

Comparison of Oral Nutritional Supplement Prescription Patterns among Non-Dialysis Chronic Kidney Disease and Hemodialysis Patients in BC



How you want to be treated.

AUTHORS

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INTRODUCTION

Patients with chronic kidney disease (CKD) are at high nutritional risk resulting from complications of chronic disease and its associated co-morbidities. In turn, they are at higher risk for morbidity and mortality as compared to the general population. Oral nutritional supplements (ONS) are often recommended following nutritional counselling to help mitigate protein energy wasting and prevent worsening of malnutrition. As patients progress to dialysis, nutrition status often declines further due to increased metabolic needs and decreased appetite associated with uremia.

In British Columbia, the Provincial Renal Agency's Nutritional Supplement Policy sets out specific criteria for ONS financial coverage and prescription for patients with CKD, under the stewardship of registered dietitians.

OBJECTIVES

1. To characterize nutritional status and ONS prescription patterns in patients with non-dialysis CKD enrolled in a Kidney Care Clinic (KCC) as compared to patients on hemodialysis (HD)
2. To describe ONS longitudinal prescription patterns and usage in patients with non-dialysis CKD as compared to those on HD

METHODS

We conducted an analysis of non-dialysis CKD patients who entered KCC between January 2013 to December 2018 ($n = 15,859$) and HD patients who initiated dialysis between January 2010-December 2019 ($n = 6,929$). We compared baseline biochemical parameters among patients receiving at least 1 ONS prescription within 1 year of entry to KCC (for the non-dialysis CKD cohort) or within 1 year of HD initiation (for the incident HD cohort), vs. patients not prescribed ONS (Wilcoxon Signed Rank Test and Chi Square Test). We described longitudinal ONS prescription patterns in both cohorts over 3 years using Sankey plots. In both cohorts, multivariable logistic regression was used to assess differences in prescription by region, adjusted for baseline patient demographics and comorbidities.

RESULTS

In the non-dialysis CKD cohort, at baseline, patients prescribed ONS were older, with lower eGFR, BMI, and had more metabolic complications of CKD compared to patients not prescribed ONS. The incidence of ONS use was 9% (N=1389) over the 1st year following KCC follow-up and overall ONS use remained fairly constant over 3 years.

1. In the incident HD cohort, at baseline, patients prescribed ONS were older, more likely to start dialysis as an inpatient, and to have lower body weight, albumin, creatinine index, hemoglobin, and higher iPTH compared with patients not taking ONS. Over the first year of HD, 39% (N=2712) were prescribed ONS, which rose slightly to 42% in years 2 and 3 of follow-up.
2. Among patients receiving ONS, HD patients had a greater proportion of patients with frequent ONS prescriptions (3 or more prescriptions/year) compared with non-dialysis CKD patients.

Among non-dialysis CKD patients, there was regional variation in ONS prescription and significantly fewer ONS prescriptions in Northern Health Authority (OR 0.51, 95% CI 0.30-0.87). However, in the HD patients, no significant difference in prescription patterns were noted among health authorities.

CONCLUSION

This is the first Canadian study to describe the prevalence and determinants of ONS use in patients with CKD using a large provincial database. The increased use of ONS in the HD cohort compared with the non-dialysis CKD cohort would be predicted, since patients on dialysis are more likely to be malnourished as compared to those CKD non-dialysis CKD patients.

Regional variations in ONS prescriptions were present among non-dialysis CKD patients but not among HD patients. One possible explanation is that with fewer dietitians available in the Northern Health Authority, they are more likely to triage high nutritional risk dialysis patients and offer nutritional care to this group more often as compared to the pre-dialysis cohort, who is more likely to be nutritional stable.

Further studies are needed to better understand the factors that impact ONS use on outcomes, dietitian resource allocation and how they relate to patient outcomes, and pharmaco-economic evaluation of the Nutrition Supplement Policy to ensure its sustainability and replicability nation-wide.