Top 9 Geriatric Medicine Papers 2022

Sinai Health and UHN 2022 Toronto Geriatrics
Virtual Update
November 4, 2022

Sinai Health | Healthy Ageing and Geriatrics

UHN: Toronto General, Toronto Western, Princess Margaret, Toronto Rehab, Michener Institute

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Speakers

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Geriatrics
Unity Health, Toronto

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Associate Professor
Geriatrics
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Disclosures

- No conflicts of interest to disclose from all 3 speakers.

Objectives

1. Review a curated selection of new literature relevant to the field of geriatrics.

1. Appreciate and apply evidence-based medicine to your clinical practice in the care of older adults.

Selection Process:

- Thank you to: Drs. Dov Gandell, Sharon Straus, Jennifer Watt, Barry Goldlist, and Eric Wong
- Reviewed 2021-Sept 2022 Evidence Alerts, ACP Journal Club, and Journal Watch (NEJM)
- UofT Geriatrics Residents Journal Club articles
- Focus:
  - Range of geriatric syndromes
  - Relevance for immediate clinical impact

Paper 1

THE LANCET

Volume 398, Issue 10314, 20–26 November 2021, Pages 1894-1904

Articles

Evaluation of geriatric assessment and management on the toxic effects of cancer treatment (GAP70+): a cluster-randomised study

Prof Supriya G Mohile MD [a, b], Mostafa R Mohamed MBBCh [a], Huiwen Xu PhD [b], Eva Culakova PhD [b], Kah Poh Loh MBBCh BAO [a], Allison Magnuson DO [a], Marie A Flannery PhD [b], Spencer Obrecht RN [a], Nikesha Gilmore PhD [b], Erika Ramsdale MD [a], Richard F Dunne MD [a], Tanya Wildes MD [a], Sandy Plumb BS [a], Amita Patil MPH [a], Megan Wells MPH [a], Lisa Lowenstein PhD [c], Michelle Janelsins PhD [b], Prof Karen Mustian PhD [b] … Prof William Dale MD [f]

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Background

- Cancer is a geriatric disease
  - 9/10 cancers diagnosed in ppl > 50
  - 78% cancer deaths occur in ppl >= 65
- What we know:
  - We have tools to predict who is high risk of treatment toxicity (frailty measure, CARG tool and more)
  - ASCO recommends that all OA with cancer get GA to guide treatment
- What we didn't know:
  - *What is the real-world effect* of embedding geriatric assessment into cancer care

Objective

Can a geriatric assessment intervention can reduce serious toxic effects in older patients with advanced cancer who are receiving high risk treatment (eg, chemotherapy)?

Methods

P: Patients age 70+ with incurable cancer, at least one impaired geriatric domain, starting a new cancer treatment regimen

- Community oncology practices randomized to:
  - **Intervention**: Geriatric assessment summary and management recommendations given to oncologist
  - **Control**: Usual care

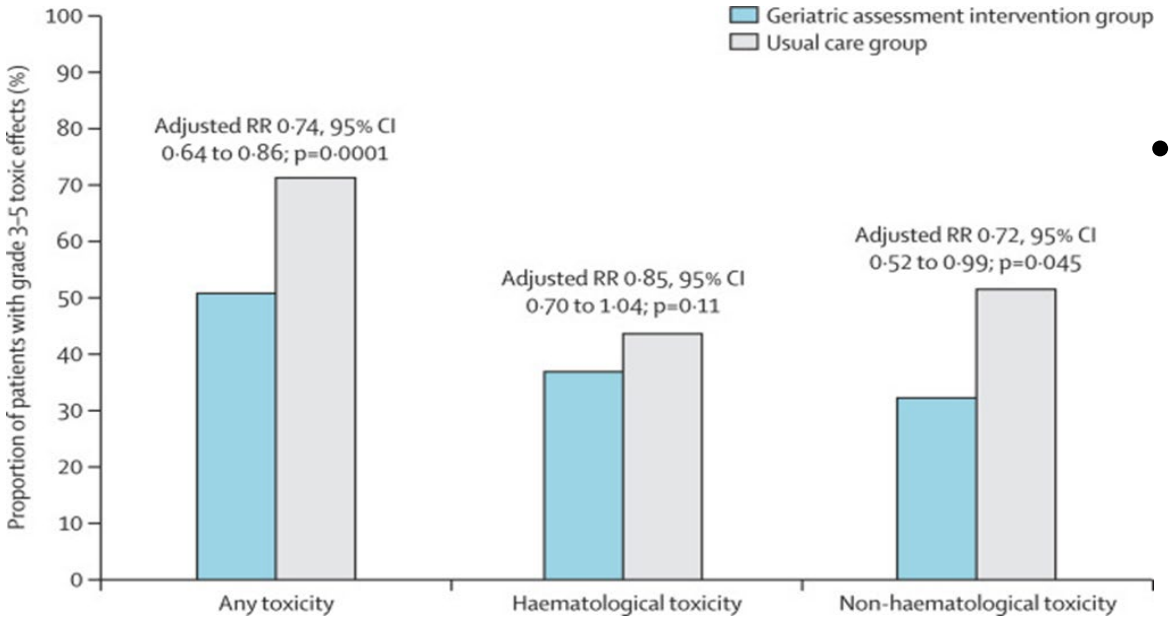
O: Proportion of patients who had severe toxic effects of treatment over 3 months

Results

- N=718 patients from within 40 community oncology practice clusters across the USA
- Average patient:
  - 77.2 yrs
  - 43% Female
  - 87% White
  - 52% low income
  - On average, 4.5 geriatric domains impaired

Results

Prevalence of Grade 3-5 Toxicity



- Prevalence of Toxicity
  - Interv 51% vs. Cont 71%
    RR 0.74 (0.64-0.86)
- Secondary Outcomes:
  - Interv more often received <u>less intense Rx</u> up front
  - Interv has <u>fewer falls</u>, more de-prescribing
  - <u>No difference in survival</u> at 6 mo and 1 year

Discussion

Strengths:

- Clear, reproducible intervention
- GA improves outcomes important to patients

Caution:

- This studied a population receiving “palliative” chemotherapy, not curative intent chemotherapy

Bottom Line

Standardized GA can reduce treatment toxicity in OA with advanced cancer.

Paper 2

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 JULY 28, 2022 VOL. 387 NO. 4

Supplemental Vitamin D and Incident Fractures in Midlife and Older Adults

Meryl S. LeBoff, M.D., Sharon H. Chou, M.D., Kristin A. Ratliff, B.A., Nancy R. Cook, Sc.D., Bharti Khurana, M.D., Eunjung Kim, M.S., Peggy M. Cawthon, Ph.D., M.P.H., Douglas C. Bauer, M.D., Dennis Black, Ph.D., J. Chris Gallagher, M.D., I-Min Lee, M.B., B.S., Sc.D., Julie E. Buring, Sc.D., and JoAnn E. Manson, M.D., Dr.P.H.

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Background

- Osteoporotic fractures are common, costly and result in significant morbidity.
- Vitamin D deficiency is associated with increased risk of fracture
- Prior studies of Vit D supplementation have shown mixed results.
  - Trials have varied in population, baseline Vit D levels, co-supplementation with calcium, etc
  - Cochrane 2014: “Vitamin D alone is unlikely to be effective in preventing hip or any fractures”
- …and yet, we still prescribe Vitamin D like candy ☺

Objective

Does vitamin D alone reduce fractures in older adults?

Methods

P: US adults, M >50, W>55 without history of CVD, Cancer, HyperCal

I: Vitamin D3 2000IU per day

C: Placebo

O: First incident osteoporotic fracture

One part of VITAL Study

1. Vit D + Omega-3
2. Vit D + Placebo
3. Placebo + Omega-3
4. Placebo + Placebo

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Results

N=25,871

Median follow-up 5.3 yrs

Average patient

- 67 yrs
- 71% White; 20% Black
- 10% with history of fragility fracture; 4.8% on osteoporosis medication
- Baseline Vit D level= 77 nmol/L

Adherence to study drug: 87.3% at 2 years and 85.4% at 5 years

Results

Primary outcome: First incident total fracture

- Vit D 769/12927 (**5.9%**) vs. Placebo 782/12944 (**6%**)

HR 0.98 (0.89 - 1.08) P=0.70

Secondary outcomes:

- No effect modification according to baseline demographic, medical, or biochemical variables
- No difference in those with low Vit D levels at baseline

Discussion

Strengths:

- Large study, high adherence

Caution:

- Was not designed to assess the effect on people with Vitamin D deficiency (though that trial would be difficult to do)
- Applies to community-dwelling OA

Bottom Line

This study adds to the evidence that Vitamin D supplementation does not reduce incidence of fractures (sadly ☹)

Paper 3

thebmj covid-19 Research Education News & Views Campaigns Jobs

Research

Effect of dietary sources of calcium and protein on hip fractures and falls in older adults in residential care: cluster randomised controlled trial

BMJ 2021 ; 375 doi: https://doi.org/10.1136/bmj.n2364 (Published 21 October 2021)
Cite this as: *BMJ* 2021;375:n2364

Article | Related content | Metrics | Responses | Peer review

S Iuliano, nutritionist [1], S Poon, dietician [1], J Robbins, dietician [1], M Bui, statistician [2], X Wang, statistician [1], L De Groot, nutritionist [3], M Van Loan, physiologist [4], A Ghasem Zadeh, medical physicist [1], T Nguyen, epidemiologist [5 6], E Seeman, endocrinologist [1]

Author affiliations

Correspondence to: S Iuliano sandraib@unimelb.edu.au

Accepted 23 September 2021

Background

- Daily Calcium requirements: 1200mg
  - Calcium intake in OA typically < 700mg/day

- Daily protein requirements: 1-1.2g/kg body weight for OA
  - Protein intake typically < 1g/kg

- Inadequate calcium and protein intake increase the risk of osteoporotic fractures.

Objective

Can nutritional supplementation with dairy foods to reach daily calcium and protein intake recommendations decrease the risk of fragility fractures?

Methods

P: OA in assisted living facilities in Australia, randomized by facility

I: Dietician assigned to assist food service staff to increase dairy food provision at all meals and snacks

C: Usual care

O: Time to fracture

Results

- 60 Facilities randomized, 56 analyzed N=7,195
- Average patient:
  - 86yr - on 11-12 meds
  - 70% female - ~40% with prior fractures
  - Vit D level 72 nmol/L - ~50% with dementia

&

- Dairy food intake:
  - 3.5 servings dairy/day vs. <2 servings/d
  - Calcium intake 1142mg Ca vs. 700mg Ca
- Protein intake:
  - 69g/d (1.1g/kg body weight) vs. 58g (0.9g/kg body weight)

Results

All fractures

- **Dairy Supl 3.7% vs. Control 5.2%**

  HR 0.67 (0.48-0.93), p=0.02

  NNT 67 for 12 mo.

Discussion

Strengths:

- Demonstrates an effective, community oriented, preventative approach for fracture prevention
- The Geoffrey Rose prevention paradox—a community based approach producing a small benefit to an individual may still confer a large benefit to the community.

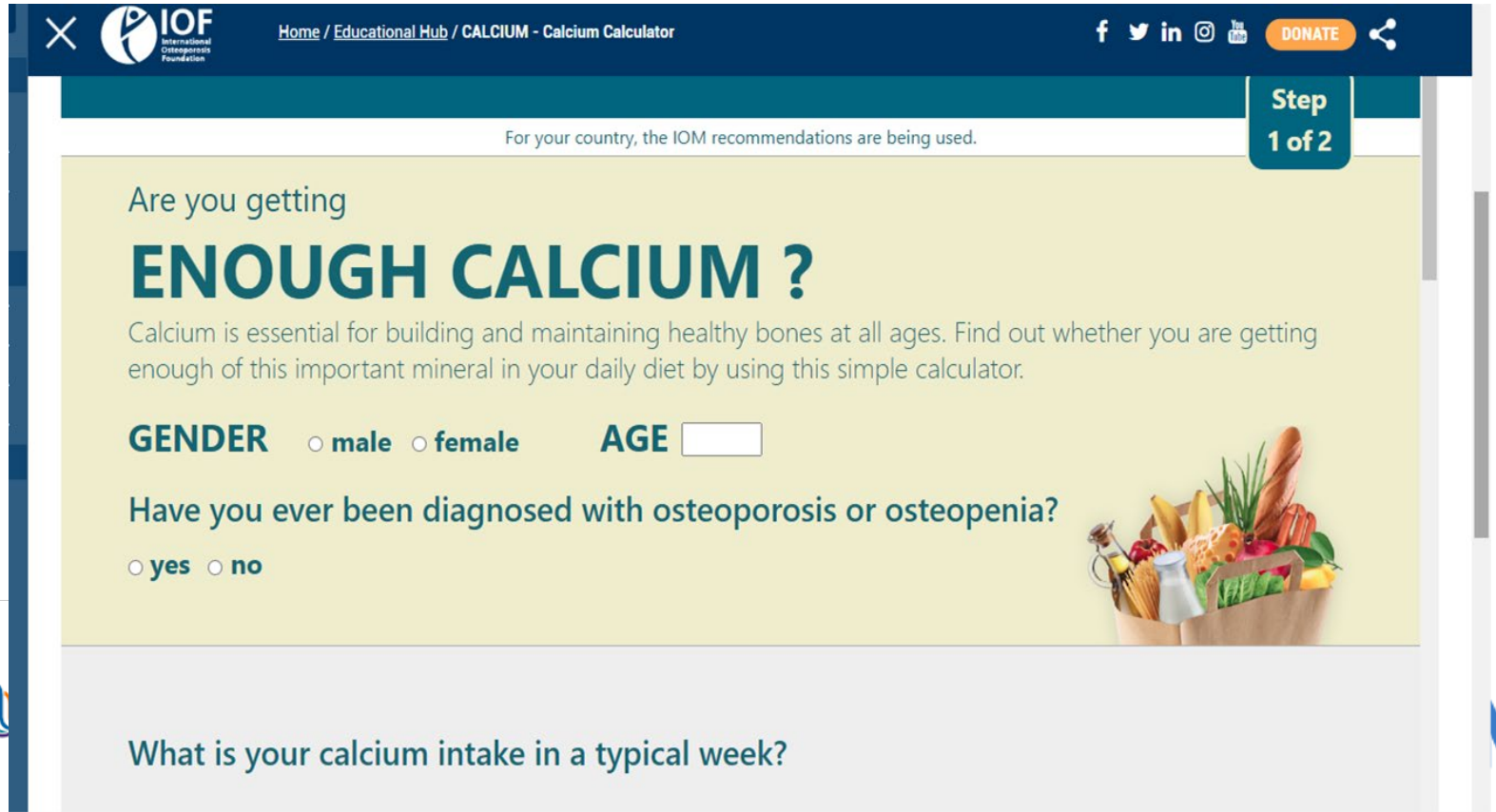
Cautions:

- Aim was 24 mo. follow up, but due to facility drop out, mean follow up only 12mo.

Bottom Line

Dietary calcium and protein supplementation through real dairy food is effective at fracture prevention

Check out weekly calcium calculator at IOF:



Paper 4

GUIDELINE

World guidelines for falls prevention and management for older adults: a global initiative

Manuel Montero-Odasso[1,2,3,†], Nathalie van der Velde[4,5,†], Finbarr C. Martin[6], Mirko Petrovic[7], Maw Pin Tan[8,9], Jesper Ryg[10,11], Sara Aguilar-Navarro[12], Neil B. Alexander[13], Clemens Becker[14], Hubert Blain[15], Robbie Bourke[16], Ian D. Cameron[17], Richard Camicioli[18], Lindy Clemson[19], Jacqueline Close[20,21], Kim Delbaere[22], Leilei Duan[23], Gustavo Duque[24], Suzanne M. Dyer[25], Ellen Freiberger[26], David A. Ganz[27], Fernando Gómez[28], Jeffrey M. Hausdorff[29,30,31], David B. Hogan[32], Susan M.W. Hunter[33], Jose R. Jauregui[34], Nellie Kamkar[1], Rose-Anne Kenny[16], Sarah E. Lamb[35], Nancy K. Latham[36], Lewis A. Lipsitz[37], Teresa Liu-Ambrose[38], Pip Logan[39], Stephen R. Lord[40,41], Louise Mallet[42], David Marsh[43], Koen Milisen[44,45], Rogelio Moctezuma-Gallegos[46,47], Meg E. Morris[48], Alice Nieuwboer[49], Monica R. Perracini[50], Frederico Pieruccini-Faria[1,2], Alison Pighills[51], Catherine Said[52,53,54], Ervin Sejdic[55], Catherine Sherrington[56], Dawn A . Skelton[57], Sabestina Dsouza[58], Mark Speechley[3,59], Susan Stark[60], Chris Todd[61,62], Bruce R. Troen[63], Tischa van der Cammen[64,65], Joe Verghese[66,67], Ellen Vlaeyen[68,69], Jennifer A. Watt[70,71], Tahir Masud[72], the Task Force on Global Guidelines for Falls in Older Adults[‡]

'It takes a child one year to acquire independent movement and ten years to acquire independent mobility. An old person can lose both in a day' Professor Bernard Isaacs (1924–1995)

Montero-Odasso M, et. al., Age Ageing. 2022 Sep 2;51(9):afac205.

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Background

- 30% of older adults fall annually
- Personal distress
- Traumatic Injuries, > LOS, loss of function, > mortality, and institutionalization
- Worldwide > 8.9 million osteoporosis fractures annually

Bernard I. The Challenge of Geriatric Medicine. Oxford: Oxford University Press, 1992
Montero-Odasso M, et. al., Age Ageing. 2022 Sep 2;51(9):afac205.
PHAC, Senior's Fall in Canada: Second report, 2014
James SL, et. al. *Inj Prev* 2020; 26: i3–11.

Objective

Develop evidence and expert consensus-based falls prevention and management recommendations applicable to older adults that are: person-centred, fill the gap in previous guidelines, applicable to recent e-health developments, and applicable to locations with limited access to resources.

Montero-Odasso M, et. al., Age Ageing. 2022 Sep 2;51(9):afac205.

Methods

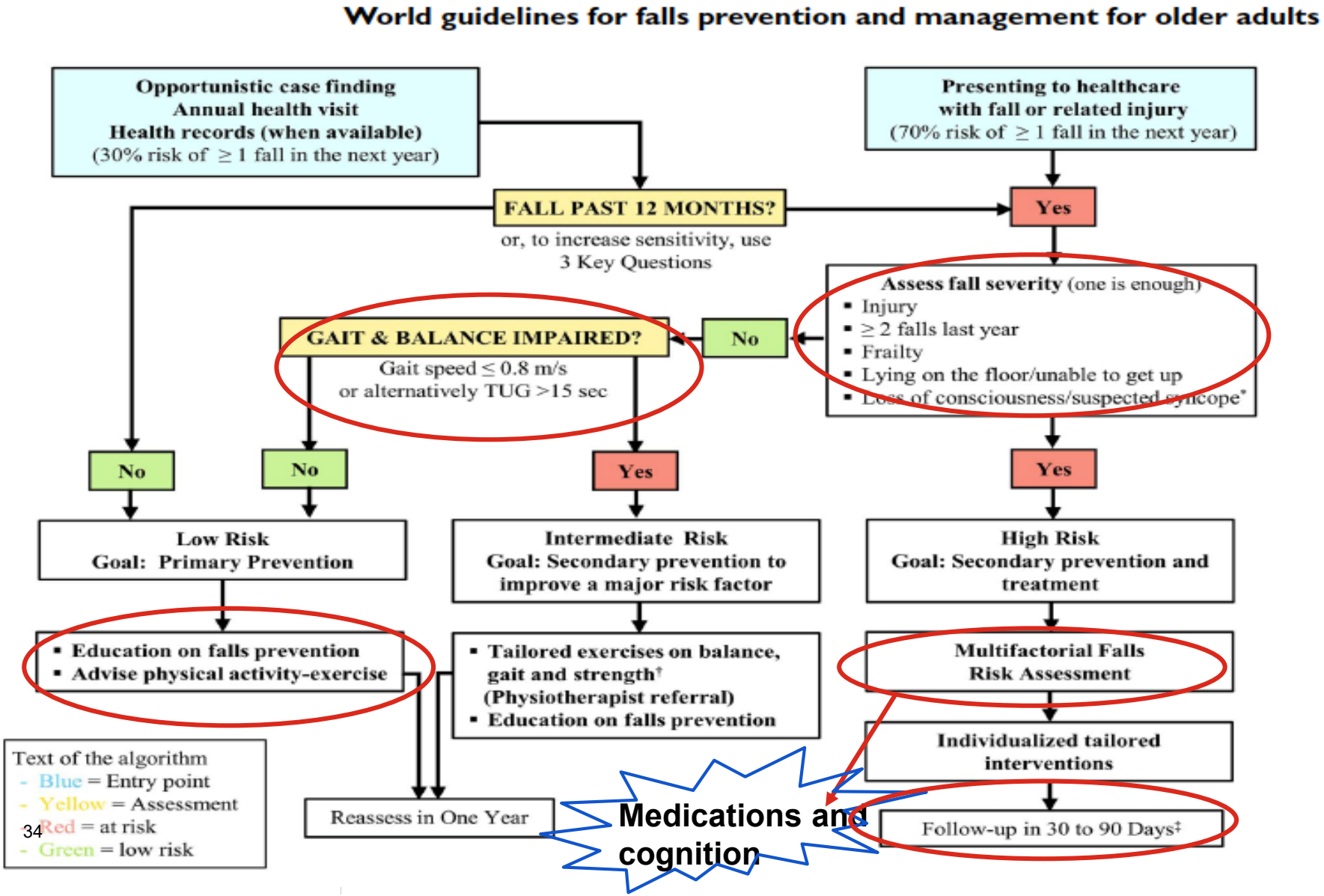
Process for Guideline Development:

- Conducted a systematic review of existing falls prevention and management guidelines
- Steering Committee and World wide Multi-Disciplinary group of experts (96), stakeholders, including older adults
- Working groups [WG] >11 and ad hoc WGs
- GRADE system
- Modified Delphi process to identify recommendations and voting for final recommendations

Montero-Odasso M, et. al., Age Ageing. 2022 Sep 2:51(9):afac205.

Montero-Odasso M, et. al., Age Ageing. 2022 Sep 2;51(9):afac205.

Recommendations



Results

High Risk Groups:

- Optimize nutrition and provide Vit D supplementation for those with Vit D deficiency (levels <75 umol/L)
- Current evidence does not support the use of wearables to prevent falls,
  - May increase participation in exercises and may reduce the falls
- Limited evidence: Use of bed/chair alarms, non slip socks, and use of restraints for the sole purpose of preventing falls

Montero-Odasso M, et. al., Age Ageing. 2022 Sep 2;51(9):afac205.

Bottom Line

The World Guidelines on Falls can inform older adults, clinicians, care providers and policy makers of the need and importance to implement the guidelines into the clinical setting and health care systems.

Paper 5

Comparative efficacy of interventions for reducing symptoms of depression in people with dementia: systematic review and network meta-analysis

Jennifer A Watt,[1,2] Zahra Goodarzi,[3,4,5] Areti Angeliki Veroniki,[1,6,7] Vera Nincic,[1] Paul A Khan,[1] Marco Ghassemi,[1] Yonda Lai,[1] Victoria Treister,[1] Yuan Thompson,[1] Raphael Schneider,[8,9,10] Andrea C Tricco,[1,11] Sharon E Straus[12,11]

Watt JA, et, ak,m BMJ. 2021 Mar 24;372:n532.

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Background

- Clinical trials of ADs in dementia have shown different results
  - > incidence of falls and other adverse reactions (AR) associated with the drugs;
  - 16% with dementia have MDD and 32% with dementia have symptoms of depression

Ford AH, Almeida OP. Drugs Aging. 2017;34:89-95
Hirsh C. Ann Int Med 3 August 2021
Goodarzi ZS et. al. JAGS 2017;65:937-48.
Watt J et. al., *BMJ* 2021; 372 :n532 doi:10.1136/bmj.n532.

Objective:

In patients with dementia and depression, how do drug and nondrug interventions compare for reducing depression symptoms?

Watt J et. al., *BMJ* 2021; 372 :n532 doi:10.1136/bmj.n532.

Methods

Design: Systemic review and Meta-analysis

Data: Multiple databases since inception to October 20, 2020

- RCTs comparing drug and non-drug interventions with usual care and any other Rx targeting symptoms of depression in persons with dementia

Outcome: Change in depression symptoms, Cornell scale for depression in dementia

Watt J et. al., *BMJ* 2021; 372 :n532 doi:10.1136/bmj.n532.

Results

- 256 RCTs (n = 28 483; mean age 70 y in 91% of trials; enrolled at least 50% women in 73% of trials
- Alzheimer's disease or multiple dementia diagnosis (64% of trials)
- Risk of bias low; however, missing data was reported in 45% of trials

Hirsch C. Ann Intern Med. 2021 Aug;174(8)
Watt J et. al., *BMJ* 2021; 372 :n532 doi:10.1136/bmj.n532.

Results

Results: Network meta-analysis* of drug and nondrug interventions for reducing depression symptoms in patients with dementia and depression as a related neuropsychiatric symptom† (213 RCTs, $n = 25\ 177$)

Interventions reducing depression symptoms vs. usual care	Number of trials (*n*) with direct comparisons	MD (95% CrI) for Cornell scale for depression in dementia‡	Probability of MD >0.4 SDs
Cognitive stimulation	13 (805)	−2.9 (−4.4 to −1.5)	90%
Cognitive stimulation + cholinesterase inhibitor	0	−11 (−18 to −3.9)	99%
Cognitive stimulation + exercise + social interaction	1 (14)	−12 (−19 to −5.4)	99.8%
Massage and touch therapy	3 (219)	−9.0 (−12 to −5.9)	100%
Multidisciplinary care	7 (838)	−2.0 (−3.8 to −0.16)	49%
Occupational therapy	5 (497)	−2.6 (−4.7 to −0.40)	69%
Reminiscence therapy	14 (1163)	−2.3 (−3.7 to −0.93)	66%

Cognitive stimulation + cholinesterase inhibitor, cognitive stimulation + exercise + social interaction, and massage and touch therapy each reduced depression symptoms more than some drug interventions; other nondrug and drug interventions did not differ from one another or usual care.

Hirsch C. Ann Intern Med. 2021 Aug;174(8).

Discussion

Strengths:

- Reviewed over 3000 articles
- Focused outcome on Cornell scale for depression in dementia, scale often used in clinical settings

Concerns:

- Limited to persons with Alzheimer's disease and not other types of dementia
- Risk of bias from missing data
- Moderate heterogeneity

Watt J et. al., *BMJ* 2021; 372 :n532 doi:10.1136/bmj.n532 and supplementary tables

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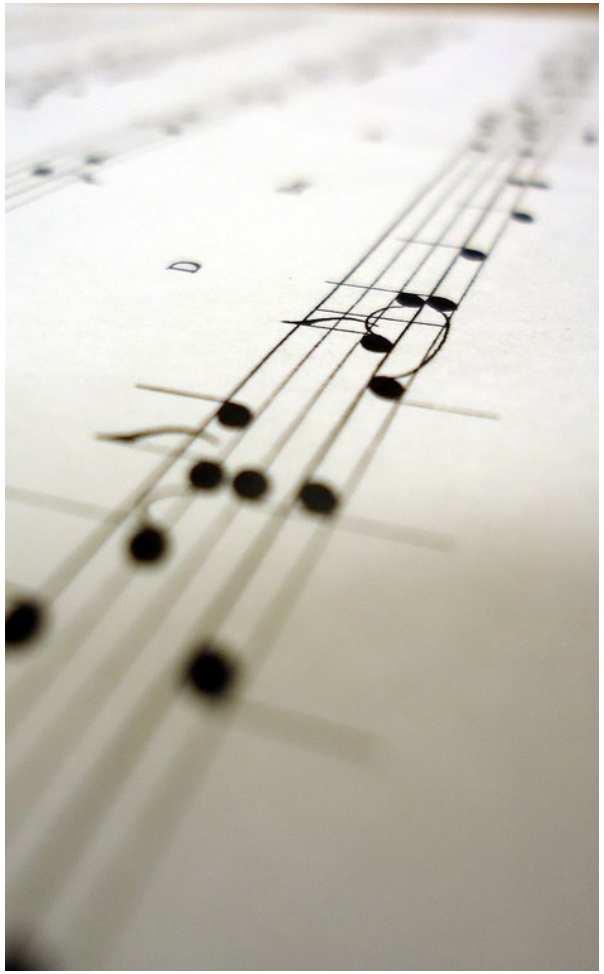
Bottom Line

Non-drug interventions alone should be the first line approach for older persons with dementia and depression symptoms.



Paper 6

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 SEPTEMBER 15, 2022 VOL. 387 NO. 11

Polypill Strategy in Secondary Cardiovascular Prevention

J.M. Castellano, S.J. Pocock, D.L. Bhatt, A.J. Quesada, R. Owen, A. Fernandez-Ortiz, P.L. Sanchez, F. Marin Ortuño, J.M. Vazquez Rodriguez, A. Domingo-Fernández, I. Lozano, M.C. Roncaglioni, M. Baviera, A. Foresta, L. Ojeda-Fernandez, F. Colivicchi, S.A. Di Fusco, W. Doehner, A. Meyer, F. Schiele, F. Ecarnot, A. Linhart, J.-C. Lubanda, G. Barczi, B. Merkely, P. Ponikowski, M. Kasprzak, J.M. Fernandez Alvira, V. Andres, H. Bueno, T. Collier, F. Van de Werf, P. Perel, M. Rodriguez-Manero, A. Alonso Garcia, M. Proietti, M.M. Schoos, T. Simon, J. Fernandez Ferro, N. Lopez, E. Beghi, Y. Bejot, D. Vivas, A. Cordero, B. Ibañez, and V. Fuster, for the SECURE Investigators*

Castellano JM et. al., N Engl J Med. 2022;387(11):967-77

Background

- Compliance estimated at 50%
- Polypill (Aspirin, Angiotensin-converting-enzyme (ACE) inhibitor, and statin)

- RCTs suggest that there are improved outcomes for polypill:
  - CV events including MI, death and complications post MI and stroke
  - Adherence

Castellano JM et. al., J Am Coll Cardiol. 2014;64:2071-2082.
Castellano Jm et. al., J Am Coll Cardiol. 2016;68:789–801.
Yusef, S. et. al., N Engl J Med. 2021;384(3):216-228.
Castellano JM et. al., N Engl J Med. 2022;387(11):967-77

Objective

Is the polypill superior than usual care to improve the outcomes of CVD?

Castellano JM et. al., N Engl J Med. 2022;387(11):967-77

Methods

Population:

- Acute coronary syndrome with/without ST segment elevation
- ≥75 yo, or ≥ 65 with either DM, mild to mod renal insufficiency (Cr Cl 30-60mls/min), previous MI/CABG/PCI

Intervention: Aspirin (100 mg), ramipril (2.5, 5, 10 mg), atorvastatin (20 or 40 mg)

Design: Randomized Controlled Trial, open labeled

Outcomes: CV death, nonfatal (NF) MI, nonfatal ischemic stroke, or urgent revascularization

Castellano JM et. al., N Engl J Med. 2022;387(11):967-77

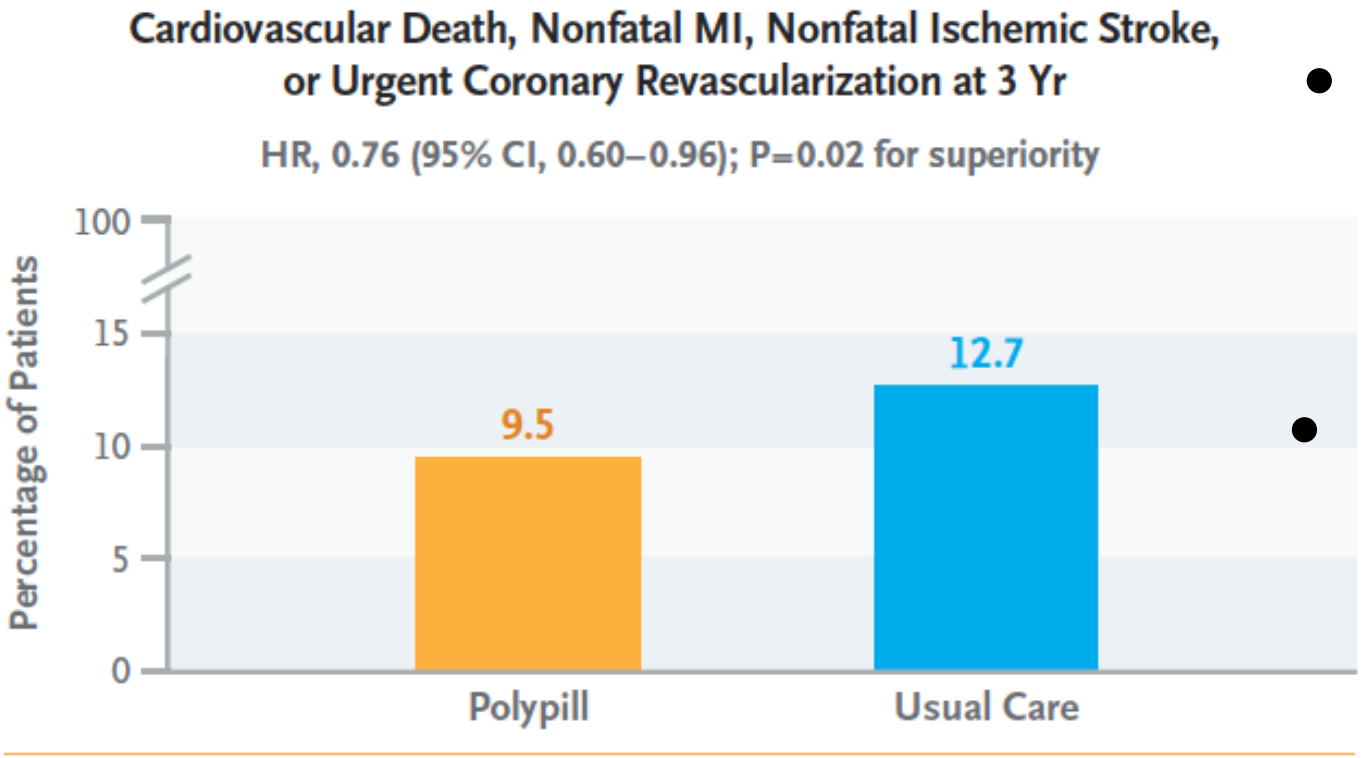
Results:

- N = 2466, Aug 2016-Dec 2019
- European countries 7, 113 sites

- Average participant:
  - 76 yo
  - 31% Female, White 98%
  - 58% vs 61% ≥ 75 yo
  - 78% HTN, 57% DM, 51% smoking,
  - mean SBP 129 mmHg, mean LDL cholesterol 2.31 mmol/L

Castellano JM et. al., N Engl J Med. 2022;387(11):967-77

Results of SECURE



- Adherence improved 74% vs 63% at 24 mos
- NS difference in adverse events and death

Castellano JM et. al., N Engl J Med. 2022;387(11):967-77

Discussion

Strengths:

- Multiple formulations
- Fewer pills
- Improved Participant satisfaction

Cautions:

- Not blinded
- Self reported medication adherence

Bottom Line

Polypill can be considered in a patient with low medication compliance.

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Paper 7

JAMA Internal Medicine | Original Investigation | LESS IS MORE

Time to Clinical Benefit of Intensive Blood Pressure Lowering in Patients 60 Years and Older With Hypertension

A Secondary Analysis of Randomized Clinical Trials

Tao Chen, PhD; Fang Shao, PhD; Kangyu Chen, PhD; Yang Wang, MSc; Zhenqiang Wu, PhD; Yongjuan Wang, MSc; Yanpei Gao, MSc; Victoria Cornelius, PhD; Chao Li, PhD; Zhixin Jiang, PhD

JAMA Intern Med. 2022;182(6):660-667. doi:10.1001/jamainternmed.2022.1657
Published online May 9, 2022. Corrected on July 5, 2022.

Background

Intensive blood pressure (BP) control in older adults **reduce** the long term risk of **cardiovascular events**.

Must balance against **harmful risks** for hypotension, syncope, falls, acute kidney injury, and electrolyte abnormalities, etc.

Bavishi C, et al. J Am Coll Cardiol. 2017;69 (5):486-493.
Lancet. 2021; 398(10305):1053-1064.
Ettehad D, et al. Lancet. 2016;387(10022):957-967.

Objective

What is the time-to-benefit (TTB) for intensive BP treatment for older adults with hypertension?

Methods

Design: Systematic review and meta-analysis

P: Older adults 60 years and older with hypertension

I: Intensive BP lowering

C: Standard BP lowering

O: Time to first major adverse cardiovascular event (MACE)

- myocardial infarction, stroke, cardiovascular death

Results

6 large RCTs:

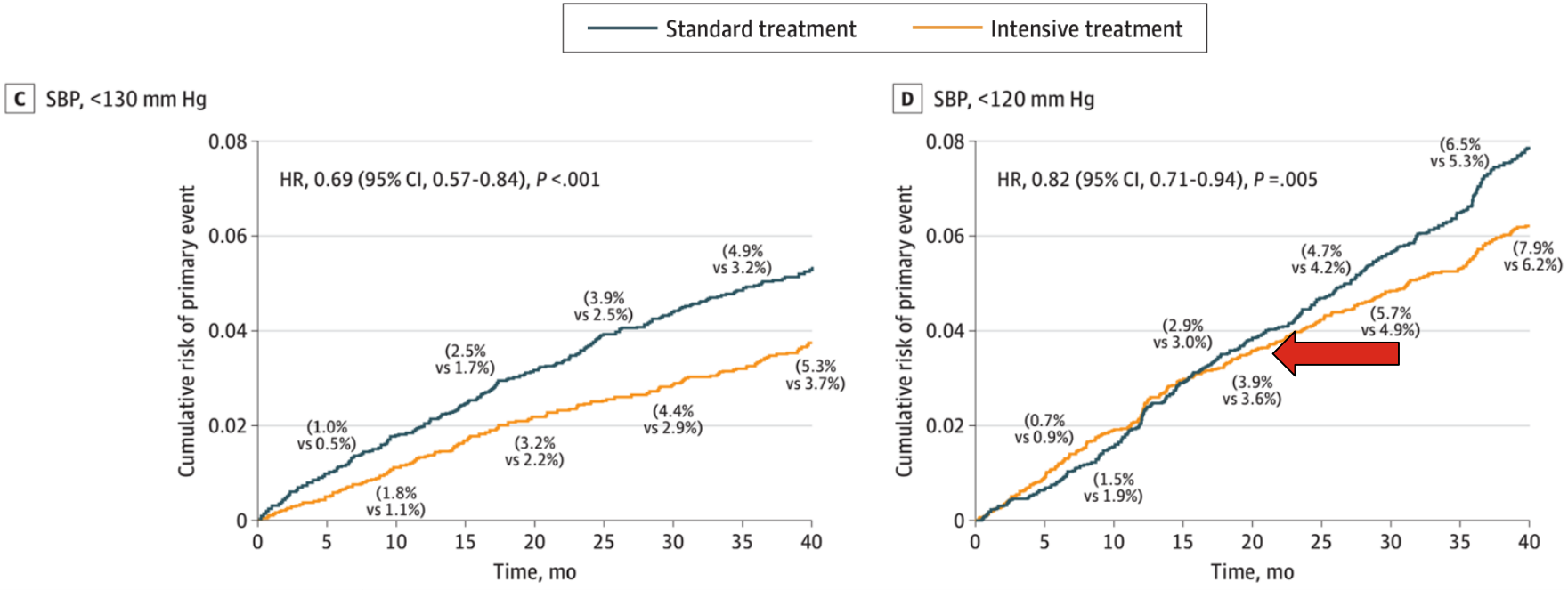
1. SPRINT (SBP<120 vs <140)
2. ACCORD BP (SBP<120 vs <140)
3. Cardio-Sis (SBP<130 vs <140)
4. JATOS (SBP<140 vs <160)
5. VALISH (SBP<140 vs <150)
6. STEP (SBP<130 vs <150)

27,414 patients:

- Mean age 70 years
- 56% women

Results

- Intensive BP treatment was associated with significant 21% reduction in MACE.
- To avoid one MACE outcome:
  - Treat 500 older adults for 9 months, or
  - Treat 100 older adults for 34 months
- TTB consistently longer in subgroups targeting SBP <120mmHg



Discussion

Strengths:

- First study of TTB for older adults
- Provide framework for therapeutic decisions

Limitations:

- Patients older than 80 years underrepresented
- Unclear if greater CVD risk may shorten TTB
- Could not report time to harms

Bottom Line

Intensive BP control may be most appropriate for older adults with hypertension with more than 3 years of life expectancy but not for those with less than 1 year.

Paper 8

JAMA | Original Investigation

Effect of Regional vs General Anesthesia on Incidence of Postoperative Delirium in Older Patients Undergoing Hip Fracture Surgery
The RAGA Randomized Trial

Ting Li, PhD; Jun Li, PhD; Liyong Yuan, MD; Jinze Wu, MD; Chenchen Jiang, MS; Jane Daniels, PhD; Rajnikant Laxmishanker Mehta, MS; Mingcang Wang, MD; Joyce Yeung, PhD; Thomas Jackson, PhD; Teresa Melody, RN; Shengwei Jin, PhD; Yinguang Yao, MD; Jimin Wu, MD; Junping Chen, MD; Fang Gao Smith, PhD; Qingquan Lian, PhD; for the RAGA Study Investigators

JAMA. 2022;327(1):50-58. doi:10.1001/jama.2021.22647
Published online December 20, 2021. Corrected on March 22, 2022.

Background

Delirium occurs in ~19% of older adults after **hip fracture** surgery.

Unclear relationship between general anesthesia (GA) vs. regional anesthesia (RA) and postoperative delirium.

- NEJM 2021 REGAIN trial: RA participants almost all had sedation.

More rigorous RCT required!

Haynes MS, et al. J Am Acad Orthop Surg Glob Res Rev. 2021 May 14;5(5):e20.00221.
Ravi B, et al. JAMA Netw Open. 2019;2(2):e190111-e190111.
Guay J, et al. Cochrane Database Syst Rev. 2016;2(2):CD000521
Neuman M et al. N Engl J Med 2021; 385:2025-2035

Objective

Does RA compared with GA would reduce the incidence of postoperative delirium in older adults undergoing hip fracture repair?

Methods

Design: Randomized open-label multicenter trial at 9 academic sites in China.

P: Older adults aged 65 years and older with fragility hip fracture for surgical repair

I: Spinal anesthesia without sedation

C: General anesthesia

O: Incidence of delirium (diagnosed by CAM) during first 7 days post-op

Results

Participants:

- 950 participants, mean age 77 years
- 2.5x more intraoperative hypotension in GA group (78%) vs. RA group (32%)

Primary outcome:

No difference (6.2% vs 5.1%) in incidence of postoperative delirium within 7 days in the RA vs GA group respectively.

Secondary outcomes:

No difference in type of delirium, severity, pain scores, length of stay, and mortality within 30 days.

Discussion

Strengths:

- Trained CAM assessors
- Included patients with preoperative delirium and dementia
- RA group did not receive sedation

Limitations:

- Younger trial participants (77yo)
- Lower incidence of delirium overall (5-6% vs. 19% in US)

Bottom Line

There is no clear preference for RA vs GA for hip fracture patients for reducing postoperative delirium.

Paper 9

JAMA Neurology | Original Investigation

Long-term Effectiveness of Adjuvant Treatment With Catechol-O-Methyltransferase or Monoamine Oxidase B Inhibitors Compared With Dopamine Agonists Among Patients With Parkinson Disease Uncontrolled by Levodopa Therapy

The PD MED Randomized Clinical Trial

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Background

Dyskinesias and motor fluctuations complicate late-stage Parkinson disease (PD) after **prolonged high-dose treatment with levodopa**.

Adjuncts to levodopa:

- dopamine agonists (DA)
- catechol-O-methyltransferase inhibitors (COMTI)
- monoamine oxidase type B inhibitors (MAOBI)

No head-to-head RCTs comparing efficacy.

Objective

In late-stage PD patients with uncontrolled motor symptoms not responding to levodopa adjustment, which adjunct therapy is more effective?

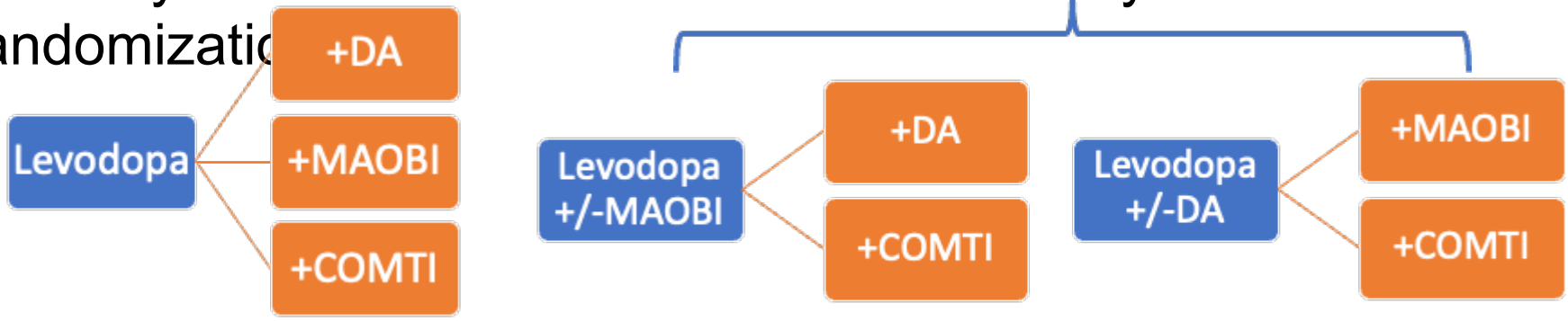
a) DA vs. (MAOBI or COMTI)
b) COMTI vs. MAOBI

Methods

Design: Multisite open-label RCT in the UK

P: idiopathic PD patients uncontrolled on levodopa therapy (alone or in combo with DA or MAOBI)

I: 3-way randomization: 2-way randomizatic



C: Other active treatment groups

O: Functional status by PDQ-39

Results

500 participants, balanced characteristics

- Mean age 73 years, 63% men
- Median 4.5 years follow up

- DA = ropinirole 43%, pramipexole 35%
- MAOBI = oral selegiline 52%, rasagiline 30%
- COMTI = entacapone

- Comparable rates of withdrawal from treatment

Results

DA vs. combined MAOBI or COMTI groups:

- DA group trended better mobility score but not significant (2.4 pt difference on PDQ-39, 95%CI, -1.3 to 6 pts).

MAOBI vs. COMTI:

- MAOBI had significantly better motor score (4.2 points on PDQ-39, 95%CI, 0.4 to 7.9) meets minimal clinically important difference).
- Better PDQ-39 score for ADLs, emotional well-being, and social support.

No significant difference in death, dementia, and institutionalization between all groups.

Discussion

Strengths:

- Pragmatic real-world clinical trial
- Median 4.5 year follow up
- Comparable rates of non-elective hospitalizations (70%) to a PD study in Ontario (68%)

Limitations:

- Excluded patients with dementia
- Withdrawal from treatment more common in age >70

Guttman M, et. al. Mov Disord. 2003;18(3): 313-319.

Bottom Line

In advanced PD patients on levodopa with uncontrolled motor symptoms, a DA or MAOBI appears more effective than COMTI (entacapone) for mobility.

Q & A