

"Gazing into the crystal ball of mortality prediction in conservative kidney care": Correspondence

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Dear Editor,

We refer to the *Annals* article, "Gazing into the crystal ball of mortality prediction in conservative kidney care", which highlights the paucity of data contextualising mortality predictors within Southeast Asian populations and the call to embrace adoption of conservative kidney management (CKM).¹ In this letter, we would like to present our perspective on CKM, as a fourth modality of kidney replacement therapy (KRT), set against the backdrop of the current economic crisis of dialysis care.

We conducted a retrospective cohort study of all patients aged over 70 years with end-stage kidney disease (ESKD) in Brunei who received either KRT or CKM between 2018 and 2023. Data from the Brunei Dialysis and Transplant Registry included sex, race, comorbidities, age, KRT initiation dates, baseline biochemical markers, and outcomes such as survival, hospitalisations, place of death, cardiac arrests, and intensive care admissions. The study aimed to report survival rates and compare demographic and clinical differences between groups. The KRT group included patients starting dialysis electively or acutely, while the CKM group included patients enrolled in the CKM clinic. Both groups of patients were selected from the national pre-dialysis clinic to either start dialysis or be referred for CKM. Patients with metastatic cancer or severe dementia were excluded from both groups in this analysis.

Statistical analyses were conducted using R version 4.6.0 (R Foundation for Statistical Computing, Vienna, Austria). Independent t-test was used to compare means between the 2 groups while Pearson's chi-squared test was used to compare associations between categorical variables. The Kaplan-Meier method was used to estimate patient survival and the log-rank (Mantel-Cox) test to compare the curves. Results were considered statistically significant if the *P* value was less than 0.05.

Table 1 summarises the demographic and clinical characteristics of both groups. In total, 182 patients fulfilled the inclusion criteria, of whom 160 received KRT and 22 underwent CKM. Within the KRT cohort, 104 patients (65%) commenced haemodialysis acutely, of whom 41 (26%) required intensive care treatment. Only 29 patients (18%) had a functioning arteriovenous fistula at the time of first dialysis, while 2 patients were initiated directly onto peritoneal dialysis. Compared with the CKM group, the KRT group was significantly younger with higher rates of diabetes and coronary artery disease, but had higher baseline serum creatinine, phosphate, and lower albumin levels.

By the end of the follow-up period, 55% (n=88) in the KRT group and all 22 patients in the CKM group had died, corresponding to a 45% relative risk reduction in mortality in the KRT group. The mean survival time was 16.69 ± 15.05 months in the KRT group compared with 7.31 ± 8.09 months in the CKM group. The 6-, 12-, 18-, and 24-month survival rates were 82%, 63%, 56%, and 43%, respectively, for patients receiving KRT, compared with 55%, 27%, 23%, and 0% for those managed with CKM. Among all patients, only KRT and the age group of 70–74 years demonstrated significantly better survival. Among patients who died, the KRT group experienced a significantly higher number of hospitalisations, were less likely to die at home and more likely to experience hospital-activated cardiac arrests.

Our study demonstrated that KRT confers a significant survival benefit compared with CKM, despite the KRT group's lower baseline estimated glomerular filtration rate and higher burden of comorbidities. Not surprisingly, existing literature similarly favours a survival advantage among patients who commence dialysis. Reindl-Schwaighofer et al. compared 8622 elderly patients receiving haemodialysis with 174 patients managed with CKM, and found that haemodialysis was associated with a significantly

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Table 1. Comparison of demographic and clinical factors between KRT and CKM groups in Brunei Darussalam (2018–2023).

	KRT group (n=160)	CKM group (n=22)	P value
Mean age (years), mean±SD	75.59±4.46	83.50±4.19	<0.05
Median age (years)	75	82	NA
Sex: male, no. (%)	85 (53)	10 (45)	0.07
Sex: female, no. (%)	75 (47)	12 (55)	
Race: Malay, no. (%)	137 (86)	19 (86)	0.85
Race: Chinese, no. (%)	23 (14)	3 (14)	
Comorbidities: DM, no. (%)	135 (84)	11 (50)	<0.05
Comorbidities: Hypertension, no. (%)	157 (98)	22 (100)	0.19
Comorbidities: CAD, no. (%)	56 (35)	3 (14)	<0.05
Creatinine (μmol/L), mean±SD	981.7±356.1	595.9±240.4	<0.05
eGFR (mL/min), mean±SD	5.30±5.87	7.91±3.25	<0.05
Haemoglobin (g/dL), mean±SD	9.21±1.62	9.38±1.75	0.65
Albumin (g/L), mean±SD	30.24±5.75	33.95±6.28	<0.05
Phosphate (mmol/L), mean±SD	2.20±0.74	1.46±0.41	<0.05
6-month survival (%)	82	55	NA
12-month survival (%)	63	27	NA
18-month survival (%)	56	23	NA
24-month survival (%)	43	0	NA
Overall survival (months), mean±SD	16.69±15.05	7.31±8.09	<0.05
Acute dialysis, no. (%)	104 (65)	0 (0)	<0.05
Elective dialysis, no. (%)	56 (35)	2 (11) ^a	<0.05
Using AVF on first dialysis, no. (%)	29 (18)	0 (0)	NA
ICU admission, no. (%)	41 (26)	0 (0)	<0.05
Number of hospitalisations, mean±SD	4.71±3.81	1.70±0.75	<0.05
Dying at home (among those who died), no. (%)	12/88 (14)	8/22 (36)	<0.05
Recorded hospital cardiac arrests (among those who died), no. (%)	15/88 (17)	0/22 (0)	<0.05

AVF: arteriovenous fistula; CAD: coronary artery disease; CKM: conservative kidney management; DM: diabetes mellitus; eGFR: estimated glomerular filtration rate; KRT: kidney replacement therapy; NA: not applicable; SD: standard deviation

^a Two patients had a few sessions of dialysis as part of short-term palliative measures.

lower risk of death (hazard ratio [HR] 0.23, 95% confidence interval [CI] 0.18–0.29; $P<0.001$) compared with CKM.² Likewise, a Southeast Asian cohort from Thailand involving 669 KRT patients and 50 CKM patients reported a mortality HR of 4.97 in the CKM group.³

Though we did not directly assess quality of life, our study uniquely evaluated surrogate indicators—demonstrating fewer hospital admissions, fewer acute

procedural interventions, fewer “unplanned” deaths, and more time spent at home in the CKM cohort. These outcomes may better reflect local Asian religious-cultural priorities surrounding dignity and the sanctity of death. Our findings are consistent with those of Hussain et al.,⁴ who likewise observed that patients receiving KRT were more likely to require acute hospital admissions and to die in hospital. Carson et al. also reported a significantly greater hospitalisation burden

in the KRT group, with patients spending an average of 6.9% of their remaining days as inpatients due to dialysis-related complications, compared with 4.3% in the CKM group.⁵

But, at what cost? This rhetorical question cannot be meaningfully examined through a purely financial lens, especially in Brunei and similar settings where healthcare is free for citizens and permanent residents. Although this removes direct expenses for patients and families, it may foster delayed decision-making about dialysis until late-stage disease. Consequently, many patients present urgently with severe ESKD complications such as fluid overload, metabolic acidosis, and hyperkalaemia, requiring immediate intervention. After stabilisation, some continue dialysis due to the lack of cost barriers, gratitude for life-saving treatment, and early improvements in well-being. However, they may not yet understand the lifelong demands and burdens of ongoing dialysis. The benefit of foresight, informed by the experience of seasoned clinicians, could ideally help guide such vulnerable patients towards a holistic CKM approach.

The 2026 World Kidney Day theme, Kidney Health for All: Caring for People, Protecting the Planet, highlighted the high financial costs, environmental impact, and reduced quality of life often linked to haemodialysis.⁶ It supported practical CKM, especially for elderly and frail patients, by promoting care aligned with personal values and wishes, and reducing unnecessary family, economic, and environmental burdens.

Longevity without dignity is an empty victory. Our study concludes that although KRT increases longevity, it often imposes a heavily encumbered lifestyle with significant psychosocial and medical costs. CKM may offer a meaningful alternative for selected elderly patients by preserving dignity rather than prolonging life. We summarise our position with the principle that medicine should seek to “add life to years rather than add years to life.”

Ethics statement

The study was approved by the Universiti Brunei Darussalam Institutional Health and Research Ethics Committee (Reference: UBD/PAPRSBIHSREC/2022/11).

Declaration

The authors declare that they have no affiliations with or involvement in any organisation or entity with any financial interest in the subject matter or materials discussed in this manuscript. There is no conflict of interest or funding to declare.

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Authors' reply

Dear Editor,

We thank the authors for their interest in our editorial and for sharing their experience and outcomes following the implementation of a conservative kidney management (CKM) clinic. We believe it is important to continue to increase awareness and acceptance of CKM as a management strategy for kidney failure, and we commend the authors for contributing to this ongoing conversation.

The authors' observations that patients who were initiated on dialysis had a survival benefit but increased hospitalisations and were more likely to die in hospital are in keeping with the findings in a recent systematic review.¹ Given that a randomised controlled trial would be both methodologically and ethically challenging, well-conducted observational studies with defined outcomes and patient-reported outcome measures will most likely inform the future evidence base guiding shared decision-making regarding CKM versus dialysis.

The authors highlighted that the costs of dialysis and CKM cannot be examined solely from a financial perspective, given the variation in healthcare financing structures and approaches across healthcare systems. While this is certainly true regarding what the patient pays, there have been reports evaluating overall cost differences between dialysis and CKM. Considering the costs associated with outpatient clinic visits, investigations, dialysis treatments, and inpatient hospitalisation, Verberne et al. found that the annual cost for patients aged 70 years and above who opted

for CKM was approximately 20% of that for patients who chose dialysis.² Beyond cost, the same group also evaluated value, and found that CKM achieved similar survival and health-related quality of life outcomes with lower treatment burden and treatment costs, especially in the oldest patients and those with severe comorbidity.³

However, costs and value represent but 1 component of the decision-making framework. For the individual patient, the decision between dialysis and CKM is shaped not only by values but also by perceived survival benefits, symptom burden, quality of life, caregiver burden, and religious or cultural beliefs. A qualitative study conducted with patients recruited from 9 renal units in England found that patients opting for different treatments held contrasting beliefs about the potential advantages of dialysis.⁴ Some dialysis and predialysis patients believed that dialysis could extend their lives and offer them a better quality of life or help them maintain their current quality of life. The prioritisation of survival, even with substantial symptom burden and reduced independence, is an individual choice that transcends financial considerations. Nevertheless, many studies have reported that healthcare providers significantly influence the shared decision-making process, particularly in how CKM is presented and how the patient's overall prognosis is communicated. Patients often perceive a lack of choice as the reason for starting dialysis.⁵ Decision-making is often shaped by differing perspectives among patients, caregivers, and physicians, with the "right decision" seldom perfectly aligned among stakeholders.⁶ While structured frameworks, such as MIND-IT, have been proposed to guide this process,⁷ meaningful shared decision-making ultimately requires something less easily protocolised: time—not merely 15 minutes within the confines of a clinical consultation, but time afforded across multiple dedicated conversations, to unpack complex interventions, understand individual values, and arrive at decisions that are both informed and deeply human. Clinicians need to be trained and spend time presenting kidney failure treatment options accurately and in a balanced manner so that patients appreciate and understand the uncertainties and trade-offs between dialysis and CKM, as highlighted in the KDIGO 2024 Guideline for the Evaluation and Management of CKD.^{8,9} Undergirding this process are the principles of respect and autonomy, where the focus should be on facilitating informed, values-concordant decision-making rather than directing patients towards a predetermined treatment pathway.

The authors' findings are a timely addition to the emerging body of literature on CKM outcomes. We reiterate our call for better-conducted studies,

including patient-reported and caregiver-centred outcomes, to refine the evidence base underpinning shared decision-making in kidney failure care. Equally important will be continued efforts to ensure that treatment discussions are balanced, individualised, and grounded in respect for patient autonomy, recognising that the "best" treatment may differ according to each patient's goals, priorities, and lived experience.

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