

Introduction

Last month the research round-up provided you with an overview of articles looking at the prescribing anticipatory medications at end of life. This month we will have an overview of different areas of prescribing in patients with Diabetes. The first article looks at the impact of nurse prescribing in diabetes and its effect on care delivery. The second article looks at a pharmacist driven initiative in the veterans population in an area of the USA and the use of SGLT2i drugs in patient with chronic kidney disease. Finally we will look at a paper investigating metformin use in patients with post-pancreatitis diabetes mellitus.

The impact of nurse prescribing on health care delivery for patients with diabetes: a rapid review

K Short , C Andrew , W Yang , I Jamieson (2024) *The impact of nurse prescribing on health care delivery for patients with diabetes: a rapid review* Journal of Primary Healthcare
doi.org/10.1071/HC23121

This article published in the New Zealand Journal of Primary Healthcare sought to undertake a review of the literature published around the impact of nurse prescribing on the delivery of health care services for people with Diabetes. The article begins with outlining the extent of the Diabetic population in the New Zealand area of Aotearoa and an indication of the areas of health concerns for this population of patients. The review would be conducted to take in information on nurse prescribing in this population and include countries other than New Zealand including Australia, The UK and Canada. The rationale for these countries of choice was their similarity in healthcare systems. The review was conducted as a systematic literature search across multiple appropriate journal databases in November 2022. The search period was the 10 years prior to this. This timeframe was chosen due to the limited literature available in the last 5 years according to the authors. Appropriate search strategy and quality appraisal was employed and the PRISMA framework was used for transparency of process. The search yielded 15 papers that met the inclusion criteria and data analysis was performed on these. Seven of these were primary research papers, four were review articles and there were four narrative reviews. The reviews spanned the target countries with the most being from New Zealand and the UK. Thematic analysis yielded four common themes, these being the impact of nurse prescribing on clinical outcomes, levels of patient satisfaction, implications for health care service provisions, and identification of barriers and facilitators associated with nurse prescribing. The review determined that clinical outcomes for patients managed by nurse prescribers or nurses without a prescribing role were similar, but many studies reported a higher patient satisfaction level when seen by nurse prescribers. It was seen where a nurse prescriber was in place that there was improved access to timely medications, and this has an implication for service provision. Common barriers to nurse prescribing were inadequate time, poor organisational policy and limited access to CPD. Facilitators include good supervision, positive relationships and access to ongoing education. They conclude the positive impact of nurse prescribing in this area but highlight the need for ongoing education and support and a collegiate approach to Diabetes healthcare.

<https://www.publish.csiro.au/HC/HC23121>

Pharmacist-driven outreach initiative to increase prescribing of sodium-glucose cotransporter-2 inhibitors in eligible VHA patients with chronic kidney disease: a study protocol.

D L. Pestka, D Murphy, P Huynh , J A. Rechtzigel , S Kjos , L M Ellich , A N. Kaplan, B C. Taylor, M Atwood , B A. Polsfuss , J Y. Lee and A Ishani (2024) *Pharmacist-driven outreach initiative to increase prescribing of sodium-glucose cotransporter-2 inhibitors in eligible VHA patients with chronic kidney disease: a study protocol*. BMC Nephrology 25:14

This article published in the Journal BMC Nephrology sought to evaluate the prescription of SGLT2 inhibitors in a pharmacist driven initiative within a veterans population in the USA. The aim was to see if this specific initiative could improve the adoption of this group of medication and improve health outcomes. The population specified was veterans with Diabetes and chronic kidney disease as these patients are at a greater risk of adverse events due to their comorbid conditions. Research has shown that this population of patients are likely to benefit from sodium-glucose cotransporter-2 inhibitors (SGLT2i) prescription, this information has informed prescribing guidelines. Eligible participants will be identified using veterans databases which would identify diabetic patients. Randomisation will be employed and select only participants with an odd numbered social security number for inclusion as the intervention group leaving those with even social security numbers as control. For ethical purposes, the control group will be placed on a waiting list for the intervention. The main outcome for this programme is the initiation of SGLT2i medication with other outcome measures relating to medication use and adherence over a 12-month period and safety issues such as blood tests for monitoring, reasons for stopping or declining the medication and changes to eGFR.

The authors present a robust and coherent protocol to be employed in the near future, and ethical review has taken place to allow the study to go forward. This initiative was derived on the back of reluctance of some current prescribers to change to SGLT2i despite evidence and guideline and seeks to augment the evidence published with a controlled prospective trial. The authors conclude with the suggestion that similar pragmatic approaches should be explored with future quality improvement projects to facilitate study designs that are easily implementable yet have added rigor to produce generalizable findings.

<https://link.springer.com/article/10.1186/s12882-023-03446-1>

Metformin treatment is associated with reduced risk of hypoglycaemia, major adverse cardiovascular events, and all-cause mortality in patients with post-pancreatitis diabetes mellitus: a nationwide cohort study.

L Davidsen, M H Jensen, M E Cook, P Vestergaard, F K Knop, A M Drewes, S S Olesen (2023)
Metformin treatment is associated with reduced risk of hypoglycaemia, major adverse cardiovascular events, and all-cause mortality in patients with post-pancreatitis diabetes mellitus: a nationwide cohort study. European Journal of Endocrinology 190:1, 44-53

This article published in December 2023 in the European Journal of Endocrinology aimed to investigate the association between the prescription of metformin and adverse outcomes in patients suffering from post-pancreatitis diabetes mellitus. The authors begin by outlining the incidence and effect of post-pancreatitis diabetes mellitus as a common complication in patients with acute or chronic pancreatitis and its link with adverse events. Research and some guidelines suggest that metformin is the drug of choice for patients suffering this form of diabetes, but the authors acknowledge the limited evidence around the risk/benefit in this population of patients, so this study aims to add to the body of evidence around this intervention. The study was pharmaco-epidemiological in nature and was conducted in Denmark looking at a nationwide population approach including adults who had post-pancreatitis diabetes mellitus or type 2 diabetes during the timeframe of 2009- 2018. The post-pancreatitis diabetes mellitus participants were sub categorised into acute and chronic subtypes. The associations of interest were links between metformin use and hypoglycaemia, major adverse cardiovascular events, and all-cause mortality. Appropriate statistical analysis was applied to the yielded data. After application of inclusion and exclusion criteria a total of 222 337 participants were identified with 3781 having new onset type 2 diabetes mellitus and the remainder as having post-pancreatitis diabetes mellitus, with 61% of those being acute in nature and 39% classified as chronic. The study found that those patients treated with metformin showed a lesser risk of adverse events, specifically of severe hypoglycaemia but also of major adverse cardiovascular events and all-cause mortality. They conclude that metformin use should be supported in this population of patients based on this and previous research and guidelines.

<https://academic.oup.com/ejendo/article-abstract/190/1/44/7491713>

Conclusion

There are many types of diabetes mellitus and many triggers and treatment options and professional involved in their care. These articles explore specific areas but highlight the need for knowledgeable and specialist prescribers who are up to date with research and aware of the importance of guidelines for prescribing in this arena. Diabetes prescribing is a well-researched area and many articles appear each month making CPD in this area time consuming and highlights the need for systematic reviews and meta-analysis to help the professional prescribing population evaluate the best available evidence.