Research Round up November 2024 – Prescribing in Frailty

Introduction

Last month the research round-up provided you with an overview looking at articles relating to or including remote care and remote prescribing. This month we will review articles looking at prescribing in frailty. The first article looks at a pharmacist lead deprescribing service using the STOPPFrail Criteria for older adults. The second article is a systematic review looking at the association between polypharmacy and frailty in patients with heart failure. Finally in our third article we review the association between drug therapy and the risk of incident frailty.

Pharmacist-Led Deprescribing Using STOPPFrail for Frail Older Adults in Nursing Homes

E Hurley, K Dalton, S Byrne, T Foley, E Walsh (2024) *Pharmacist-Led Deprescribing Using STOPPFrail for Frail Older Adults in Nursing Homes* Journal of American Medical Directors Association 25;9: 1-7

This article, published in the Journal of American Directors Association, sought to demonstrate the impact that a pharmacist-led application of STOPPFrail criteria could have on reducing potentially inappropriate medications and clinical outcomes for frail older adults in nursing homes. The study design was prospective in nature and was an unblinded non-randomized study conducted in six nursing homes in Cork, Ireland. Data was collected at baseline (before the pharmacist review), after the review was conducted and at six months post review. A convenience sampling approach was used with the research pharmacist liaising with GPs and nursing staff to identify eligible patients (over 65 with advanced frailty). This resulted in 99 participants being recruited with the intervention taking place between August 2021 and April 2023. After the pharmacist deprescribing recommendations were made discussions with the participants GPs were undertaken and the recommendation was either implemented or not. Measured outcomes included number of prescribed medications, medication costs, anticholinergic cognitive burden (ACB), drug burden index (DBI), modified medication appropriateness index (MMAI), quality of life (QoL), non-elective hospitalizations, emergency department visits, falls, and mortality were measured at baseline, post review, and at 6 months post review.

Of the included participants 94% were found to have one potentially inappropriate medication prescribed. This was most often a drug with no clear indication for prescribing. Of 348 recommendations provided to GPs, 203 (58%) were accepted and 193 (55%) were implemented.

STOPPFrail-guided deprescribing led by a pharmacist in nursing homes appeared to significantly reduce PIMs, medication costs (initially), and anticholinergic and sedative burdens, without adversely affecting other patient outcomes. There were however no significant differences in falls, emergency department visits, non-elective hospitalizations, or QoL.

The researchers conclude that a wider integration of pharmacists into nursing homes would be beneficial to optimize the medications and health outcomes of frail older adults. They also suggest that a randomized controlled trial of a longer duration of this intervention in nursing homes should be conducted to further build on the evidence.

[Pharmacist-Led Deprescribing Using STOPPFrail for Frail Older Adults in Nursing Homes - ScienceDirect](https://www.sciencedirect.com/science/article/pii/S1525861024005449)

What is the association of polypharmacy with frailty in heart failure? A systematic review and meta-analysis

K Prokopidis, GD Testa, N Veronese, Y Dionyssiotis, J McLean, L Walker & R Sankaranarayanan. (2024) *What is the association of polypharmacy with frailty in heart failure? A systematic review and meta-analysis*: Journal of Frailty, Sarcopenia and Falls 1;9 (1):51-65

This systematic review, published in the Journal of Frailty, Sarcopenia and Falls, sought identify the difference in the number of medications and the risk of polypharmacy between patients with heart failure and frailty in comparison to those with heart failure but without frailty. The study used updated 2020 Preferred Reporting Items for Systematic Reviews and MetaAnalyses (PRISMA) guidelines (Paige et al 2020).

Overall, 13 studies were included in this systematic review and meta-analysis, with seven studies assessing the prevalence of polypharmacy and six studies assessing the number of medications administered by patients with heart failure and frailty vs. without frailty. After detailed analysis the reviewers found that polypharmacy prevalence was significantly higher in patients with frailty compared to patients without frailty even after allowing for differences in frailty criteria but lost significance after adjusting for comorbidities despite still showing a higher risk. The review also discovered that the actual number of medications was also higher in patients with heart failure and frailty as opposed to heart failure alone. The authors were careful to outline that polypharmacy itself was not the main issue, rather the potentially inappropriate medication prescribing which was seen to occur.

The reviewers suggest that based on their results, a multidisciplinary approach including experts in frailty, heart failure, and pharmacology in the elderly may be required to better manage patients in this situation and avoid unnecessary polypharmacy. This could help to reduce the risk of potentially inappropriate medications being prescribed, and result in a reduction in potentially harmful drug-drug interactions and their consequences. They conclude that evaluation of the risk of polypharmacy and potentially inappropriate medication prescription should form part of routine assessments and that more real-world studies are needed to inform prescribing in heart failure and frailty.

[What is the association of polypharmacy with frailty in heart failure? A systematic review and meta-analysis - PMC (nih.gov)](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10910251/)

Association between Drug Therapy and Risk of Incident Frailty: A Systematic Review

S Thanapluetiwong, T Chattaris, SM Shi, CM Park, SDM Sison & DH Kim (2024) *Association between Drug Therapy and Risk of Incident Frailty: A Systematic Review* Annals of Geriatric Medicine and Research 28 (3):247-256

This final article, a systematic review published in the Journal Annals of Geriatric Medicine and Research, aimed to explore the association between drug therapy and the risk of incident frailty in older adults. The driver for this was that identifying the modifiable risk factors for frailty may have a bearing on its development and progression and medication has been identified as a possible modifiable risk factor. The authors also acknowledge the link between polypharmacy and frailty but state that a lack of comprehensive reviews investigating a link between specific medications and incident frailty was a gap in the literature that needed explored.

Appropriate search strategies were employed with robust adherence to the systematic review protocol and quality assessment. Studies included were a mix of randomized control studies and cohort studies published between 2011 and 2022. In total 19 studies were included that accounted for 211,948 participants, with sample sizes ranging from 23 to 41,378 participants. The study participants age ranged from 55.6 to 81.7 years and follow up duration was between 2 weeks to 11 years. The majority of the studies were in the community with only 2 in nursing homes. The reviewers categorized the drugs into six medication classes: analgesics, cardiometabolic medication, chemotherapy, central nervous system (CNS)-active medication, hormonal therapy, and nutritional supplements.

The review found that only the CNS-active drugs were found to give an increased risk of incident frailty and included muscle relaxants, sleep medication, pain medication, and antidepressants. Drugs in the other categories displayed an inconsistent spread of frailty risk over selected studies. This could be attributed to diverse study characteristics and reduce the reliability of an conclusions that could be drawn for these classes of drugs. In the analgesic group, non-aspirin NSAIDs were associated with a risk of frailty, whereas aspirin showed conflicting results. NSAIDs may increase cardiovascular risk and, as a result increase the risk of frailty.

The reviewers state that their findings suggest that prescribers should use caution with CNS-active medications to reduce the risk of frailty onset and decrease the worsening of frailty in those already deemed to be frail. They conclude that further research should focus on a bigger spread of drugs and drug classes that may increase the risk of frailty while other research into drugs that may decrease risk or improve frailty scores should be considered too.

[Association between Drug Therapy and Risk of Incident Frailty: A Systematic Review (e-agmr.org)](https://www.e-agmr.org/journal/view.php?doi=10.4235/agmr.24.0034)

Conclusion

Frailty is a clinical syndrome characterized by a decline in physiological reserve and increased vulnerability to stressors. As the worlds older population is growing and many are living longer this may become a commonly encountered condition for prescribers. It’s associated with higher risks of falls, hospitalization, disability, and mortality. Many medications can also be associated with these and increase the risk of frailty. Polypharmacy is a contributing factor in frailty development where potentially inappropriate medications can cause decline. Areas for consideration are CNS acting drugs as these can lead to drowsiness, confusion, or balance issues. Also important are antihypertensives which can cause orthostatic hypotension, leading to dizziness and falls.

Prescribers should be aware of the risk of frailty when prescribing in the elderly population and incorporate strategies into their reviews to detect and mange it when it arises and to minimise risk and support overall health and resilience.

Additional references

Page MJ, McKenzie JE, Bossuyt PM et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. Syst Rev (2021); 10: 89. <https://doi.org/10.1186/s13643-021-01626-4>