

Introduction

Last month the research round-up provided you with an overview of articles looking three articles for a drug newly recommended to the UK prescribers for amyloid cardiomyopathy. This month we will look at three articles around the subject of medicines adherence. The first article is an umbrella review of medication adherence in patients with kidney disease. The second examines cost-related non-adherence in the area of COPD prescribing. Finally, we summarise a systematic review of medicines adherence in depression.

Medication Adherence Among Patients with Kidney Disease: An Umbrella Review

W Tesfaye, N Parrish, K Sud, A Grandinetti, & R Castelino (2024) *Medication Adherence Among Patients With Kidney Disease: An Umbrella Review* *Advances in Kidney Disease and Health* 31:1:68-83.

This article published in the Journal *Advances in Kidney Disease and Health*, outlines an umbrella review looking at levels of adherence to medications in patients with Chronic Kidney Disease (CKD). This review of other systematic reviews and meta-analysis publications was conducted with a robust methodology and using the PRIOR statement (Gates, Gates, Pieper *et al* 2022). Relevant databases were chosen to search and a comprehensive search strategy including study selection and quality assessment is seen in the published article. After screening 37 reviews spanning the past 20 years were included in the umbrella review. The review presents the results under four major categories, these being prevalence of treatment non-adherence, factors associated with (non) adherence, clinical and patient reported outcomes associated with treatment non-adherence and interventions implemented to improve treatment adherence. With regard to the prevalence of non-adherence to medication the review found that this varied due to patient type. In transplant patient's non-adherence ranged from 1.6% to 58.7% in one study, 15% to 22.3% in another, and 0.6% to 93.7% in a third study. Patient on dialysis showed rates of non-adherence of 22% to 74% (mean 51%) in one review, and from 12.5% to 98.6% in another review specifically focused on haemodialysis patients. In those on peritoneal dialysis rates of 2.6% to 85.2% were reported. The factors associated with non-adherence are many and varied, with some notable findings being sociodemographic status, disease related factors, drug related factors, patient related factors and presence of mental health conditions. Assessment of the clinical outcomes due to non-adherence is limited as this was not explored by the majority of studies included in the review. The authors did find a heavy emphasis on interventions to improve adherence in most of the studies. Common interventions to improve adherence included nurse-led interventions, pharmaceutical services, and eHealth technologies, which had varying effects on medication adherence or dialysis sessions. They suggest future interventions can target several factors that affect medication adherence in patients with CKD. While some factors are common across all CKD stages, others are specific to certain disease stages, such as length on dialysis or since having transplant. Understanding and identifying these common as well as specific factors tailored to the different stages can help optimize adherence. The review concludes with the need for further research to investigate the effect of medication nonadherence on outcomes or the translation of specific interventions targeted at medication adherence to improved patient and clinical outcomes.

<https://www.sciencedirect.com/science/article/pii/S2949813923000897>

Cost-related medication nonadherence in adults with COPD in the United States 2013–2020

X Wen, H Qiu, B Yu, J Bi, X Gu, Y Zhang & S Wang (2024) *Cost-related medication nonadherence in adults with COPD in the United States 2013–2020* BMC Public Health: 24: 864

This article published in the Journal BMC Public Health used data obtained from the National Health Interview Survey (NHIS) conducted by the US National Centre of Health Statistics of the Centres for Disease

Control and Prevention annually, to investigate the prevalence and sociodemographic characteristics of cost-related medication non-adherence in adults with chronic obstructive pulmonary disease (COPD) between 2013 and 2020. The researchers include anyone who had a diagnosis of COPD, emphysema or chronic bronchitis and were over 18 years of age. The primary outcome of interest was cost-related medication non- adherence defined as a positive answer to any of three specific questions relating to skipping filling a prescription, taking less medication than prescribed or delaying filling a prescription all due to cost over the preceding year. This cross-sectional study found that from the NHIS over the defined period, of the 253,577 adults included, 17,591 reported COPD corresponding to 5.9% of US adults which therefore represents a total projected population of 14.38 million patients per year. Of the 17,591 patients, 15,928 of them completed the individual components for cost-related medication non- adherence with 2881 self-reporting experience of this. This translates as 18.56% (2.39 million) reported experiencing of cost-related medication non-adherence which included 12.50% (1.61 million) missing doses, 13.30% (1.72 million) taking lower than prescribed doses, and 15.74% (2.03 million) delaying filling prescriptions to save costs. Using a multivariable logistic regression model that accounted for age, sex, race, education, family income, insurance, and comorbidities, it was found that cost-related medication non- adherence was more likely to occur in younger age groups (18–39, 40–64 years) than in the ≥ 65 years age group. The factors most strongly associated with reporting cost-related medication non- adherence included female sex, low family income, lack of insurance, being a current smoker, asthma and the number of high comorbidities. Similar factors were also associated with cost-related medication non- adherence in the older (≥ 65 years of age) and younger (18–64 years) age groups of patients with COPD. The authors conclude that this represents almost 1 in 6 US adults with COPD reporting cost-related medication non- adherence with many and varied factors influencing this. They suggest targeted interventions based on the identified factors for each individual to enhance medication adherence in this population of patients.

<https://link.springer.com/article/10.1186/s12889-024-18333-z>

Medication Non-adherence in Depression: A Systematic Review and Metanalysis

R Halkjaer Lassen, W Gonçalves, B Gherman, E Coutinho, A E. Nardi, M A Peres, J C Appolinario (2024) *Medication Non-adherence in Depression: A Systematic Review and Metanalysis* Trends Psychiatry Psychother (online pre-publication proof version)

This article published online ahead of publication in the Journal Trends in Psychiatry and Psychotherapy sought to review and consolidate available data from the literature on the prevalence of medication non-adherence to antidepressant medication in those with major depressive disorder (MDD). This systematic review employed a recognised methodology and used the PRISMA guidelines for a search of appropriate electronic database searches (Page, McKenzie, Bossuyt *et al.* 2021).

Appropriate keywords helped identify relevant articles and implementation of strict inclusion and exclusion criteria were used before a quality assessment of paper led to the final included study numbers. This process resulted in 11 studies being included in the review. Overall, the included studies reported a non-adherence rate ranging from 14.7% to 70.3%. When this data was pooled it revealed a proportion of 42% non-adherence, but caution is advised when using this figure as there was a large amount of heterogeneity between studies. This study updates information on non-adherence in this population and verifies that this continues to be an area of concern with those with MDD. The authors state a limitation of this review is the varied number of methods used in the studies to measure non-adherence which may lead to discrepancies between results. They suggest it is an urgent priority to develop strategies to encourage patients to adhere to prescribed regimes to maximise pharmacological benefit.

<https://trends.org.br/article/doi/10.47626/2237-6089-2023-0680>

<https://trends.org.br/article/10.47626/2237-6089-2023-0680/pdf/trends-0-AheadOfPrint-659d4271a9539517aa77a6a4.pdf>

Conclusion

The adherence or non-adherence of patients to their prescribed medication regimens is a frequent concern to prescribers and often forms part of every patient contact and medication review. The three areas reviewed comprise a significant patient population in the UK with CKD, COPD and MDD being prevalent conditions. These articles indicate that although non-adherence is well recognised strategies to decrease it have not been entirely successful and vigilance is required during reviews to target interventions in a patient centred manner to achieve medicines optimisation.

Additional references

M. Gates, A. Gates, D. Pieper, et al (2022). *Reporting guideline for overviews of reviews of healthcare interventions: development of the PRIOR statement*. BMJ, 378, Article e070849

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>