSE CARDIOVASCULAR EVENTS** IN PATIENTS WITH TYPE 2 DIABETES AND ATHEROSCLEROTIC CARDIOVASCULAR DISEASE, CHRONIC KIDNEY DISEASE, OR BOTH.

SEMAGLUTIDE (ONCE WEEKLY) LED TO **IMPROVED LIVER HISTOLOGIC RESULTS** IN PATIENTS WITH MASH AND MODERATE OR ADVANCED LIVER FIBROSIS.

TIRZEPATIDE REDUCED **AHI, BODY WEIGHT, HYPOXIC BURDEN, HSCRP CONCENTRATION, AND SYSTOLIC BLOOD PRESSURE, AND IMPROVED SLEEP-RELATED PATIENT-REPORTED OUTCOMES** IN PATIENTS WITH MODERATE TO SEVERE OBSTRUCTIVE SLEEP APNEA AND OBESITY.

SEMAGLUTIDE (ONCE WEEKLY) LED TO A **SIGNIFICANTLY LOWER BODY WEIGHT AND PAIN RELATED TO OSTEOARTHRITIS** IN PATIENTS WITH OBESITY AND OSTEOARTHRITIS WITH MODERATE-TO-SEVERE PAIN.

GLP-1RA USE WAS ASSOCIATED WITH A **LOWER RISK OF PROGRESSION TO CIRRHOSIS AND MORTALITY** IN PATIENTS WITH MASLD AND DIABETES.

METFORMIN WAS ASSOCIATED WITH A **LOWER RATE OF ASTHMA ATTACKS**, WITH FURTHER REDUCTIONS WITH THE USE OF **GLP-1RA**.

SGLT-2I AND GLP-1RA WERE ASSOCIATED WITH A **REDUCED RISK OF MODERATE OR SEVERE COPD EXACERBATIONS** COMPARED WITH DPP-4I IN ADULTS WITH T2DM AND ACTIVE COPD.

SEMAGLUTIDE USE WAS ASSOCIATED WITH A **LOWER RISK OF DEATH, MI, AND STROKE** COMPARED TO **EMPAGLIFLOZIN** IN PATIENTS WITH TYPE 2 DIABETES.

(THE SAME BENEFIT WAS NOT SEEN WITH DULAGLUTIDE VS EMPAGLIFLOZIN.)

GLP-1RA USE (COMPARED TO **SGLT-2I**) WAS ASSOCIATED WITH A **HIGHER RISK OF GERD** IN PATIENTS WITH TYPE 2 DIABETES.

THANK YOU!!

QUESTIONS?