Geriatrics Literature Update

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Learning objectives

- identify areas in clinical medicine where new strong evidence has been uncovered that may affect geriatric practice

- describe the results of a critical appraisal of this evidence including limitations and pitfalls of published articles;

- discuss clinical advances in caring for older adults from a review of recent select peer-reviewed journal articles.

Learning objectives

- Identify areas in clinical medicine where new strong evidence has been uncovered that may affect geriatric practice.
- Describe the results of a critical appraisal of this evidence including limitations and pitfalls of published articles.
- Discuss clinical advances in caring for older adults (including pharmaceutical and non-pharmaceutical interventions) based on a review of recent select peer-reviewed journal articles.
- Discuss highlights of the 2023 update to the American Geriatrics Society (AGS) Beers Criteria for Potentially Inappropriate Medication (PIM) Use in Older Adults.

Disclosures

- No relevant financial relationships.

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Adverse Drug Events (ADEs)

- 100,000 annual hospitalizations for older adults with ADEs
- The top three offending drugs cause 2/3 of these hospitalizations
- They are:
  - Warfarin
  - Insulin
  - Oral hypoglycemic drugs

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SPECIAL ARTICLES

Journal of the
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American Geriatrics Society 2023 updated AGS Beers Criteria® for potentially inappropriate medication use in older adults

By the 2023 American Geriatrics Society Beers Criteria® Update Expert Panel

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Abstract

The American Geriatrics Society (AGS) Beers Criteria® (AGS Beers Criteria®) for Potentially Inappropriate Medication (PIM) Use in Older Adults is widely used by clinicians, educators, researchers, healthcare administrators, and regulators. Since 2011, the AGS has been the steward of the criteria and has produced updates on a regular cycle. The AGS Beers Criteria® is an explicit list of PIMs that are typically best avoided by older adults in most circumstances or under specific situations, such as in certain diseases or conditions. For the 2023 update, an interprofessional expert panel reviewed the evidence published since the last update (2019) and based on a structured assessment process approved a number of important changes including the addition of new criteria, modification of existing criteria, and formatting changes to enhance usability. The criteria are

Beers Criteria - Introduction

- Originally conceived of in 1991 by the late Mark Beers, MD, a geriatrician
- Catalogues medications that cause side effects in the elderly due to the physiologic changes of aging.
- 2023 version is the 7th overall update and 4th since AGS involvement in 2011
- An explicit list of PIMs that are best avoided by older adults in most circumstances or under specific situations, such as certain diseases, conditions, or care settings

Beers Criteria – Intended use

- To be applied to adults 65 years old and older in all ambulatory, acute, and institutionalized settings of care, except hospice and end-of-life care settings.

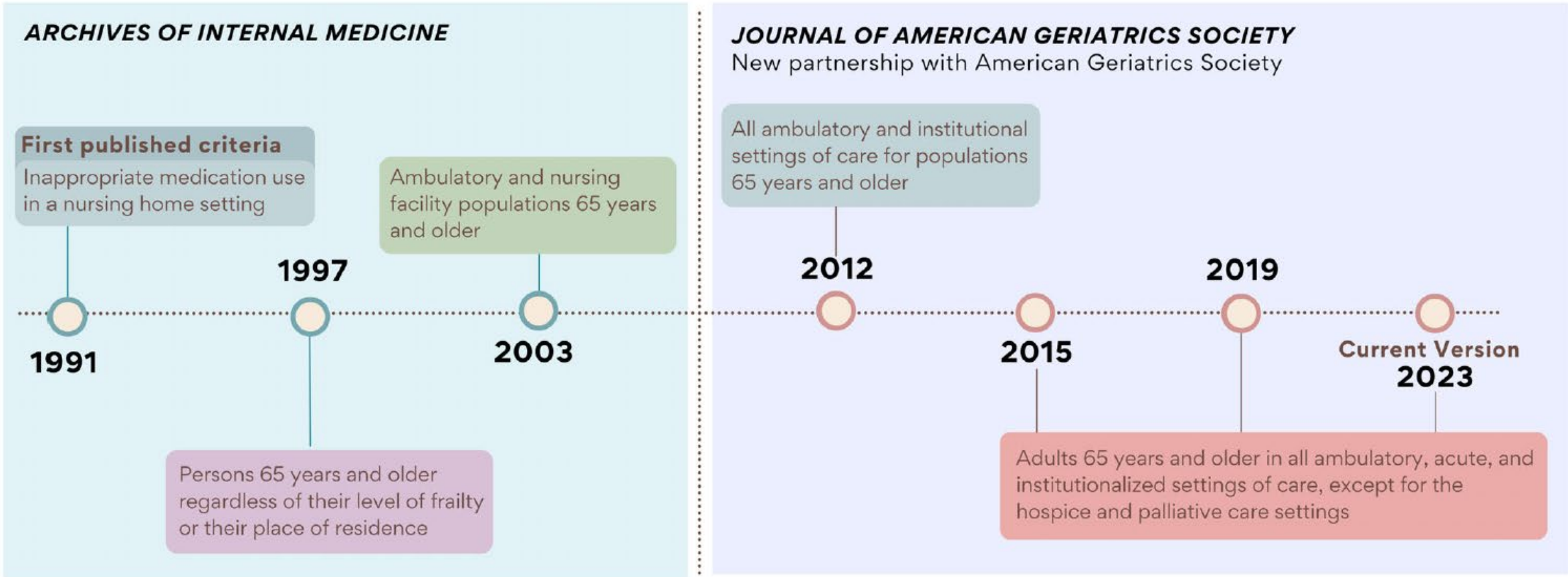
- The intention of the AGS Beers Criteria® is to:
  1) **reduce** older adults' **exposure** to Potentially Inappropriate Medications (PIMs) by improving medication selection;
  2) **educate** clinicians and patients; and
  3) **serve as a tool** for evaluating quality of care, cost, and patterns of drug use in older adults.

Beers Criteria – Intended use

- Guideline for identifying medications (when risks often outweigh benefits)
- Blunt instrument, unable to delineate all specialized use cases and possible exceptions
- Not meant to supersede clinical judgment or an individual patient's values and needs
- Not meant to be applied in a punitive manner.
- Underscore importance of
  - a team approach to prescribing and
  - the use of non-pharmacological approaches and
  - having economic and organizational incentives for this type of model
- Not applicable in all circumstances (i.e., patients receiving palliative and hospice care)

- If a provider is not able to find an alternative and chooses to continue to use a drug on this list in an individual patient, designation of the medication as potentially inappropriate can serve as a reminder for close monitoring and periodic review.

Beers Criteria: Then and Now



J Am Geriatr Soc. 2024;72:3–7.

2023 UPDATES

Criteria are organized into the same five general categories that were used in the 2019 update:

- Medications considered as potentially inappropriate (Table 2);
- Medications potentially inappropriate in patients with certain diseases or syndromes (Table 3);
- Medications to be used with caution (Table 4);
- Potentially inappropriate drug–drug interactions (Table 5); and
- Medications whose dosages should be adjusted based on renal function (Table 6).

2023 UPDATES

- Medications removed due to low usage in the U.S. (but still considered to be PIMS)
- Summary box for criteria for anticoagulants (warfarin, rivaroxaban, and dabigatran) has been added (Box 1).
- Table 7 is a list of drugs with strong anticholinergic properties referred to in Tables 2, 3, and 5.
- A summary of modifications and additions to the criteria is shown in Tables 9 and 10.
- In Table 2, the rationale for anticholinergic drugs to avoid has been expanded to recognize the risks associated with concurrent use (cumulative anticholinergic burden).

2023 UPDATE – Noteworthy changes

Use of aspirin for the primary prevention of cardiovascular disease (CVD) in older adults

- Changed from “use with caution” to “avoid initiating” aspirin for the primary prevention of CVD in older adults *(in agreement with the USPSTF recommendation)*
- For older adults who are already taking aspirin for primary prevention, deprescribing be considered, pending new data

2023 UPDATE – Noteworthy changes

Direct-acting oral anticoagulants (DOACs)

- Recommendation for rivaroxaban has changed from “use with caution” to “avoid” for long-term treatment of nonvalvular atrial fibrillation (AF) and venous thromboembolism (VTE)
- *Observational studies and network meta-analyses – rivaroxaban confers a higher risk of major and GI bleeding in older adults than other (DOACs), particularly apixaban, but also dabigatran.*
- *Recommendation for dabigatran remains as “use with caution” for the long term treatment of nonvalvular atrial fibrillation and VTE because of evidence suggesting an increased risk of GI and major bleeding compared with alternatives such as apixaban.*
- *There may be circumstances when rivaroxaban may be a reasonable choice (other clinical conditions; when a once-daily DOAC is necessary to facilitate medication adherence) and that all DOACs have a lower risk of intracranial hemorrhage than warfarin.*

2023 UPDATE – Noteworthy changes

- **Warfarin** has been added to Table 2 as a medication to be avoided when starting initial therapy for VTE or nonvalvular AF unless alternatives (e.g., DOACs) are C/I or there are substantial barriers to the use of an alternative.
- The distinction between starting warfarin as initial therapy versus maintaining warfarin among current long-term users (especially those with well-controlled international normalized ratio [INR] levels) reflects different evidence for these scenarios as well as considerations of shared decision-making.
- *AGS and the expert panel recognize that cost and access will continue to be a factor in individualized decision-making between warfarin and DOACs and among different DOACs until payment policies are enacted that support equitable access for all individuals regardless of their economic and insurance status.*

2023 UPDATE – Noteworthy changes

Initiation and continuation of estrogen in postmenopausal women

- The initiation of oral and transdermal estrogen is to be avoided in older women; topical vaginal estrogen remains appropriate for its major indications of symptomatic vaginal atrophy or urinary tract infection prophylaxis.
- Deprescribing should be considered for older women already using nonvaginal estrogen replacement.

2023 UPDATE – Noteworthy changes

Sulfonylureas

- Recommendation expanded to avoid all sulfonylureas as first- or second-line monotherapy or add on-therapy *(higher risk of cardiovascular events, all-cause mortality, and hypoglycemia)*
- Possibility of substantial barriers to or pressures opposing the recommendation, including financial ones
- If a sulfonylurea must be used, then a short-acting agent is preferred because of the higher risk of prolonged hypoglycemia with longer-acting sulfonylureas (e.g., glimepiride, chlorpropramide, or glyburide, which is also known as glibenclamide).

2023 UPDATE – Noteworthy changes

Drug-drug interaction

- Use of multiple agents with anticholinergic activity - concurrent use of ≥3 CNS-active drugs from specific therapeutic categories (which now include skeletal muscle relaxants)
- Addition of SSRIs to the list of warfarin drug–drug interactions *(increased risk of bleeding)*

2023 UPDATE – Noteworthy changes

Avoid or reduce dosage with reduced kidney function

- The criterion for apixaban has been removed given the evidence for its safe use in patients with end-stage renal disease.
- Rivaroxaban’s dosing in reduced kidney function is variable and is based on indication; thus, the criteria refer to the product label.
- Baclofen has been added with a recommendation to avoid its use when eGFR is <60 mL/min because of the increased risk for encephalopathy in older adults.

2023 UPDATE – Noteworthy changes

Avoid OR Use with Caution

- Dextromethorphan/quinidine added to the list of drugs to avoid in patients with heart failure (concerns about QT prolongation)
- Opioids added to the list of drugs that can exacerbate delirium (avoid)
- Sodium-glucose co-transporter-2 (SGLT2) inhibitors to be used with caution because of the increased risk of urogenital infection and euglycemic diabetic ketoacidosis,
- Avoid antipsychotics and other medications for behavioral problems of dementia and delirium as their use is frequently associated with harm
- Consider non-pharmacological approaches: e.g., Describe, Investigate, Create, Evaluate (DICE) approach to manage behavioral problems of dementia

2023 UPDATES

Applying the criteria to practice

- Recognize heterogeneity in experience of medication related harms in older adults
- Avoid misinterpretation; many criteria note exceptions and other considerations
- Review each medication within the context of a patient's entire medication list
- Consider non-pharmacologic interventions
- Shared decision making (incorporate patient's preferences, values, treatment goals)

2023 UPDATES

Deprescribing

- Deprescribing skills
- Deprescribing resources
  - https://deprescribing.org/resources/—
  - https://www.deprescribingnetwork.ca/professionals
- Systemic solutions, e.g., adoption of the CancelRx Script Standard to communicate to pharmacies when a drug is stopped and should no longer be refilled.

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RESEARCH PAPER

STOPP/START criteria for potentially inappropriate prescribing in older people: version 3

Denis O'Mahony[1,2] · Antonio Cherubini[3] · Anna Renom Guiteras[4] · Michael Denkinger[5] · Jean-Baptiste Beuscart[6] · Graziano Onder[7] · Adalsteinn Gudmundsson[8] · Alfonso J. Cruz-Jentoft[9] · Wilma Knol[10] · Gülistan Bahat[11] · Nathalie van der Velde[12] · Mirko Petrovic[13] · Denis Curtin[2]

STOPP-START v.3

Screening Tool Of Older People's Prescriptions (STOPP)
Screening Tool to Alert to Right Treatment (START)

Purpose : STOPP/START is a physiological systems-based explicit set of criteria that attempts to define the clinically important prescribing problems relating to potentially inappropriate medications (PIMs–STOPP criteria) and potential prescribing omissions (PPOs–START criteria). The previous two versions of STOPP/START criteria were published in 2008 and 2015. The 2023 version is the revised and updated third version of the criteria.

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2023 UPDATES

- Expanded and validated by an international European panel of experts in geriatric pharmacotherapy (11 academic geriatricians in 8 countries) – (previous versions: Ireland, U.K.)
- Version 3, has 190 criteria; much larger than version 2 (114 criteria)
- 133 STOPP criteria
- 57 START criteria

- START criteria are designed to detect potential prescribing omissions (PPOs) which represent another critically important aspect of inappropriate prescribing, i.e., undertreatment or failure to prescribe appropriate medications despite clear and valid indications.

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CLINICAL INVESTIGATION

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Mapping potentially inappropriate medications in older adults using the Anatomical Therapeutic Chemical (ATC) classification system

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Abstract

Background: Potentially inappropriate medications (PIMs) in older adults are medications in which risks often outweigh benefits and are suggested to be avoided. Worldwide, many distinct guidelines and tools classify PIMs in older adults. Collating these guidelines and tools, mapping them to a medication classification system, and creating a crosswalk will enhance the utility of PIM guidance for research and clinical practice.

Mapping PIMs in older adults using the ATC classification system

- Used the Anatomical Therapeutic Chemical (ATC) Classification System, a hierarchical classification system, to map PIMs from eight distinct guidelines and tools (2019 Beers Criteria, Screening Tool for Older Person's Appropriate Prescriptions [STOPP], STOPP-Japan, German PRISCUS, European Union-7 Potentially Inappropriate Medication [PIM] list, Centers for Medicare & Medicaid Services [CMS] High-Risk Medication, Anticholinergic Burden Scale, and Drug Burden Index).

Mapping PIMs in older adults using the ATC classification system

Key points

- The crosswalk study enables standardized comparison of medications across guidelines and tools, improving the reliability and validity of potentially inappropriate medication (PIM) research.

- The crosswalk assists in identifying potentially inappropriate medications involved in prescribing cascades and other emerging concepts, informing deprescribing interventions.

TABLE 1 Number of potentially inappropriate medications identified in the 8 guidelines and tools classified into the 14 anatomical main groups.

ATC anatomical main group		PIMs guideline and tools							
		ABS	Beers'	EU	PRISCUS	STOPP	Japan	CMS	DBI
A	Alimentary tract and metabolism	6	22	56	2	26	15	8	6
B	Blood and blood forming organs	0	1	19	2	8	2	2	0
C	Cardiovascular system	0	11	53	17	24	9	8	6
D	Dermatologicals	0	0	0	0	2	4	0	0
G	Genito urinary system and sex hormones	10	22	28	6	11	8	19	8
H	Systemic hormonal preparations, excluding sex hormones and insulins	0	11	0	0	0	2	1	1
J	Antiinfectives for systemic use	0	1	2	1	0	0	1	0
L	Antineoplastic and immunomodulating agents	0	0	0	0	0	0	0	0
M	Musculo-skeletal system	3	20	29	9	17	16	7	4
N	Nervous system	29	93	114	43	55	30	28	97
P	Antiparasitic products, insecticides, and repellents	0	0	0	0	0	0	0	0
R	Respiratory system	8	13	31	7	3	4	13	18
S	Sensory organs	0	0	0	0	0	0	0	0
V	Various	0	0	0	0	0	0	0	0

Abbreviations: ABS, Anticholinergic Burden Scale; DBI, Drug Burden Index; CMS HRM, Centers for Medicare & Medicaid Services (CMS) High-Risk Medication; EU, European Union; STOPP, Screening Tool of Older Persons' Prescription.

ATC Classification

- In the Anatomical Therapeutic Chemical (ATC) classification system, the active substances are divided into different groups according to the organ or system on which they act and their therapeutic, pharmacological and chemical properties.

- Drugs are classified in groups at five different levels.

WHO’s ATC Classification

- ATC 1st level: fourteen main anatomical or pharmacological groups
- ATC 2nd level: Pharmacological or Therapeutic subgroup
- ATC 3rd& 4th levels: Chemical, Pharmacological or Therapeutic subgroup
- ATC 5th level: Chemical substance

The 2nd, 3rd and 4th levels are often used to identify pharmacological subgroups when that is considered more appropriate than therapeutic or chemical subgroups.

https://www.who.int/tools/atc-ddd-toolkit/atc-classification

The complete classification of metformin:

A	**Alimentary tract and metabolism**
	(1st level, anatomical main group)
A10	**Drugs used in diabetes**
	(2nd level, therapeutic subgroup)
A10B	**Blood glucose lowering drugs, excl. insulins**
	(3rd level, pharmacological subgroup)
A10BA	**Biguanides**
	(4th level, chemical subgroup)
A10BA02	**Metformin**
	(5th level, chemical substance)

Medicinal substances are classified according to their main therapeutic use on the basic principle of only one ATC code for each medicinal product (as defined by route of administration and in some cases strength).

The classification of verapamil:

C ----------Cardiovascular system
C08----------Calcium channel blockers
C08D----------Selective calcium channel blockers with direct cardiac effects
C08DA----------Phenylalkylamine derivatives
C08DA01--------Verapamil

In many ATC main groups, pharmacological groups have been assigned on the 2nd, 3rd and 4th levels allowing drugs with several therapeutic uses to be included, without specifying the main indication.

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Safety of baclofen versus tizanidine for older adults with musculoskeletal pain

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Abstract

Background: Baclofen and tizanidine are both muscle relaxants that carry the risk for neuropsychiatric events in older adults but there is a lack of data directly comparing their safety. This study aimed to investigate the relative risk between these two medications in causing injury and delirium in older adults.

Methods: This was a retrospective cohort study that was completed in an integrated healthcare system in the United States and included patients aged 65 years or older who started baclofen or tizanidine for the treatment of musculoskeletal pain from January 2016 through December 2018. Outcomes

Methods

Study design and population:

- Retrospective, data-only cohort study that was conducted within the Kaiser Permanente (KP) Northern California (NC) and Southern California (SC) regions.
- Older adults 65 years or older who newly filled either a baclofen or tizanidine prescription during the cohort identification period (2016—2018) AND were diagnosed with musculoskeletal pain.

Exclusion Criteria

- Patients were excluded if they received intrathecal baclofen during the study period or were initiated on both study drugs on the index date.
- Patients were also excluded if they had a diagnosis of alcohol or substance use disorder, dementia, or multiple sclerosis (or other types of spinal involvement) within the 2 years prior to the index date.

Methods

Follow-up:

- The follow-up period started from the index date until the first occurrence of any of the following events: end of the index drug exposure based on days' supply of the last prescription, end of membership, death, or the study end date (December 31, 2019).

Outcomes studied:

- New incidence of injury and new incidence of delirium.

12,101 patients in baclofen group

6,027 patients in tizanidine group

TABLE 1 Baseline characteristics of patients in the baclofen and tizanidine cohorts.

Characteristic	Baclofen (n = 12,101)	Tizanidine (n = 6027)	Standard differences
Age, mean (SD)	72.1 (6.1)	72.4 (6.4)	−0.04
Female, n (%)	7178 (59.3)	3506 (58.2)	−0.12
Race, n (%)			0.26
White	7090 (58.6)	3941 (65.4)	
African American	1109 (9.2)	449 (7.4)	
Hispanic	2408 (19.9)	743 (12.3)	
Asian	1050 (8.7)	641 (10.6)	
Unknown race	444 (3.7)	253 (4.2)	
Charlson Comorbidity Index, median (IQR)[a]	1 (0, 2)	1 (1, 3)	−0.12
Chronic kidney disease, n (%)			0.24
Stage 1	3057 (25.3)	988 (16.4)	
Stage 2	6743 (55.7)	3954 (65.6)	
Stage 3	2208 (18.2)	1019 (16.9)	
Stage 4	63 (0.5)	42 (0.7)	
Stage 5	30 (0.2)	24 (0.4)	
Recent injury within 100 days prior to index date, n (%)	684 (5.7)	282 (4.7)	0.06
Prescription within 100 days prior to index date, n (%)			
Skeletal muscle relaxants[b]	325 (2.7)	167 (2.8)	−0.02
Benzodiazepines	1452 (12)	642 (10.7)	0.04
Insulin	381 (3.1)	281 (4.7)	−0.08
Sedative hypnotics	101 (0.8)	59 (1.0)	−0.02
Antihistamines	276 (2.3)	157 (2.6)	−0.03
Antidepressants	2778 (23)	1359 (22.5)	−0.01
Antipsychotics	181 (1.5)	72 (1.2)	0.02
Anticonvulsants	1409 (11.6)	814 (13.5)	−0.05

Abbreviations: IQR, interquartile range; SD, standard derivation.

[a]Values for the Charlson Comorbidity Index range from 0 to 17.

[b]Excluding baclofen and tizanidine.

Results

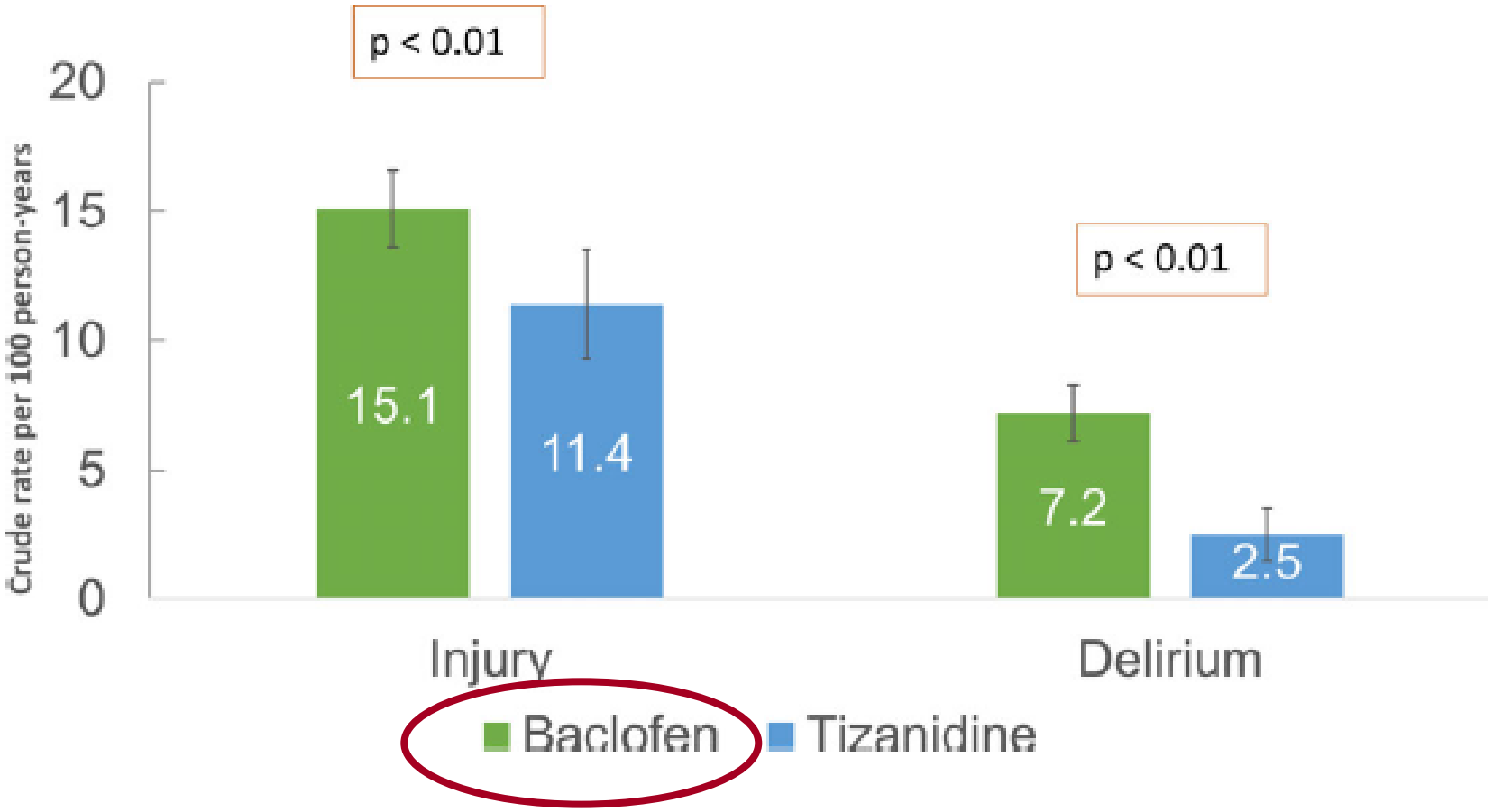

FIGURE 1 Unadjusted crude rates for injury and delirium by study group.

Results

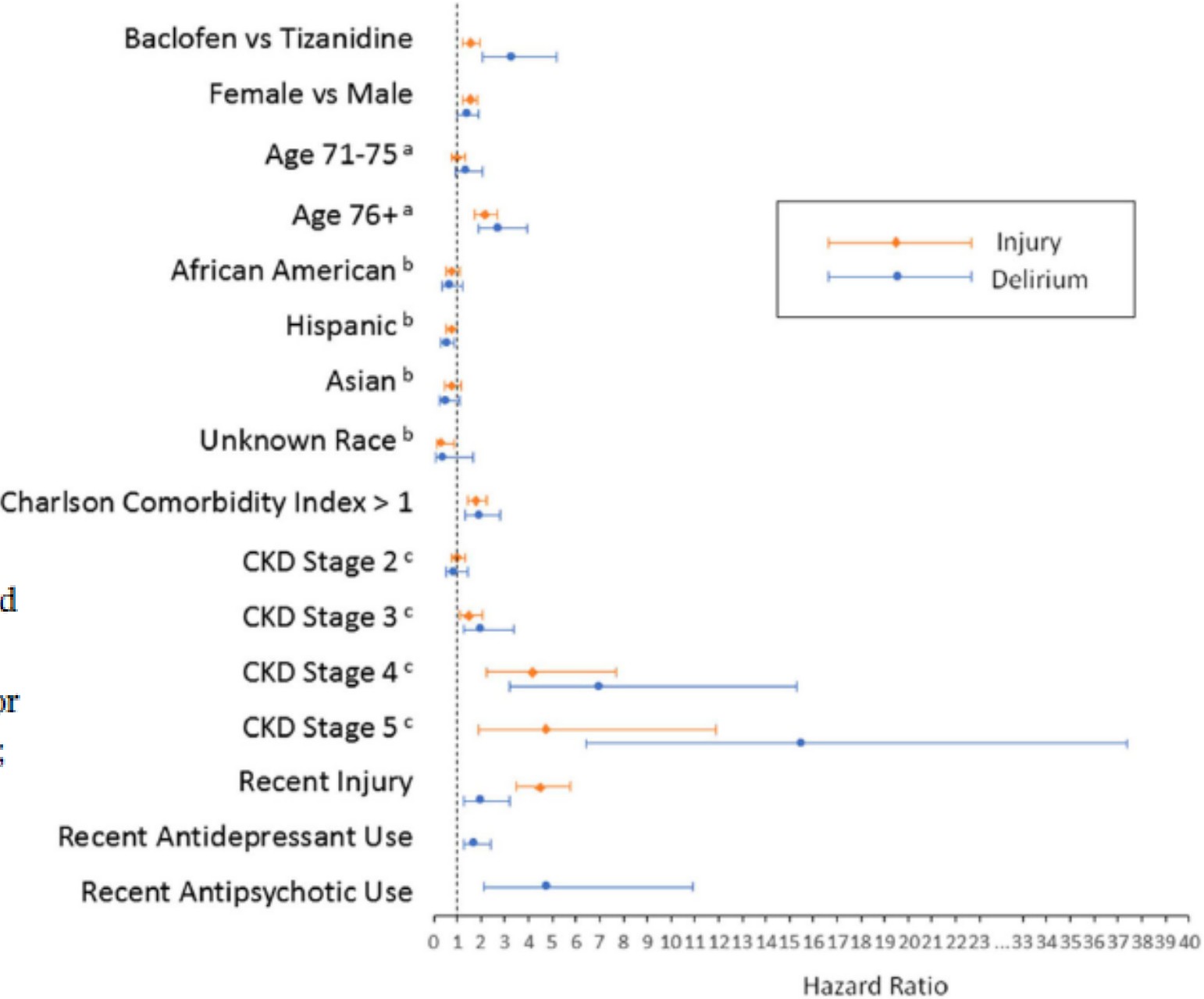

FIGURE 2 Adjusted hazard ratio on factors associated with injury and delirium. Comparator groups: [a]age 65–70; [b]white race; [c]CKD stage 1.

Results

- After adjusting for covariates, **baclofen users had a risk of injury that was 56 percent greater than that of tizanidine users (adjusted HR = 1.56**, 95% CI 1.21–1.96, $p < 0.001$).
- Other significant risk factors for injury included age over 76, having CKD stages 3–5, or having a history of a recent injury.
- After accounting for covariates, **baclofen users had a significantly higher risk of delirium compared with tizanidine users (adjusted HR = 3.33**, 95% CI 2.11–5.26, $p < 0.001$).
- Other significant risk factors for the delirium outcome included being age over 76, having CKD stage 3–5, recent injury, recent antidepressant use, and recent antipsychotic use.

Strengths:

- Large data set with continuity of records
- Statistical analysis

Limitations:

- Retrospective non-randomized study: multiple residual confounding variables
- Selection bias between the two groups, (tizanidine group had more comorbid conditions and worse kidney functions)
- No stratification based on cumulative dose
- Did not include non-exposure group
- Did not adjust for medications used during follow-up
- Omitted opioids that may contribute to delirium per recent Beers criteria update
- Relied on diagnoses codes for injury and delirium but did not do chart review.

Conclusion

- When used to treat musculoskeletal pain in older adults, baclofen is associated with significantly higher incidences of injury and delirium compared to tizanidine.
- Although neither medication is listed in the AGS Beers Criteria for potentially inappropriate medication use in older adults, both medications, especially baclofen, carry risks for neuropsychiatric effects, such as injury and delirium, and should be used with caution in older individuals.

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CLINICAL INVESTIGATION

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Baclofen and the risk of fall and fracture in older adults: A real-world cohort study

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Abstract

Background: The growth of oral muscle relaxant prescriptions among older adults in the United States is concerning due to the drugs' adverse sedative effects. Baclofen is a gamma-aminobutyric acid agonist muscle relaxant that is associated with encephalopathy. We characterized the risk of fall and fracture associated with oral baclofen against other muscle relaxants (tizanidine or cyclobenzaprine) in older adults.

Methods

Study design and population:

- New-user, active-comparator cohort study using electronic health record data from Geisinger Health (2005 –2018).
- Older adults (aged 65 years or older) with a new prescription for baclofen, tizanidine, or cyclobenzaprine.
- Two comparisons: (i) new users of baclofen versus new users of tizanidine and (ii) new users of baclofen versus new users of cyclobenzaprine.
- The study cohort comprised 2205 new baclofen users, 1103 new tizanidine users, and 9708 new cyclobenzaprine users from 2005 to 2018. The median (IQI) duration of prescription was 111 (49–253) days for baclofen, 114 (50–290) days for tizanidine, and 114 (46–275) days for cyclobenzaprine.

Methods

Exclusion Criteria

- Prior falls or fractures
- No recent serum creatinine level
- End stage kidney disease: Dialysis, status post transplant

Outcomes studied:

- The primary outcome was a clinical encounter (defined as an emergency department visit, hospitalization, or outpatient visit) with fall.
- The secondary outcome was a clinical encounter with fracture.

Results

- In IPTW analyses, the **risk of fall was higher in older adults newly treated with baclofen** (incidence rate, 108.4 [95% CI, 91.3–129.4] per 1000 person-years) **compared to those treated with tizanidine** (incidence rate, 61.9 [95% CI, 46.1–84.8] per 1000 person-years) with SHR of 1.68 (95% CI, 1.20–2.36).
- In IPTW analyses, the **risk of fall was similar between new baclofen users** (incidence rate, 78.3 [95% CI, 63.6–97.0] per 1000 person-years) **and new cyclobenzaprine users** (incidence rate, 65.1 [95% CI, 58.5–72.5] per 1000 person-years) with SHR of 1.17 (95% CI, 0.93–1.47].

Results

- Older adults newly **treated with baclofen had a similar risk of fracture as those newly treated with tizanidine** (SHR, 0.85 [95% CI, 0.63–1.14]).
- Similarly, the **risk of fracture was not different between new baclofen** users and cyclobenzaprine users (SHR, 0.85 [95% CI, 0.67–1.07]).

Conclusion

- Baclofen was associated with a **higher risk of fall** compared to tizanidine, but not compared to cyclobenzaprine.
- The **risk of fracture** associated with baclofen was **similar** to tizanidine and cyclobenzaprine.

Additional Comments

Baclofen has been newly added as a drug that should be avoided or have its dosage reduced with decreased kidney function (eGFR <60mL/min/1.73 m2) in the American Geriatrics Society 2023 updated AGS Beers Criteria® based on its encephalopathy risk.

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CLINICAL INVESTIGATION

Journal of the
American Geriatrics Society

Anticoagulation and venous thromboembolism in patients aged 90 years and older: Data from the RIETE registry

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[Correction added after first online publication on 4 November 2023. The first affiliation of Laurent Bertoletti has been revised in this version.]

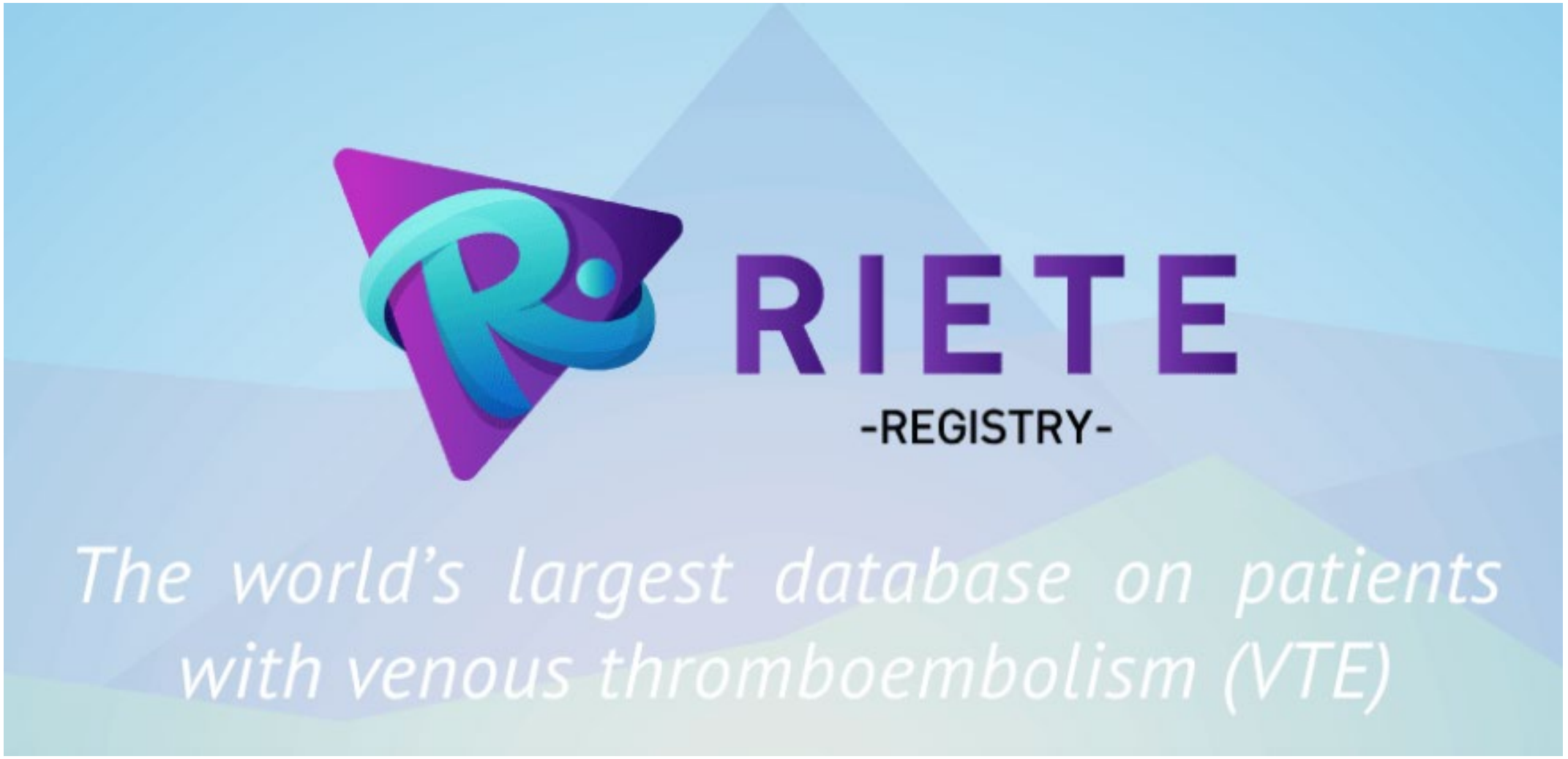
Abstract

Background: Age is a major risk factor for venous thromboembolism (VTE), yet patients aged ≥90 years are under-represented in clinical trials of anticoagulant therapy. The objectives were to describe and compare patient clinical characteristics, treatments, and outcomes (VTE recurrence, bleeding, and mortality) during the first 3 months of anticoagulation between VTE patients aged ≥90 years and those aged <90 years.

Methods: We analyzed data from the Registro Informatizado Enfermedad TromboEmbólica (RIETE), an ongoing global observational registry of patients with objectively confirmed acute VTE.

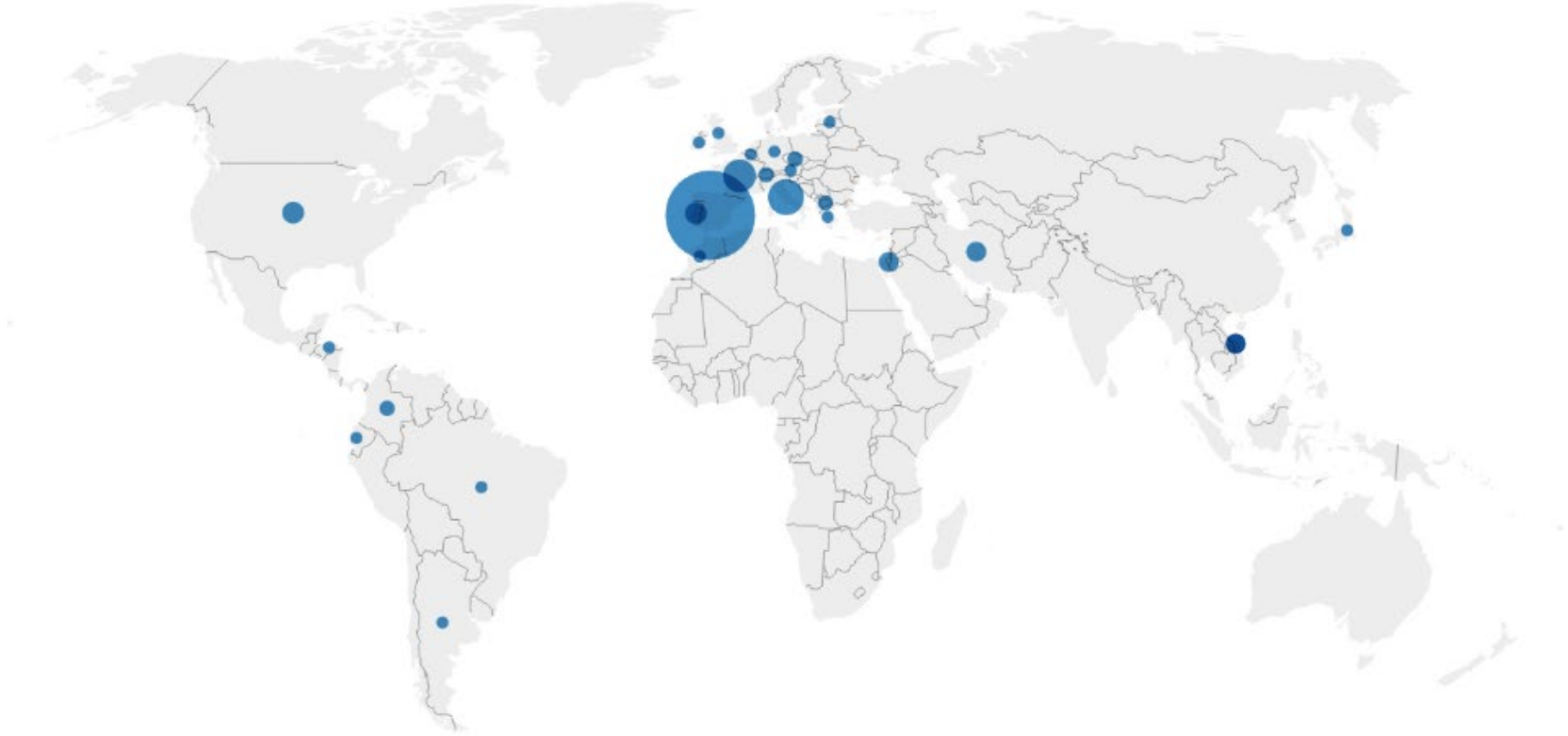
Background and Methods

- Age is a major risk factor for venous thromboembolism (VTE), yet patients aged ≥90 years are under-represented in clinical trials of anticoagulant therapy.
- Data from the Registro Informatizado Enfermedad TromboEmbólica (RIETE), an ongoing global observational registry of patients with objectively confirmed acute VTE was analyzed.
- The RIETE investigators for this study are from France and Spain.
- **Primary objective was to describe clinical outcomes, including the rates of VTE recurrence, major bleeding events, and mortality, during the first 3 months of anticoagulant treatment for VTE. These data were compared by age category (patients aged ≥90 years versus those aged <90 years).**



The Computerized Registry of Patients with Venous Thromboembolism (RIETE) is an internet database, where clinical information of patients with venous thromboembolism (VTE) is entered and maintained. https://rieteregistry.com/welcome/

Active hospitals around the world



RIETE was set up in March 2001 in 25 Spanish hospitals. Now it includes 26 countries.

Numbers in parenthesis are percentages.

TABLE 1 Patient clinical characteristics.

Characteristic	Patients aged ≥90 years $N = 3262$	Patients aged <90 years $N = 93{,}439$	OR (95% CI)	*p*-value
Demographics				
Gender (male), no. of patients (%)	808 (25)	46,935 (50)	0.33 (0.30–0.35)	<0.001
Age, years (mean ± SD)	92 ± 2	65 ± 17	–	<0.001
Body weight, kg (mean ± SD)	64 ± 12	77 ± 16	–	<0.001
Initial presentation of VTE, no. of patients (%)				
Pulmonary embolism	1922 (59)	52,779 (56)	1.10 (1.03–1.19)	0.006
Isolated DVT	1340 (41)	40,660 (44)	0.90 (0.84–0.97)	0.006
Risk factors for VTE, no. of patients (%)				
Active cancer	333 (10)	15,906 (17)	0.55 (0.49–0.62)	<0.001
Recent surgery	151 (4.6)	10,070 (11)	0.40 (0.34–0.47)	<0.001
Recent immobility	1303 (40)	20,824 (22)	2.32 (2.16–2.49)	<0.001
None of the above	1581 (48)	47,493 (51)	0.91 (0.85–0.98)	0.008
Prior VTE	430 (13)	14,080 (15)	0.86 (0.77–0.95)	0.003
Comorbidities, no. of patients (%)				
Chronic heart failure	609 (19)	5725 (6.1)	3.52 (3.21–3.86)	<0.001
Chronic lung disease	413 (13)	10,523 (11)	1.14 (1.03–1.27)	0.014
Atrial fibrillation	330 (10)	2446 (2.6)	4.19 (3.71–4.72)	<0.001
Hypertension	1727 (53)	32,435 (35)	2.12 (1.97–2.27)	<0.001
Diabetes	408 (13)	10,669 (11)	1.11 (1.00–1.23)	0.056

Prior myocardial infarction	273 (8.4)	4520 (4.8)	1.80 (1.58–2.04)	<0.001
Prior ischemic stroke	346 (11)	4216 (4.5)	2.51 (2.24–2.82)	<0.001
Peripheral artery disease	105 (4.4)	2330 (3.5)	1.27 (1.04–1.55)	0.019
Dementia	689 (21)	3284 (3.5)	7.35 (6.71–8.05)	<0.001
Depression	217 (6.7)	4574 (4.9)	1.38 (1.20–1.59)	<0.001
Parkinson's disease	66 (2.0)	1018 (1.1)	1.87 (1.46–2.41)	<0.001
Epilepsy	25 (0.8)	900 (1.0)	0.79 (0.53–1.18)	0.314
Recent major bleeding	76 (2.3)	2116 (2.3)	1.03 (0.82–1.30)	0.817
Blood test results, no. of patients (%)				
Anemia	1433 (44)	30,780 (33)	1.59 (1.49–1.71)	<0.001
Platelet count <100,000	76 (2.3)	2260 (2.4)	0.96 (0.76–1.21)	0.810
CrCl levels 30–60 mL/min	1709 (52)	25,451 (27)	2.94 (2.74–3.15)	<0.001
CrCl levels <30 mL/min	1249 (38)	4209 (4.5)	13.15 (12.18–14.21)	<0.001
Concomitant therapies, no. of patients (%)				
Antiplatelet agents	953 (32)	13,401 (16)	2.53 (2.33–2.73)	<0.001
Corticosteroids	216 (7.3)	7740 (9.1)	0.79 (0.69–0.91)	<0.001
Psychotropic drugs	740 (34)	11,320 (18)	2.42 (2.21–2.65)	<0.001
Statins	472 (14)	15,160 (16)	0.87 (0.79–0.96)	0.008

Results

- From January 2001 to October 2022, **96,701 patients** were registered in RIETE, of whom **3262 (3.4%) were aged ≥90 years**.
- Patients aged ≥90 years were less likely to be men, and to have experienced cancer or recent surgery, but more likely to manifest immobility, chronic heart failure, anemia, renal insufficiency, or dementia than those aged <90 years.
- Most (99.6%) patients aged ≥90 years were **receiving anticoagulant therapy**.
- For initial therapy, patients were **principally treated with heparins**, regardless of age category (92%), followed by DOACs (approximately 4%).

TABLE 2 Clinical outcomes during the first 3 months of anticoagulation, according to patient age.

	Patients aged ≥90 years		Patients aged <90 years		
	N	**Cumulative incidence (95% CI) *N* = 3262**	***N***	**Cumulative incidence (95% CI) *N* = 93,439**	**Cumulative incidence ratio (95% CI)**
Duration of therapy, days					
Median (IQR)		90 (88–90)		90 (90–90)	
Outcomes					
Recurrent VTE	26	3.88 (2.59–5.60)	1425	6.70 (6.36–7.05)	0.58 (0.38–0.84)
Recurrent PE	21	3.13 (1.99–4.70)	721	3.37 (3.13–3.63)	0.93 (0.59–1.40)
Recurrent DVT	5	0.74 (0.27–1.65)	704	3.30 (3.06–3.55)	0.23 (0.08–0.50)
Major bleeding	116	17.4 (14.4–20.8)	1804	8.48 (8.09–8.88)	2.05 (1.69–2.47)
Gastrointestinal	45	6.71 (4.95–8.90)	591	2.76 (2.55–2.99)	2.43 (1.77–3.26)
Hematoma	38	5.67 (4.07–7.70)	416	1.94 (1.76–2.14)	2.92 (2.07–4.02)
Intracranial	14	2.08 (1.18–3.41)	264	1.23 (1.09–1.39)	1.69 (0.95–2.81)
Retroperitoneal	3	0.45 (0.11–1.21)	161	0.75 (0.64–0.87)	0.59 (0.15–1.64)
Other	16	2.40 (1.42–3.82)	372	1.79 (1.62–1.98)	1.34 (0.79–2.16)
Death	564	83.8 (77.1–90.9)	5687	26.5 (25.8–27.2)	3.16 (2.90–3.44)
Fatal PE	78	11.6 (9.22–14.4)	690	3.22 (2.98–3.46)	3.60 (2.83–4.53)
Fatal bleeding	30	4.46 (3.06–6.28)	297	1.38 (1.23–1.55)	3.22 (2.18–4.63)

Abbreviations: CI, confidence interval; DVT, deep-vein thrombosis; IQR, inter-quartile ratio; PE, pulmonary embolism; VTE, venous thromboembolism.

TABLE 3 Clinical outcomes during anticoagulation in patients aged ≥90 years, according to initial VTE presentation.

Parameter	PE with or without DVT		Isolated DVT		
	N	Cumulative incidence (95% CI) *N* = 1922	*N*	Cumulative incidence (95% CI) *N* = 1340	Cumulative incidence ratio (95% CI)
Duration of therapy, days					
Median (IQR)		90 (80-90)		90 (90-90)	
Outcomes					
Recurrent VTE	17	4.45 (2.68–6.98)	9	3.12 (1.52–5.72)	1.43 (0.64–3.36)
Recurrent PE	14	3.66 (2.08–6.00)	7	2.42 (1.06–4.79)	1.51 (0.62–4.00)
Recurrent DVT	3	0.78 (0.20–2.13)	2	0.69 (0.12–2.28)	1.13 (0.17–9.54)
Major bleeding	65	17.1 (13.3–21.7)	51	17.8 (13.4–23.2)	0.96 (0.67–1.39)
Gastrointestinal	28	7.33 (4.96–10.4)	17	5.89 (3.55–9.24)	1.24 (0.68–2.32)
Hematoma	19	4.97 (3.08–7.62)	19	6.60 (4.09–10.1)	0.75 (0.40–1.44)
Intracranial	7	1.83 (0.80–3.61)	7	2.42 (1.06–4.78)	0.76 (0.25–2.25)
Retroperitoneal	3	0.78 (0.20–2.13)	0	–	–
Other	8	2.10 (0.98–4.00)	8	2.79 (1.30–5.31)	0.75 (0.27–2.08)
Death	393	102.5 (92.7–113.0)	171	59.0 (50.6–68.4)	1.74 (1.45–2.08)
Fatal PE	76	19.8 (15.7–24.7)	2	0.69 (0.12–2.28)	28.7 (8.45–174.2)
Fatal bleeding	19	4.96 (3.07–7.60)	11	3.80 (2.00–6.60)	1.31 (0.62–2.84)

Abbreviations: CI, confidence interval; DVT, deep-vein thrombosis; IQR, inter-quartile ratio; PE, pulmonary embolism; VTE, venous thromboembolism.

Results

- During the first 3 months, 26 patients aged ≥90 years developed VTE recurrences, 116 experienced major bleeding, and 564 died.

For those ≥ 90 years:

- Among patients initially presenting with pulmonary embolism (PE), **deaths due to PE exceeded those due to fatal bleeding** (76 vs. 19).
- Among those initially presenting with isolated deep-vein thrombosis (DVT), **it was the reverse** (2 vs. 11 deaths).
- No significant differences in 3-month outcomes between those treated with DOACs and those on VKAs for long-term therapy of VTE.

Key Points

Patients aged ≥90 years represent a very special population requiring particular attention for therapeutic management of VTE events.

Patients aged ≥90 years are more than 3.60-fold more likely to experience fatal PE, and 3.22-fold more likely to experience fatal bleeding than patients aged <90 years.

Patients aged ≥90 years who presented with isolated DVT had a higher risk of fatal bleeding than fatal PE during the first 3 months.

Conversely, among patients aged ≥90 years who presented with PE, the risk of death from PE outweighed the risk of fatal bleeding during the first 3 months of follow-up (particularly in the first month).

Strengths:

- RIETE registry
- Observational data about overview of the therapies used practice and the frequency of associated events (VTE recurrence or major bleeding).

Limitations:

- Observational study
- Lack of frailty status
- Lack of data on concomitant therapies
- Underrepresentation of 90 y.o. by under diagnosis of VTE and burden of comorbidities

Conclusions

In patients aged ≥90 years, the difference in the outcome of anticoagulant treatment depending on the initial presentation of VTE could suggest a need for different management approaches.

4

STATIN categories

- Lipophilic statins include simvastatin, lovastatin, and atorvastatin.

- Hydrophilic statins include pravastatin, fluvastatin, and rosuvastatin.

Statin Dosing and ACC/AHA Classification of Intensity

Statin	Low-Intensity Dosage (LDL-C Reduction <30%)	Moderate-Intensity Dosage (LDL-C Reduction 30% to <50%)	High-Intensity Dosage (LDL-C Reduction ≥50%)
Atorvastatin	NA	10 to 20 mg	40 to 80 mg
Fluvastatin	20 to 40 mg	40 mg 2x/day; XL 80 mg	NA
Lovastatin	20 mg	40 to 80 mg	NA
Pitavastatin	NA	1 to 4 mg	NA
Pravastatin	10 to 20 mg	40 to 80 mg	NA
Rosuvastatin	NA	5 to 10 mg	20 to 40 mg
Simvastatin	10 mg	20 to 40 mg	NA

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REVIEW ARTICLE

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Discontinuation versus continuation of statins: A systematic review

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Abstract

Background: Clinicians and patients often face a decision to continue or discontinue statins. We examined the impact of discontinuation of statins compared with continuation on clinical outcomes (all-cause mortality, cardiovascular [CV] mortality, CV events, and quality of life).

Methods: We conducted a systematic review. Randomized controlled trials (RCTs), cohort studies, case–control studies, and quasi-randomized studies among people ≥18 years were eligible. We searched MEDLINE, Embase, and Cochrane Central Registry (inception to August 2023). Two independent reviewers performed screening and extracted data. Quality assessment was performed by one author and verified by another. We summarized results narratively, performed

Common reasons to alter statin use

Changing health status / function

Shifting treatment goals and preferences

Actual or perceived adverse effects

Patient inquiry

Routine medication review

Limited evidence of benefits and harms of statins among >75 yo with multimorbidity and frailty

Outcome measures

Primary:

- All-cause mortality
- CV mortality
- Major adverse cardiovascular events (MACE) composite
- Individual MACE components: MI, transient ischemic attack, stroke, revascularization

Secondary:

- Adverse effects
- Quality of life
- Pill burden

Certainty of evidence

- Very low: discontinuation might have an effect on outcome but we are very uncertain
- Low: discontinuation might affect the outcome
- Moderate: discontinuation probably affects the outcome
- High certainty evidence: discontinuation has an effect on the outcome

Process

- Database search, years of publication 1946-2023 August
- 8369 studies screened – 319 reviewed in full – 36 met eligibility
- (Refer to Table 1 of the article)
- Studies grouped by design: 35 non-randomized, 1 RCT
- Categorized by patient population: primary prevention (4), secondary prevention (12), mixed prevention (7)

Summary of findings

- 35 non-randomized studies and 1 RCT that examined the effects of statin discontinuation.
- Among people with limited life expectancy**, evidence from one RCT suggested that statin discontinuation probably did not have any effect on mortality at 60 days or CV events at 1 year.**
- Data from non-randomized studies consistently suggested that **statin discontinuation might be associated with a relative increase in the risk of all-cause mortality, CV mortality, and the composite of major adverse CV events** compared with continuing statins.

However, there were concerns around risk of bias, such as the potential for confounding by indication (i.e., statins might have been discontinued because people were in poorer health, and poor health could be the cause of an increased risk of adverse events rather than statin discontinuation alone.

Limitations

- Concerns around risk of bias: potential for confounding by indication (i.e. statins might have been discontinued because people were in poorer health, and poor health could be the cause of increased risk of adverse events)
- Absolute risk of outcomes largely unclear
- Variability in outcome rates and baseline risk in different studies (likely reflects differences in setting, patient population, duration of follow-up; several studies examined effects of stain discontinuation immediately after an incident CV event)
- Non-randomized studies primarily used pharmacy claims data to define discontinuation (potential for misclassification and do not identify why a statis was discontinued)

Key Points

- Decision to continue or stop a statin should be considered a preference-sensitive decision (persons individual healthcare goals and treatment preferences are incorporated into decision-making)

- Evidence (or lack thereof) on starting statins in 70+ yo may not be as applicable to the decision to discontinue statins

Key Points

- Guidelines suggest it is reasonable to continue statins among people who are relatively healthy, functioning independently, and have longer life expectancy

- For older persons with limited life expectancy, statin discontinuation may be reasonable

- There is stronger evidence of potential benefit for those taking statins for secondary prevention than for primary prevention

Annals of Internal Medicine

ORIGINAL RESEARCH

Benefits and Risks Associated With Statin Therapy for Primary Prevention in Old and Very Old Adults

Real-World Evidence From a Target Trial Emulation Study

Wanchun Xu, MPhil; Amanda Lauren Lee, MS; Cindy Lo Kuen Lam, MD; Goodarz Danaei, ScD; and Eric Yuk Fai Wan, PhD

Background: There is little consensus on using statins for primary prevention of cardiovascular diseases (CVDs) and all-cause mortality in adults aged 75 years or older due to the underrepresentation of this population in randomized controlled trials.

Objective: To investigate the benefits and risks of using statins for primary prevention in old (aged 75 to 84 years) and very old (aged ≥85 years) adults.

Design: Sequential target trial emulation comparing matched cohorts initiating versus not initiating statin therapy.

Setting: Territory-wide public electronic medical records in Hong Kong.

Results: Of 42 680 matched person-trials aged 75 to 84 years and 5390 matched person-trials aged 85 years or older (average follow-up, 5.3 years), 9676 and 1600 of them developed CVDs in each age group, respectively. Risk reduction for overall CVD incidence was found for initiating statin therapy in adults aged 75 to 84 years (5-year standardized risk reduction, 1.20% [95% CI, 0.57% to 1.82%] in the intention-to-treat [ITT] analysis; 5.00% [CI, 1.11% to 8.89%] in the per protocol [PP] analysis) and in those aged 85 years or older (ITT: 4.44% [CI, 1.40% to 7.48%]; PP: 12.50% [CI, 4.33% to 20.66%]). No significantly increased risks for myopathies and liver dysfunction were found in both age groups.

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Study Design, Methods

- Data extracted using EHRs from the clinical management system of the Hong Kong Health Authority

- Analysis included all adult patients older than 60 years without preexisting diagnosed CVDs and who met indications for statin treatment in each calendar month from January 2008 to December 2015.

Study Design, Methods

- **Intervention = initiation of statin therapy**
- **Statin therapy** was defined as the treatment with any dose of simvastatin, atorvastatin, fluvastatin, rosuvastatin, lovastatin, pitavastatin, and/or pravastatin.

- The **outcomes of interest** included the overall incidence of major CVDs (that is, a composite outcome of myocardial infarction, heart failure, and stroke), these 3 CVD subtypes, all-cause mortality, and major adverse events (myopathies and liver dysfunction).

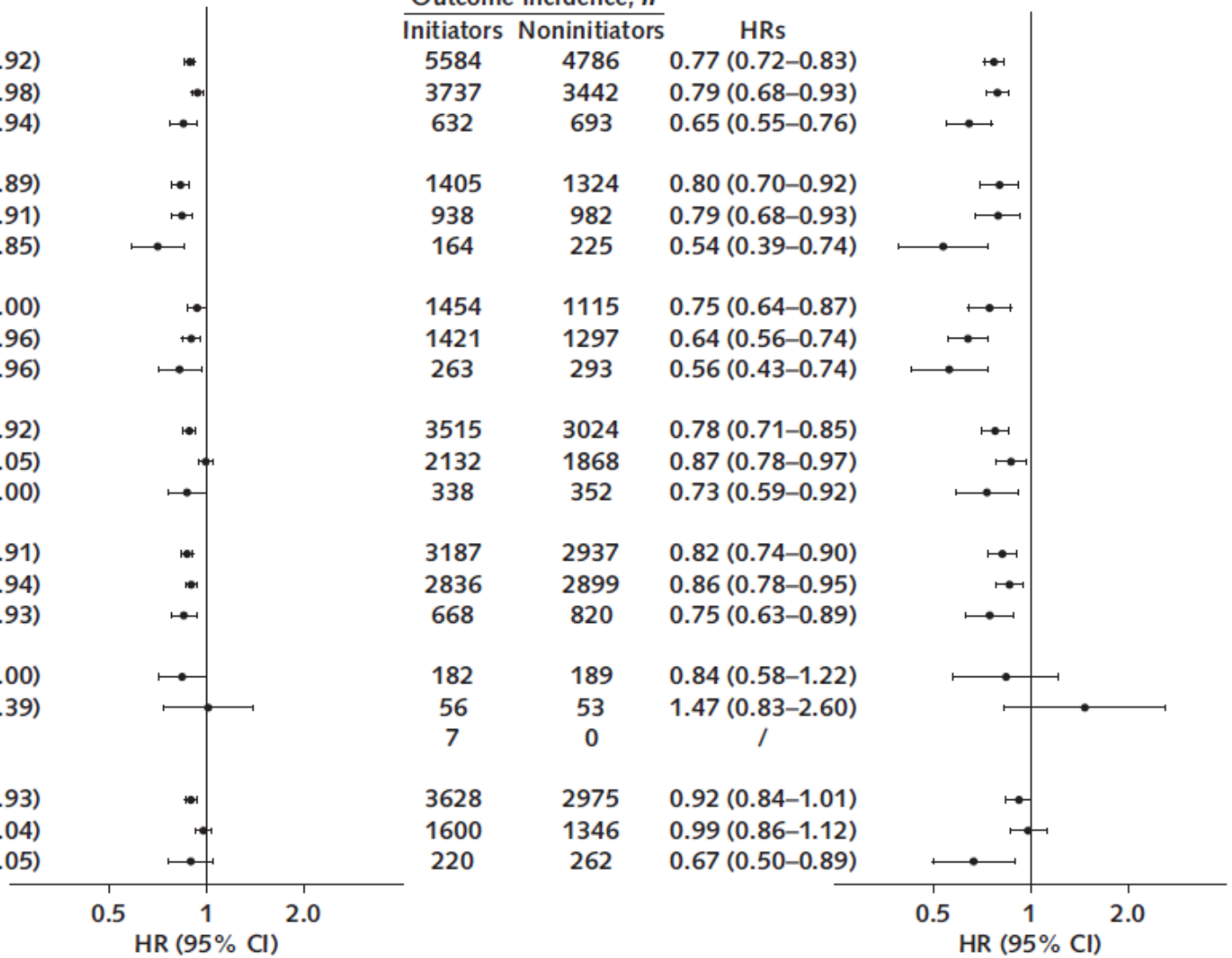
Study Design, Methods

- **The major indications for statin therapy** were persons with 0 to 1 CVD risk factors, (including hypertension, obesity, smoker, and impaired fasting glycaemia) with low-density lipoprotein cholesterol (LDL-C) level of 4.1 mmol/L (160 mg/dL) or greater, or persons with 2 or more CVD risk factors with LDL-C level of 3.4 mmol/L (130 mg/dL) or greater, or persons with coronary heart disease (CHD) risk equivalents (including diabetes mellitus, peripheral vascular disease, hypertensive heart disease, hypertensive chronic kidney disease, hypertensive retinopathy, and diabetic retinopathy) and LDL-C level of 2.6 mmol/L (100 mg/dL) or greater.

REMINDER: HR < 1 indicates decreased risk.

Figure 2. Estimated HR (95% CI) for outcomes of interest between statin initiators and noninitiators in 3 age groups (60 to 74 years, 75 to 84 years, and ≥85 years).

	ITT Analysis			PP Analysis		
	Outcome Incidence, *n*			Outcome Incidence, *n*		
Overall CVD	Initiators	Noninitiators	HRs	Initiators	Noninitiators	HRs
60–74 y	7143	8094	0.89 (0.86–0.92)	5584	4786	0.77 (0.72–0.83)
75–84 y	4736	4940	0.94 (0.90–0.98)	3737	3442	0.79 (0.68–0.93)
≥85 y	761	839	0.85 (0.77–0.94)	632	693	0.65 (0.55–0.76)
Myocardial infarction						
60–74 y	1859	2284	0.83 (0.78–0.89)	1405	1324	0.80 (0.70–0.92)
75–84 y	1198	1387	0.84 (0.78–0.91)	938	982	0.79 (0.68–0.93)
≥85 y	210	277	0.71 (0.59–0.85)	164	225	0.54 (0.39–0.74)
Heart failure						
60–74 y	1873	2088	0.93 (0.88–1.00)	1454	1115	0.75 (0.64–0.87)
75–84 y	1774	1930	0.90 (0.84–0.96)	1421	1297	0.64 (0.56–0.74)
≥85 y	320	365	0.83 (0.71–0.96)	263	293	0.56 (0.43–0.74)
Stroke						
60–74 y	4499	5070	0.89 (0.85–0.92)	3515	3024	0.78 (0.71–0.85)
75–84 y	2752	2730	1.00 (0.94–1.05)	2132	1868	0.87 (0.78–0.97)
≥85 y	403	432	0.87 (0.76–1.00)	338	352	0.73 (0.59–0.92)
All-cause mortality						
60–74 y	4684	5527	0.87 (0.84–0.91)	3187	2937	0.82 (0.74–0.90)
75–84 y	4131	4496	0.90 (0.86–0.94)	2836	2899	0.86 (0.78–0.95)
≥85 y	945	1024	0.85 (0.78–0.93)	668	820	0.75 (0.63–0.89)
Myopathies						
60–74 y	243	288	0.84 (0.71–1.00)	182	189	0.84 (0.58–1.22)
75–84 y	79	76	1.01 (0.74–1.39)	56	53	1.47 (0.83–2.60)
≥85 y	8	0	/*	7	0	/
Liver dysfunction						
60–74 y	4761	5309	0.90 (0.86–0.93)	3628	2975	0.92 (0.84–1.01)
75–84 y	2072	2084	0.98 (0.92–1.04)	1600	1346	0.99 (0.86–1.12)
≥85 y	294	308	0.90 (0.76–1.05)	220	262	0.67 (0.50–0.89)



Limitations:

- Factors of diet and physical activity, may exist.

Conclusion:

- Reduction for CVDs after statin therapy were seen in patients aged 75 years or older without increasing risks for severe adverse effects.
- Of note, the benefits and safety of statin therapy were consistently found in adults aged 85 years or older.

Clinical Review & Education

JAMA | US Preventive Services Task Force | RECOMMENDATION STATEMENT

Statin Use for the Primary Prevention of Cardiovascular Disease in Adults
US Preventive Services Task Force Recommendation Statement

US Preventive Services Task Force

IMPORTANCE Cardiovascular disease (CVD) is the leading cause of morbidity and death in the US and is the cause of more than 1 of every 4 deaths. Coronary heart disease is the single leading cause of death and accounts for 43% of deaths attributable to CVD in the US. In 2019, an estimated 558 000 deaths were caused by coronary heart disease and 109 000 deaths were caused by ischemic stroke.

OBJECTIVE To update its 2016 recommendation, the US Preventive Services Task Force (USPSTF) commissioned a review of the evidence on the benefits and harms of statins for reducing CVD-related morbidity or mortality or all-cause mortality.

POPULATION Adults 40 years or older without a history of known CVD and who do not have signs and symptoms of CVD.

Editorial page 716

Multimedia

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JAMA. 2022;328(8):746-753. doi:10.1001/jama.2022.13044

Grade	Definition	Suggestions for Practice
A	The USPSTF recommends the service. There is high certainty that the net benefit is substantial.	Offer or provide this service.
B	The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.	Offer or provide this service.
C	The USPSTF recommends selectively offering or providing this service to individual patients based on professional judgment and patient preferences. There is at least moderate certainty that the net benefit is small.	Offer or provide this service for selected patients depending on individual circumstances.
D	The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits.	Discourage the use of this service.
I Statement	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.	Read the clinical considerations section of USPSTF Recommendation Statement. If the service is offered, patients should understand the uncertainty about the balance of benefits and harms.

REFERENCE: https://www.uspreventiveservicestaskforce.org/uspstf/about-uspstf/methods-and-processes/grade-definitions

USPSTF 2022 UPDATE

Recommendation Summary

Population	Recommendation	Grade
Adults aged 40 to 75 years who have 1 or more cardiovascular risk factors and an estimated 10-year cardiovascular disease (CVD) risk of 10% or greater	The USPSTF recommends that clinicians prescribe a statin for the primary prevention of CVD for adults aged 40 to 75 years who have 1 or more CVD risk factors (i.e. dyslipidemia, diabetes, hypertension, or smoking) and an estimated 10-year risk of a cardiovascular event of 10% or greater.	B
Adults aged 40 to 75 years who have 1 or more cardiovascular risk factors and an estimated 10-year CVD risk of 7.5% to less than 10%	The USPSTF recommends that clinicians selectively offer a statin for the primary prevention of CVD for adults aged 40 to 75 years who have 1 or more CVD risk factors (i.e dyslipidemia, diabetes, hypertension, or smoking) and an estimated 10-year risk of a cardiovascular event of 7.5% to less than 10%. The likelihood of benefit is smaller in this group than in persons with a 10-year risk of 10% or greater.	C
Adults 76 years or older	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of initiating a statin for the primary prevention of CVD events and mortality in adults 76 years or older.	I

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CLINICAL INVESTIGATION

Journal of the
American Geriatrics Society

Fall risk and cardiovascular outcomes of first-line antihypertensive medications in nursing home residents

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Abstract

Background: Little evidence exists about the comparative effects of first-line antihypertensive medications (i.e., renin-angiotensin-aldosterone converting enzyme inhibitors (RAASi), amlodipine, or thiazide diuretics) in older adults with limited life expectancy. We compared the rates of injurious falls and short-term cardiovascular events between different first-line antihypertensive medication classes in adults receiving care in nursing homes (NH).

Methods: This was a retrospective cohort of Medicare fee-for-service beneficiaries receiving care in NHs. Patients newly dispensed first-line antihypertensive

Background

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- Authors compared the rates of injurious falls and short-term cardiovascular events between different first-line antihypertensive medication classes in adults receiving care in nursing homes (NH).

Methods

- This was a **retrospective cohort** of Medicare fee-for-service beneficiaries receiving care in NHs. Patients newly dispensed first-line antihypertensive medications were identified using Part D claims (2015–2018) and linked with clinical assessments (i.e., Minimum Data Set).

- **Fall-related injuries (FRI), hip fractures, and major adverse cardiac events (MACE) outcomes** were identified using hospitalization claims. Patients were followed from the date of antihypertensive dispensing until the occurrence of outcomes, death, disenrollment, or 6-month follow-up.

RAAS	Amlodipine	Thiazides*
azilsartan	Amlodipine	amiloride-hydrochlorothiazide
benazepril	aliskiren-amlodipine	atenolol-chlorthalidone
candesartan		bisoprolol-hydrochlorothiazide
captopril		chlorothiazide
enalapril		chlorthalidone
eprosartan		hydrochlorothiazide
fosinopril		hydrochlorothiazide-metoprolol
irbesartan		hydrochlorothiazide-metoprolol
lisinopril		hydrochlorothiazide-propranolol
lisinopril		hydrochlorothiazide-spironolactone
losartan		hydrochlorothiazide-triamterne
moexipril		indapamide
nebivolol-valsartan		methyclothiazide
olmesartan		
perindopril		
quinapril		
ramipril		
sacubitril-valsartan		
telmisartan		
trandolapril		
trandolapril-verapamil		
valsartan		

* metolazone was not included as a thiazide diuretic given this drug is typically prescribed for CHF rather than HTN

Results

- Cohort included 16,504 antihypertensive users
  (RAASi, n = 9574; amlodipine, n = 5049; thiazide, n = 1881).
- Mean age was 83.5 years (± 8.2),
- 70.6% were female, and
- 17.2% were non-white race.

- During a mean follow-up of 5.3 months,
  - 326 patients (2.0%) experienced an injurious fall,
  - 1590 (9.6%) experienced MACE,
  - and 2123 patients (12.9%) died.

Results

- The intention-to-treat IPTW hazard ratio (HR) for injurious falls for amlodipine (vs RAASi) use was 0.85 (95% confidence interval (CI) 0.66–1.08) and for thiazides (vs RAASi) was 1.22 (95% CI 0.88–1.66).

- The rates of MACE were similar between those taking antihypertensive medications.

- Thiazides were discontinued more often than other classes; however, inferences were largely unchanged in as-treated analyses.

Conclusions

Older adults with limited life expectancy experience similar rates of injurious falls and short-term cardiovascular events after initiating any of the first-line antihypertensive medications.

Key points

- In a large, observational study of patients who received care in a nursing home, there was no clear difference in the rate of injurious falls or short-term cardiovascular events between patients who were newly prescribed reninangiotensin aldosterone system inhibitors (RAASi), amlodipine, or thiazides over 6-month follow-up.

- Thiazides were discontinued more often than other classes.

Practice Implications

- When selecting a first-line antihypertensive medication for older adults with multimorbidity, there appears to be no clear differences in the rates of injurious falls or short-term cardiovascular events between renin-angiotensin aldosterone system inhibitors, amlodipine, and thiazides.

- Treatment decisions should instead be informed by co-indications, such as heart failure, or monitoring requirements, like phlebotomy.

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JAMA Internal Medicine | Original Investigation | LESS IS MORE

Deprescribing of Antihypertensive Medications and Cognitive Function in Nursing Home Residents

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Supplemental

IMPORTANCE Antihypertensive medication deprescribing is common among nursing home residents, yet its association with cognitive decline remains uncertain.

OBJECTIVE To investigate the association of deprescribing antihypertensive medication with changes in cognitive function in nursing home residents.

DESIGN, SETTING, AND PARTICIPANTS This cohort study using a target trial emulation approach included VA long-term care residents aged 65 years or older with stays of at least 12 weeks from 2006 to 2019. Residents who were not prescribed antihypertensive medication, with blood pressure greater than 160/90 mm Hg, or with heart failure were excluded.

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EXPOSURES Deprescribing was defined as a reduction in the total number of antihypertensive medications or a decrease in medication dosage by 30%, sustained for a minimum of 2 weeks.

MAIN OUTCOMES AND MEASURES Cognitive Function Scale (CFS) was classified as cognitively intact (CFS = 1), mildly impaired (CFS = 2), moderately impaired (CFS = 3), and severely impaired (CFS = 4).

RESULTS Of 45 183 long-term care residents, 12 644 residents (mean [SD] age 77.7 [8.3] years; 329 [2.6%] females and 12 315 [97.4%] males) and 12 053 residents (mean [SD] age 77.7 [8.3] years; 314 [2.6%] females and 11 739 [97.4%] males) met eligibility for ITT and per-protocol analyses, respectively. At the end of the follow-up, 12.0% of residents had a worsened CFS (higher score) and 7.7% had an improved CFS (lower score) with 10.8% of the deprescribing group and 12.1% of the stable user group showing a worsened CFS score. In the per-protocol analysis, the deprescribing group had a 12% reduction in the odds of progressing to a worse CFS category per 12-week period (odds ratio, 0.88; 95% CI, 0.78-0.99) compared to the stable user group. Among residents with dementia, deprescribing was associated with 16% reduced odds of cognitive decline (odds ratio, 0.84; 95% CI, 0.72-0.98). These patterns remained consistent in the ITT analysis.

Median (range) follow-up duration was 23 (9-65) weeks for the deprescribing group and 21 (5-77) weeks for the stable users.

CONCLUSIONS AND RELEVANCE This cohort study indicates that deprescribing is associated with less cognitive decline in nursing home residents, particularly those with dementia. More data are needed to understand the benefits and harms of antihypertensive deprescribing to inform patient-centered medication management in nursing homes.

Key Points

Question What is the association of deprescribing antihypertensive medication with cognitive function in older residents in nursing homes?

Findings This target trial emulation approach including 12 644 nursing home residents found that deprescribing antihypertensive medication was associated with less cognitive decline, particularly among those with dementia.

Meaning These findings suggest the importance of patient-centered approaches to deprescribing antihypertensive medication, ensuring that regimens for older adults are optimized to preserve cognitive function and minimize potential harm.

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Special Article

Exercise Guidelines to Counteract Physical Deconditioning in Long-Term Care Facilities: What to Do and How to Do It?

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Long-term care
mobility
physical activity
physical autonomy
sedentary
aging

A B S T R A C T

With age, older adults experience a decrease in muscle function and changes in body composition, which raise the risk of functional incapacity and loss of autonomy. These declines are more pronounced in older adults living in long-term care (LTC) facilities than those living in the community (ie, sarcopenia prevalence: ~41% vs ~10%; obesity prevalence: 30% vs17%). The main cause of these declines is chronic diseases, which are a driver of higher rates of sedentary behavior (85% of time in LTC). Exercise, however, is recognized to help counteract age-related decline, yet it is not integrated into clinical practice.

Since the most recent LTC physical activity consensus, articles evaluating the effects of physical activity in LTC have been published.

Thus, an update of the physical activity recommendations in LTC needed, which should focus on the personalization of physical activity programs based on needs, according to level of dependence.

Table 6
Recommendation on Physical Activity and Reduction of Sedentary Time in LTC

Type of Recommendation	Recommended Time	Type of Exercise and Intensity Recommended	
		For People Without Mobility Disorders	For People With Mobility Disorders*
Physical activity frequency	2 sessions/wk 35–45 min/session	NA	NA
Exercise session:			
➢ Warm-up	4 min	Mobility exercises (wrists, shoulders, hips, knees, and ankles) followed by low-intensity walking	Seated mobility exercises followed by low-intensity wheelchair propulsion
➢ Balance/coordination	8 min	Standing balance (increasing difficulty), weight transfer work, changes of direction	Seated tai-chi
➢ Resistance	15 min	Sit-to-stand exercises (increasing difficulty), knee extensions and flexions with ankle weights, upper body and core exercises with resistance bands ◦ 1–2 sets — 8 to 10 exercises ◦ 13–15 repetitions max (50% of 1 RM) = low intensity ◦ 8 repetitions max (80% of 1 RM) = high intensity	Half sit-to-stand, seated muscular reinforcement (lower and upper body or core exercises with resistance bands)
➢ Endurance	15 min	5 walking sequences of 3 min† interposed with 2 balance and/or strength exercises	Chair dance or wheelchair propulsion
➢ Cool-down	3 min	Low-intensity walking and stretching *10 to 30 s/exercise; to be performed at maximum capacity without reaching pain*	Low-intensity wheelchair propulsion, seated stretching
Reduce sedentary time	3 periods/d 2–5 min/time	ie, during a TV commercial break (walking, dancing, or repeated sit-to-stand with chair) Each move counts, ie, walking to the dining room and not using wheelchair (when it is not needed)	Walking using wheelchair, seated dancing or repeated half sit-to-stand on wheelchair

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CLINICAL INVESTIGATION

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Increasing illness severity of skilled nursing facility patients over time: Implications for readmission penalties

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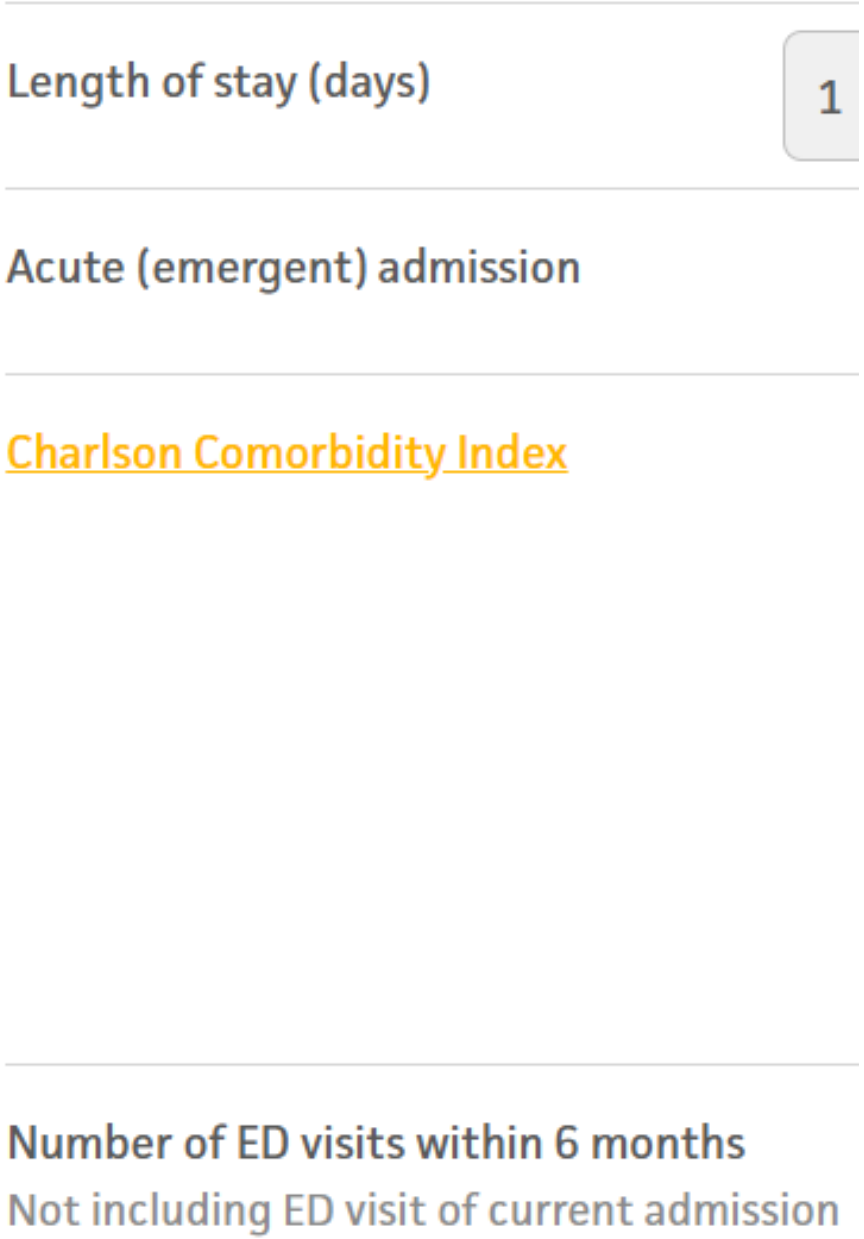
Abstract

Background: Current financial penalties for rehospitalization of skilled nursing facilities (SNFs) patients are based in part on the studies by Ouslander et al., 2011, and Mor et al., 2010, demonstrating that many SNF hospitalizations were avoidable. With increasing age, complex illness severity, and use of SNFs for subacute rehabilitation, readmission metrics and financial penalties based on previous data may be due for reevaluation.

LACE Index for Readmission

Predicts 30-day readmission or death in patients on medicine and surgery wards.



The optimal cut-point for the simplified HOSPITAL score is 4 points. The simplified HOSPITAL score and the original HOSPITAL score have similar performance.

The HOSPITAL score is used to predict 30-day readmissions. The score includes the following variables:

- Hemoglobin level at discharge
- Sodium level at discharge
- Whether the patient was discharged from an oncology service
- Whether any ICD-9 coded procedure was performed during the hospital stay
- Index admission type
- Number of hospital admissions during the previous year
- Length of stay

Methods: Retrospective electronic medical record (EMR) review of 21,591 admissions and discharges between 2010 and 2019 inclusive. Data extracted included demographics, LACE, Charlson comorbidity index (CCI), and simplified HOSPITAL score parameters. The scores were calculated for the study years from the extracted data. Patients readmitted to the hospital within 30 days were identified.

Conclusions and Implications: The study confirms anecdotal experience that the illness acuity of patients admitted to SNFs increased progressively over time and was associated with an increased risk of 30-day readmissions to the hospital. Our study suggests that the use of clinically validated readmission risk assessment tools instead of the Skilled Nursing Facility Value-Based Purchasing Program (SNF VBP) current risk adjustors may be a more accurate reflection of the current illness severity of a facility's patient population at the time of payment adjustment.

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JAMA Network Open

Original Investigation | Geriatrics

Geriatric End-of-Life Screening Tool Prediction of 6-Month Mortality in Older Patients

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Abstract

IMPORTANCE Emergency department (ED) visits by older adults with life-limiting illnesses are a critical opportunity to establish patient care end-of-life preferences, but little is known about the optimal screening criteria for resource-constrained EDs.

OBJECTIVES To externally validate the Geriatric End-of-Life Screening Tool (GEST) in an independent population and compare it with commonly used serious illness diagnostic criteria.

DESIGN, SETTING, AND PARTICIPANTS This prognostic study assessed a cohort of patients aged 65 years and older who were treated in a tertiary care ED in Boston, Massachusetts, from 2017 to 2021. Patients arriving in cardiac arrest or who died within 1 day of ED arrival were excluded. Data analysis was performed from August 1, 2023, to March 27, 2024.

Key Points

Question Can the Geriatric End-of-Life Screening Tool (GEST) accurately identify older adults in the emergency department with high 6-month mortality risk?

Findings In this prognostic study of 82 371 ED encounters within a tertiary care emergency department, GEST performed robustly on external validation, identifying 11.6% of the population as having a 30% or greater

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Prognostication Tools in Older Hospitalized Adults for Identification of Patients with Potential Palliative Care Needs: A Review of Three Instruments

Yuya Hagiwara[1]

Abstract

This paper explores the critical role of prognostication tools in identifying high-risk hospitalized older adults who may benefit from palliative care. With an ageing population and increasing prevalence of chronic illnesses, the demand for patient-centered healthcare is paramount. The study evaluates three key tools—the Palliative Performance Scale, CARING criteria, and Palliative Care Rapid Emergency Screening tool. Each tool is analyzed for its psychometric properties, advantages, and limitations. Despite their strengths and limitations, these tools emerge as crucial screening tools for identifying older adults at heightened mortality risk within one year of hospital admission. Our paper calls for ongoing research to adapt and validate existing tools, ensuring their applicability across diverse clinical settings and patient populations.

Importance of Reliable and Valid Tools

- Use of appropriate, reliable, and valid prognostic tools is important.
- Clinician predictions are often inaccurate
- With use of such tools, healthcare providers can evaluate more precisely a patient's probable disease progression, expected survival duration, and palliative care requirements → → → → enhances the precision of care planning and resource allocation.
- Reliable tools ensure that results are consistent and reproducible, thereby minimizing the risk of errors and disparities in the care provided.
- Valid tools, having undergone rigorous validation against established standards and expert consensus, instill confidence in the precision of prognostic information.
- These tools facilitate open and empathetic communication between healthcare professionals and patients, fostering shared decision-making and ultimately improving the delivery of patient-centered care.

Importance of Reliable and Valid Tools (cont'd)

- Reliability refers to whether an assessment instrument gives the same results each time it is used in the same setting with the same type of subjects. Reliability essentially means consistent or dependable results.

- Validity refers to the extent to which an instrument measures what it was intended to measure. Therefore, an instrument is considered "valid" if it measured what it set out to measure.

C.A.R.I.N.G. criteria

- see TABLE 3 IN *A practical tool to identify patients who may benefit from a palliative approach the CARING criteria JPSM 2006*

- Set of prognostic criteria that identifies persons near the end of life

Sensitivity 79%	(if high false negatives, then low sensitivity)
Specificity 75%	(if high false positives, then low specificity)

- Can be used for quick identification of the risk for one-year mortality following the index hospitalization

- Based on a hospitalized veteran population

C.A.R.I.N.G. criteria

- Cancer as a primary diagnosis, 10 points;
- Admissions (≥2) to the hospital in the past year for a chronic illness, 3 points; *(weaker predictor)*
- Residence in a nursing home, 3 points; *(weaker predictor)*
- ICU admission with MOF, 10 points;
- Noncancer hospice = meeting ≥ 2 of the National Hospice and Palliative Care Organization's (NHPCO), 12 points;
- Guidelines

AND

- Age divided into quartiles: <55 years, 0 points; 55—65 years, 1 point; 66--75 years, 2 points; and >75 years, 3 points;

C.A.R.I.N.G. criteria - Applications

- rapidly identify patients with a limited life expectancy who stand to benefit the most from a palliative approach

- important tool for identifying appropriate patient populations for research aimed at addressing barriers to pain, symptom management, goals discussions, and advance care planning

P-CaRES (Palliative Care Rapid Emergency Screening tool

- see FIGURE 6 IN *Screening Tool to Identify Emergency Department Patients With Significant Palliative Care Needs Academic Emer Med 2015*

P-CaRES (Palliative Care Rapid Emergency Screening tool

Objective: A screening tool for use by ED providers to identify ED patients with significant PC needs. A positive screen would result in an inpatient PC consultation.

An initial screening tool was developed based on a critical review of the literature. Content validity was determined by a two-round modified Delphi technique using a panel of PC experts.

P-CaRES (Palliative Care Rapid Emergency Screening tool

Reliability (88.7%)

The P-CaRES tool involves two straightforward steps. The first step identifies whether the patient has a life-limiting condition. The second step determines if the patient has two or more unmet palliative care needs.

While the P-CaRES tool was not originally designed for prognostication, it includes an element of prognostication in the second step, where clinicians are asked the “surprise question": “Would I be surprised if this patient died in the next 12 months?”

P-CaRES (Palliative Care Rapid Emergency Screening tool

Among older adults admitted to the hospital, those who met the criteria for inpatient palliative care consultation according to the P-CaRES tool faced a fourfold increase in the likelihood of passing away within six months, in comparison to individuals who did not meet these criteria.

The median survival period for those meeting the criteria was 122 days, with age being identified as an independent predictor of mortality within the six-month timeframe.

(Paske et al., 2021)

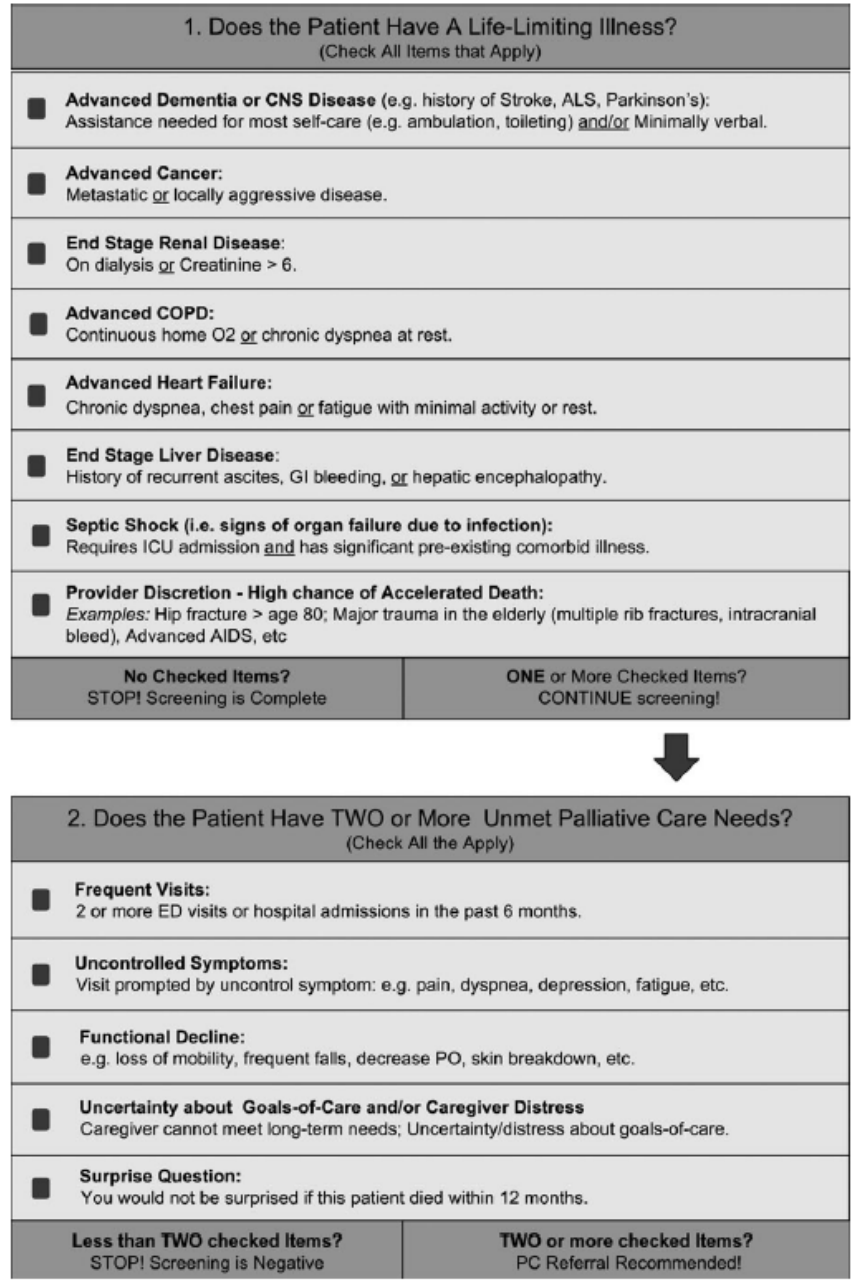

Figure 6. Palliative care screening tool.

Palliative Performance Scale (PPSv2)

version 2

PPS Level	Ambulation	Activity & Evidence of Disease	Self-Care	Intake	Conscious Level
100%	Full	Normal activity & work No evidence of disease	Full	Normal	Full
90%	Full	Normal activity & work Some evidence of disease	Full	Normal	Full
80%	Full	Normal activity *with* Effort Some evidence of disease	Full	Normal or reduced	Full
70%	Reduced	Unable Normal Job/Work Significant disease	Full	Normal or reduced	Full
60%	Reduced	Unable hobby/house work Significant disease	Occasional assistance necessary	Normal or reduced	Full or Confusion
50%	Mainly Sit/Lie	Unable to do any work Extensive disease	Considerable assistance required	Normal or reduced	Full or Confusion
40%	Mainly in Bed	Unable to do most activity Extensive disease	Mainly assistance	Normal or reduced	Full or Drowsy +/- Confusion
30%	Totally Bed Bound	Unable to do any activity Extensive disease	Total Care	Normal or reduced	Full or Drowsy +/- Confusion
20%	Totally Bed Bound	Unable to do any activity Extensive disease	Total Care	Minimal to sips	Full or Drowsy +/- Confusion
10%	Totally Bed Bound	Unable to do any activity Extensive disease	Total Care	Mouth care only	Drowsy or Coma +/- Confusion
0%	Death	-	-	-	-

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JAMA Network Open

Original Investigation | Emergency Medicine

A Hospice Transitions Program for Patients in the Emergency Department

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Abstract

IMPORTANCE Patients often visit the emergency department (ED) near the end of life. Their common disposition is inpatient hospital admission, which can result in a delayed transition to hospice care and, ultimately, an inpatient hospital death that may be misaligned with their goals of care.

OBJECTIVE To assess the association of hospice use with a novel multidisciplinary hospice program to rapidly identify and enroll eligible patients presenting to the ED near end of life.

Key Points

Question Is a multidisciplinary program aimed at the timely identification and transition of eligible patients presenting near the end of life to the emergency department associated with a significant increase in goal-concordant hospice care?

Key Points

Question Is a multidisciplinary program aimed at the timely identification and transition of eligible patients presenting near the end of life to the emergency department associated with a significant increase in goal-concordant hospice care?

Findings In this quality improvement study, 61 of 270 patients (22.6%) achieved the primary outcome of goal-concordant transition to hospice within 96 hours in the control period compared with 210 of 388 (54.1%) in the intervention period. In addition, the presence of a Medical Order for Life-Sustaining Treatment was independently associated with hospice transition across all groups (adjusted odds ratio, 1.88; 95% CI, 1.18-2.99).

Meaning Hospitals can investigate the implementation of a similar hospice transition program to improve use of hospice at their institutions.

Figure 2. Emergency Department (ED) Care Transitions Program Key Elements

Screening	ED care facilitator	Frontline clinician education	New hospice realationships	Modified workflows and tip sheet creation	Reporting and data tracking
• Electronic health record natural language processing • Email alerts to operational team and ED care facilitators	• ED care facilitator identifying patients • Referrals to hospice provider • Alerting ED and inpatient clinicians	• Nurses, physician assistants, trainees, attending physicians in oncology, neurology, neurosurgery	• New hospice vendor • Performance metrics for exisiting vendors • Increased hospice capacity	• Existing frontline clinician workflows modified • Creation of new tip sheets for frontline clinicians	• Reports capturing enrolled and missed patients • Weekly multidisciplinary case reviews

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The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Decolonization in Nursing Homes to Prevent Infection and Hospitalization

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DOI: 10.1056/NEJMoa2215254

ABSTRACT

BACKGROUND

Nursing home residents are at high risk for infection, hospitalization, and colonization with multidrug-resistant organisms.

METHODS

We performed a cluster-randomized trial of universal decolonization as compared with routine-care bathing in nursing homes. The trial included an 18-month baseline period and an 18-month intervention period. Decolonization entailed the use of chlorhexidine for all routine bathing and showering and administration of nasal povidone–iodine twice daily for the first 5 days after admission and then twice daily for 5 days every other week. The primary outcome was transfer to a hospital

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28 nursing homes with a total of 28,956 residents

CONCLUSIONS

In nursing homes, universal decolonization with chlorhexidine and nasal iodophor led to a significantly lower risk of transfer to a hospital due to infection than routine care. (Funded by the Agency for Healthcare Research and Quality; Protect ClinicalTrials.gov number, NCT03118232.)

OTHER ISSUES:

- Does this impact incidence of infections caused by MDROs?
- What about negative effects of chlorhexidine use, such as increased risk of infection with MRSA harboring qacA and qacB genes and with chlorhexidine-resistant Klebsiella pneumoniae?
- Expense, training, commitment…
- Data are lacking with regard to the risk or benefit of prolonged bathing with chlorhexidine products, and although there were few adverse events in this cohort (most of which were skin irritation), ongoing assessment of the effect of chlorhexidine on residents' skin and the emergence of resistance that could render chlorhexidine ineffective with continued use needs to be evaluated ….

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Annals of Internal Medicine

OBSERVATION: BRIEF RESEARCH REPORT

Aspirin Use Prevalence for Cardiovascular Disease Prevention Among U.S. Adults From 2012 to 2021

Background: Aspirin has been recommended for the prevention of cardiovascular disease (CVD) for decades. However, randomized trial data from 2018 indicated limited benefit for primary prevention alongside contemporary cholesterol and hypertension therapies, particularly in older adults (1, 2). Therefore, the 2019 guidelines from the American College of Cardiology and American Heart Association discourage primary prevention aspirin use in adults older than 70 years (3). The effect of this recent evidence and these recommendations on aspirin use prevalence in the United States remains unexplored.

Objective: To characterize trends in prevalence of aspirin use for CVD prevention among U.S. adults.

Methods and Findings: We used data from the National Health Interview Survey Sample Adult component (2012–2019 and 2021)—an in-person, cross-sectional health survey of a representative sample of the U.S. civilian noninstitutionalized population (4). We included participants aged 40 years or older and stratified the sample by age group and CVD status on the basis of self-reported history of stroke, myocardial infarction, coronary artery disease, or angina. The primary outcome was the prevalence of

JAMA | US Preventive Services Task Force | RECOMMENDATION STATEMENT

Aspirin Use to Prevent Cardiovascular Disease

US Preventive Services Task Force Recommendation Statement

US Preventive Services Task Force

IMPORTANCE Cardiovascular disease (CVD) is the leading cause of mortality in the US, accounting for more than 1 in 4 deaths. Each year, an estimated 605 000 people in the US have a first myocardial infarction and an estimated 610 000 experience a first stroke.

OBJECTIVE To update its 2016 recommendation, the US Preventive Services Task Force (USPSTF) commissioned a systematic review on the effectiveness of aspirin to reduce the risk of CVD events (myocardial infarction and stroke), cardiovascular mortality, and all-cause mortality in persons without a history of CVD. The systematic review also investigated the effect of aspirin use on colorectal cancer (CRC) incidence and mortality in primary CVD prevention populations, as well as the harms (particularly bleeding) associated with aspirin use. The USPSTF also commissioned a microsimulation modeling study to assess the net balance of benefits and harms from aspirin use for primary prevention of CVD and CRC, stratified by age, sex, and CVD risk level.

Editorial page 1552

Multimedia

Related articles pages 1585 and 1598 and JAMA Patient Page page 1624

Supplemental content

Related articles at jamainternalmedicine.com jamanetworkopen.com jamacardiology.com

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JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY

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CLINICAL PRACTICE GUIDELINE

2019 ACC/AHA Guideline on the Primary Prevention of Cardiovascular Disease

VOL. 74, NO. 10, 2019

A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines

Endorsed by the American Association of Cardiovascular and Pulmonary Rehabilitation, the American Geriatrics Society, the American Society of Preventive Cardiology, and the Preventive Cardiovascular Nurses Association

Top 10 Take-Home Messages for the Primary Prevention of Cardiovascular Disease

8. Aspirin should be used infrequently in the routine primary prevention of ASCVD because of lack of net benefit.

THANK YOU for LISTENING!

PLEASE DO NOT FORGET TO COMPLETE THE EVALUATION FOR THIS SESSION.

Whether

The presentation objectives were met

Content was presented in an effective manner

Content pertained to my practice

Content provided practical approaches to implementation

Presentation style facilitated my learning

Content presented was balanced and unbiased

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JAMA | Original Investigation

Blood Biomarkers to Detect Alzheimer Disease in Primary Care and Secondary Care

Sebastian Palmqvist, MD, PhD; Pontus Tideman, MSc; Niklas Mattsson-Carlgren, MD, PhD; Suzanne E. Schindler, MD, PhD; Ruben Smith, MD, PhD; Rik Ossenkoppele, PhD; Susanna Calling, MD, PhD; Tim West, PhD; Mark Monane, MD, MBA; Philip B. Verghese, PhD; Joel B. Braunstein, MD, MBA; Kaj Blennow, MD, PhD; Shorena Janelidze, PhD; Erik Stomrud, MD, PhD; Gemma Salvadó, PhD; Oskar Hansson, MD, PhD

IMPORTANCE An accurate blood test for Alzheimer disease (AD) could streamline the diagnostic workup and treatment of AD.

OBJECTIVE To prospectively evaluate a clinically available AD blood test in primary care and secondary care using predefined biomarker cutoff values.

DESIGN, SETTING, AND PARTICIPANTS There were 1213 patients undergoing clinical evaluation due to cognitive symptoms who were examined between February 2020 and January 2024 in Sweden. The biomarker cutoff values had been established in an independent cohort and were applied to a primary care cohort (n = 307) and a secondary care cohort (n = 300); 1 plasma sample per patient was analyzed as part of a single batch for each cohort. The blood test was then evaluated prospectively in the primary care cohort (n = 208) and in the secondary care cohort (n = 398); 1 plasma sample per patient was sent for analysis within 2 weeks of collection.

Editorial page 1240

Multimedia

Related article page 1258

Supplemental content

Related article at jamaneurology.com

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Alzheimer's & Dementia®
THE JOURNAL OF THE ALZHEIMER'S ASSOCIATION

RESEARCH ARTICLE

Revised criteria for diagnosis and staging of Alzheimer's disease: Alzheimer's Association Workgroup

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Alzheimer's Dement. 2024;20:5143–5169.

AGS Geriatrics Healthcare Professionals
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American Geriatrics Society Response – Revised Criteria for Diagnosis and Staging of Alzheimer's Disease: Alzheimer's Association Workgroup
Submitted November 16, 2023

The American Geriatrics Society (AGS) submitted these comments on the 3rd draft of the Alzheimer's Association document, Revised Criteria for Diagnosis and Staging of Alzheimer's Disease: Alzheimer's Association Workgroup, an update of the 2018 NIA-AA Revised Clinical Guidelines for Alzheimer's.

AGS Response

The AGS appreciates that the Alzheimer's Association (AA) Workgroup continues to engage with and incorporate recommendations from the scientific and clinical communities, including our prior comments, as it works on the Revised Criteria for Diagnosis and Staging of Alzheimer's Disease: Alzheimer's Association Workgroup. Given that practitioners, patients, and society have not been sufficiently prepared for a shift in Alzheimer's disease (AD) diagnosis, and there is no current evidence to support use of the revised criteria in routine clinical care, AGS remains concerned that this proposed expansion will place many older and multimorbid people at risk of overdiagnosis, which in turn could lead to initiation of treatments with as yet unproven clinical benefit, particularly in an asymptomatic population, and high potential for harm.

DOI: 10.1111/jgs.18793

Journal of the
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COMMENTARY

Who gets to decide on what it means to have Alzheimer's disease?

Eric Widera MD[1,2]

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BRIEF REPORT

Journal of the
American Geriatrics Society

Factors influencing clinician decision-making about POLST use with nursing facility residents: A qualitative study

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Abstract

Background: National POLST guidance indicates POLST is intended for individuals at risk of life-threatening clinical events due to serious illness. Even though this patient population includes many, but not all, nursing facility residents, there is evidence that POLST is used broadly in this setting. This study aimed to identify clinician perspectives regarding factors that influence their decision-making about whether to use POLST with nursing facility residents and to distinguish between inappropriate and appropriate use.

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GERIATRICS EDUCATIONAL AND INNOVATION CORNER (GerL)

Journal of the American Geriatrics Society

Developing a clinical curriculum for hospitalists newly practicing in post-acute and long-term care settings: A pre-post study

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BACKGROUND

Post-acute and long-term care (PALTC) settings are an integral part of the healthcare continuum, yet little education for this setting exists outside of training programs focused on geriatrics. We developed a curriculum to help clinicians experienced in the care of hospitalized patients care for PALTC residents. The participating clinicians helped inform course content and evaluated the course. In this article, we report the topics the clinicians identified in our needs assessment, results from our pre-post knowledge assessment, and course evaluations.

METHODS

The findings and conclusions in this document are those of the authors,

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JAMDA

journal homepage: www.jamda.com

Original Study

The Impact of a Point-of-Care Ultrasound (POCUS) Program to Diagnose and Manage Ascites in Home-based Palliative Care

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Keywords:
Home-based palliative care
point-of-care ultrasound
ascites

A B S T R A C T

Objective: The objective of this study was to examine the impact of a point-of-care ultrasound (POCUS) program among people with ascites receiving home-based palliative care by measuring the association of POCUS with ascites-related days spent out of the home, compared with outcomes before POCUS implementation.
Design: Open cohort study.
Setting and Participants: Adults who had an ascites-related procedure (ARP) between January 1, 2014, and December 31, 2015 (ie, pre-POCUS) and January 1, 2019, and December 31, 2020 (ie, POCUS). An ARP was defined as using ultrasound to diagnose suspected ascites or a paracentesis with or without ultrasound guidance to manage ascites.

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Pragmatic Innovations in Post-Acute and Long-Term Care Medicine
Feasible new, practical products or approaches intended to improve outcomes or processes in post-acute or long-term care

Age-Friendly Framework in Post-Acute and Long-Term Care: Implementing the 4Ms in Long-Term Care

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A B S T R A C T

Age-Friendly Health Systems is an initiative of The John A. Hartford Foundation and the Institute for Healthcare Improvement, in partnership with the American Hospital Association and the Catholic Health Association of the United States that uses a framework to ensure high-quality, person-centered care for older adults. The framework, called the 4 Ms, includes what matters, mobility, medications, and mentation. This work outlines a practical, evidence- based approach to implementing 4 Ms care in long-term care (LTC).

Keywords: Age-friendly health systems, 4Ms care, long-term care, quality improvement

Problem

Age-Friendly initiatives initially focused on hospitals, then outpatient settings, and now an increasing number of LTC facilities are participating. Most (>83%) US LTC residents are 65 years or older,

Improvements were made to the biographies, including the addition of "I statements" such as, "I enjoy listening to music, mostly classical. I also enjoy looking through old pictures. There are family photo albums near my table by the window, please help me get started." These "I statements" were developed with resident, family, and staff support

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