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COMMENTARY

NEPHROLOGY WILEY

Commentary on the 2020 update of the KDOQI clinical practice guideline for nutrition in chronic kidney disease

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Dietary modification is an important component in the management of Chronic Kidney Disease (CKD).[1] An appropriate diet can slow disease progression,[2,3] reduce CKD complications,[4] and increase survival.[5,6] The release of new guidance has been eagerly awaited by many clinicians as the previous versions had not been updated since 2000.[7] The intent of this commentary is to consider some of the key recommendations in the Australian and New Zealand context and to highlight areas for potential local adaptation.

1 | GUIDELINE SUMMARY

The 2020 update consists of six chapters with 75 recommendations.[8] These guidelines cover nutrition assessment, medical nutrition therapy, dietary protein and energy intake, nutritional supplementation and micronutrients. Importantly, the guidelines cover management across stages of CKD as well as specific recommendations for those undertaking maintenance haemodialysis or peritoneal dialysis, and those post-transplant. The guidelines are based on the best available evidence to April 2017 and for those recommendations based on consensus, evidence was reviewed until August 2018. This represents critical review of more than 11 000 individual studies. A summary of the nutrient recommendations for the Australian and New Zealand (ANZ) context is provided in Table S1. Assessment of the methodological rigour and transparency of the guideline using the AGREE II tool[9] are shown in Supporting information. The overall score was rated at 69%, with reduced scores due to lack of stakeholder engagement and minimal discussion regarding implementation.

2 | COMMENTARY

2.1 | Protein intake

The new recommendations for protein intake contain a major departure from previous advice. The recommendations are summarized in

List of CARI Guideline Group Investigators is provided in the Acknowledgements section.

TABLE 1 Protein recommendations in the KDOQI 2020 guideline for nutrition in CKD with level of evidence grading[11]

CKD stage 3–5 (metabolically stable)	CKD stage 3–5 and diabetes (metabolically stable)	Dialysis (metabolically stable)
0.55–0.60 g/kg/day ideal body weight	0.6–0.8 g/kg/day ideal body weight	1–1.2 g/kg/day ideal body weight
Evidence level: 1A to reduce risk of ESKD/death; 2C to improve quality of life	Evidence level: OPINION	HD no diabetes: Evidence level 1C PD no diabetes: OPINION Dialysis with diabetes: OPINION

Table 1. For adults with CKD stage 3–5 who are metabolically stable, protein should be restricted to 0.55–0.60 g/kg ideal body weight per day. It is slightly higher for those with diabetes (0.6–0.8 g/kg ideal body weight). Reduction of intake to these levels is recommended due to the negative side effects on kidney health (accumulation of urea and other uremic toxins and increased kidney hyperfiltration). Additional benefits to kidney health can be achieved using ketoacid analogue supplements but these are not available readily or registered with the Therapeutic Goods Administration[10] in Australia or the Pharmaceutical Management Agency (Pharmac) in New Zealand.

These recommendations are controversial and are in contrast to a 2020 Cochrane review[12] which found that, in non-diabetic adults, a low protein intake (0.5–0.6 g/kg) may make little difference to the number of people who reached kidney failure compared to a normal protein intake (≥0.8 g/kg). The 2013 CARI Guidelines for Early CKD recommend 0.75–1.0 g/kg/day with adequate energy[13] and the 2020 KDIGO guidelines for diabetes in CKD suggest 0.8 g/kg.[14]

The challenge for Australasian clinicians is that any changes to protein intake must be carefully managed to meet overall energy needs. Conveying the message to patients to significantly reduce protein intake without attention to adequate calories may result in unintentional weight loss, malnutrition and hyperkalaemia. In accordance with recent Cochrane guidance on low protein diets for those with CKD,[12] we suggest consideration also be given to the potentially negative impacts of intensive protein restrictions on patient quality of life. In the absence of high-certainty evidence to support intensive protein restrictions in patients with CKD 3–5 not requiring dialysis and considering the potential harms, we recommend taking an individualized approach to protein restriction taking into account the potential impact on quality of life and nutritional needs.

2.2 | Potassium, phosphorus and sodium intake

It is now recommended that dietary potassium and phosphorus intake should be individualized in adults with CKD3-5D and post-transplant with hyperkalaemia. This is far less prescriptive than previous dietary guidelines.[15] The bioavailability of potassium and phosphorus in fruits, vegetables, wholegrain breads and cereals, legumes and nuts is substantially lower than previously thought,[16–18] and these foods need not be restricted as they offer other benefits that are beneficial to people with CKD. Clinicians should actively investigate other factors that contribute to hyperkalaemia before reducing dietary potassium intake. These factors include constipation, inadequate insulin, untreated metabolic acidosis, inadequate dialysis, and medications.[19,20] If hyperkalaemia cannot be reversed, then sensible dietary restriction is encouraged.

Regarding phosphorus intake, the new guideline also recommends reducing intake of phosphorus containing additives from processed foods. In the ANZ context, like potassium, phosphorus does not need to be declared on food labels and contributes significantly to overall dietary phosphorus intake.[21] Given the increasing popularity of plant-based diets, emphasis on low-bioavailable sources of phosphate, such as those from plant foods, would result in reduced bioavailable phosphate compared to animal-based protein sources. Additional suggested strategies, such as boiling meat prior to eating, can result in an approximate 50% reduction of phosphorus content.[22] This practice is common in New Zealand ('boil ups') and should be encouraged to support those with CKD.

Recommendations for sodium intake remain unchanged, and less than 2300 mg (100 mmol) of sodium per day is advised for all with CKD.

2.3 | Dietary patterns

The new guideline recommends a Mediterranean diet and high fruit and vegetable diet for those with CKD to improve lipid profile, decrease body weight and blood pressure, and reduce net acid production. Patients will benefit from individualized advice to adopt this dietary pattern and accommodate serum potassium and protein needs. Dietary education resources for patients should be updated to reflect these new recommendations and counter misinformation.

2.4 | Identifying patients who need nutritional intervention

The new guidelines recommend nutrition screening occur at least biannually for adults with CKD3-5D or post-transplantation[8] to identify risk of Protein Energy Wasting (PEW). However, no gold standard screening tool is available. Clinicians may wish to consider use of the Renal Nutrition Screening Tool (R-NST).[23] This tool has good sensitivity (97%) and specificity (74%) to detect risk of undernutrition and was developed in New Zealand.

2.5 | Nutrition assessment

A comprehensive nutrition assessment is also encouraged in adults with CKD3-5D within 90 days of commencing dialysis, annually

or when indicated following screening or provider referral. These recommendations will be challenging for many units in ANZ as dietetic staffing is inadequate or absent.[24–26]

The 7-point Subjective Global Assessment is now recommended as the preferred tool for nutrition assessment due to the robust evidence base, particularly for assessment of body composition in dialysis cohorts.[27] The 7-point SGA does not include an extensive list of symptoms that are known to impact patients with CKD at the later stages. As a result, clinicians may still wish to utilize tools, such as the IPOS-renal,[28] to establish the degree and severity of symptom burden.

3 | FUTURE DIRECTIONS AND CONCLUSION

There is a notable absence of information for clinicians on the dietary management of patients undertaking conservative management (also referred to as supportive care[29]). We suggest that health professionals working with these patients refer to important guidance published to assist with diet and symptom management.[30–32]

To conclude this commentary, the KDOQI nutrition guidelines represent an important discussion of nutrient based guidance as well as food-based recommendations. While input from consumers into these guidelines is lacking, these guidelines are an important step forward and may reduce the challenge and complexity for patients of adhering to the diet for kidney disease.[33,34] Future guidelines are likely to include recommendations regarding plant-based protein[35] and eating patterns[36,37] but these studies were published after the guidelines evidence review process. Based on these guidelines, it would be reasonable for ANZ health professionals to encourage all patients with CKD to improve fruit and vegetable intake, focus on plant-based proteins, reduce added salt and processed foods. Based on recent evidence,[12] we recommend an individualized, less stringent approach to protein restriction for non-diabetic patients with CKD 3–5.

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SUPPORTING INFORMATION

Additional supporting information may be found in the online version of the article at the publisher's website.

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