Research Round Up- Polypharmacy And The Older Adult

Introduction

Last month the research round up provided you with an overview of articles looking at the role and remit of physiotherapist prescribers. This month we will be reviewing articles concerning polypharmacy and the older adult. The first article considers polypharmacy in cancer treatment, the second looks at the area of heart failure and the role of the multidisciplinary team. Finally, we will review an article on polypharmacy and type 2 diabetes.

Polypharmacy in older adults with cancer undergoing radiotherapy: A review

https://www.sciencedirect.com/science/article/pii/S1879406822000352

Novack, J., Goldberg, A., Dharmarajan, K., Amini, A., Maggiore, R.J., Presley, C.J. & Nightingale, G. (2022) *Polypharmacy in older adults with cancer undergoing radiotherapy: A review* Journal Of geriatric Oncology 13:6 778-783

This review of the literature published in the Journal of Geriatric Oncology aimed to elucidate the scale of the issue in a population of older adult patients with cancer and to discuss the implications of this with a specific focus on those undergoing treatment with radiotherapy.

The authors begin by outlining the issue of polypharmacy and its place in the Public health Agenda. They acknowledge that this particularly affects the older age group and define it as patients taking five or more medications at the same time although they do concede that differences in definition do exist within the literature. Polypharmacy is further subcategorised into minor, major and excessive. It is important to note that all o f these could still be appropriate and to differentiate between this and inappropriate which is more high risk. The literature review revealed that the prevalence can vary between 10 and 90% but that this varies and increases with increasing age. They discovered that in the population of older adults with cancer around 50% of patients had polypharmacy and by the end of radiation therapy this increased to 75%. It is due to these figures that this is of such keen interest to researchers at this time. There were many areas of interest that stemmed from the review and the authors examine the incidence of radiation therapy and polypharmacy, medication documentation and review, effects on nutrition and its interplay with polypharmacy, management of toxicity and go on to give a clinical case example. They conclude the review with some pertinent points. This issue is only going to increase with time as more older adults have cancer treatment and suggest measures to provide early detection and review of at risk patients, an interprofessional team approach for medication management and review as well as nutritional monitoring and assessment of toxicity risk. They suggest more studies are required to assist in the development of robust good practice guidelines.

Polypharmacy in Older Heart Failure Patients: a Multidisciplinary Approach

https://link.springer.com/article/10.1007/s11897-022-00559-w

Sukumar, S., Orkaby, A.R., Schwartz, J.B., Marcum, Z., Januzzi, J.L., Vaduganathan, M. & Warraich, H.J. (2022) *Polypharmacy in Older Heart Failure Patients: a Multidisciplinary Approach* Current Heart Failure reports: 19, 290-302

This article, published in the Journal of Current Heart failure Reports, aimed to provide a review of clinical trial reports and multidisciplinary strategies which were applicable to older adults with heart failure to elucidate guidance on how to optimise polypharmacy and health in this patient population.

The article introduces the condition of heart failure in tis patient group and gives data on prevalence and incidence over varying age groups. They suggest that within the older adult population, many current clinical guidelines may not adequately address the particular and complex needs of the older patient. These are grouped into a term of geriatric syndromes and include falls, incontinence, functional decline and cognitive impairment. They define polypharmacy as five or more medications and point out that it can be a cause and a consequence of geriatric syndrome. The medications taken for the heart failure and for other comorbidities need to be considered. They suggest that the definition of polypharmacy for older adults with complex medical needs may benefit from modification in order to more meaningfully assess and categorise medication burden. There is also some discussion about deprescribing in this patient population. The article goes on to discuss appropriate versus inappropriate polypharmacy and how the prescriber can review the patient and what to consider to make the judgment. Examples include medication reconciliation and alignment with treatment goals, clear indication for medication and medication safety in older adults. There is a discussion of risks of adverse events and the relationship of this to altered pharmacology after the age of 65 and the role of the prescriber in minimisation and management.

The authors conclude that given the strong evidence base for the effectiveness and mortality benefits of heart failure medication in older adults that a degree of polypharmacy is expected and appropriate and that a shift in the definition in this population is warranted. It is suggested that instead of assuming all polypharmacy is “good” or “bad,” they propose a concerted move, using a multidisciplinary approach, to focus on the “appropriateness” of specific medications, in order to optimise heart failure medical therapy and that all clinicians involved in the patient’s care should consider goals of treatment, functional status and evidence base to optimise medications.

Prevalence and impact of polypharmacy in older patients with type 2 diabetes

Remelli, F., Ceresini, M.G., Trevisan, C., Noale, M. & Volpato, S. (2022) *Prevalence and impact of polypharmacy in older patients with type 2 diabetes* Aging Clinical and Experimental Research 34: 1969-1983

https://link.springer.com/article/10.1007/s40520-022-02165-1

This systematic literature review published in the Journal of Aging Clinical and Experimental Research aimed to investigate the prevalence and impact of polypharmacy in an ageing population with a focus on those with diabetes. The authors conducted a systematic review of observational or experimental studies that discussed the topic of choice published up to August 2021. Meta analysis was performed to determine prevalence and impact across included studies. Appropriate databases and a grey literature search yielded 1465 potential studies. Use of the PECOS criteria derived the keywords and parameters of search with subsequent screening and quality appraisal performed using the PRISMA format. This resulted in 17 included studies, nine qualitative and 8 quantitative. Data extraction was carried out by two independent researchers and summary tables produced of the included studies which is of great benefit to the reader.

The authors found a variance in definition of polypharmacy across the studies with the range of between four and six medications per day as a definer. Across study data analysis and statistical pooling revealed a prevalence of 64% of patient with diabetes being classed as polypharmacy. When studies using the same definition of five or more medications as polypharmacy, the pooled prevalence was 50%. They also discovered the between studies heterogeneity was high. Over all the included studies, it was noted that polypharmacy in this patient population had a negative influence on outcomes. These included diabetic specific outcomes related to glycaemic control and stability and other health related outcomes such as falls, faints, risk of admission to hospital and on mortality. The authors do acknowledge that this may be partly explained by the fact that this patient population often have multiple comorbidities that necessitate the prescription of medication. However they also cite the potential overuse of antidiabetic drugs in the older adult in an attempt to attain unrealistic glycaemic targets for this age group. They suggest both of these things contribute to the negative outcomes observed in polypharmacy in the studies reviewed. They do describe limitations to their review, including the noted high heterogeneity and the differences in defining polypharmacy across papers but also discuss differing methods in assessing health outcomes and lack of information on all medications prescribe. The paper concludes with some measured statements around the noted high prevalence and the challenge to prescribers and does suggest as in other publications that polypharmacy has a substantial impact on outcomes but that future research should use a consistent definition of polypharmacy and that these should be done in differing setting to get a better overall picture so as to generate improved care strategies.

Conclusion

Polypharmacy is not a new phenomenon and the older the patient the more likely they are to have polypharmacy and to suffer adversely from it. Appropriate polypharmacy is found but these articles concentrate on the adverse outcomes that can be found in inappropriate polypharmacy and what the prescriber can do to minimise this. Some good practices have been elucidated but there is a suggestion from some that development of standard guidelines and definitions or adherence to current advice could help mitigate adverse events in this vulnerable patient group.