Introduction: Reliable methods to identify risks early and predict major adverse kidney events (MAKE) in drug-induced acute kidney injury (AKI) are needed. We hypothesised that elevated urine biomarkers of kidney tubular injury in patients with nephrotoxicity could detect subclinical AKI and predict long-term MAKE.
Methods: We recruited patients admitted to a single tertiary healthcare institution in Singapore from February 2015 to February 2022 who received antimicrobials with nephrotoxic potential, including Aminoglycosides, Vancomycin, Amphotericin B, Polymyxins, Forscanet or Ganciclovir for ≥ 5 days. We measured urinary Clusterin and MCP-1 using ELISA in patients within three days of developing AKI (or final day of nephrotoxic exposure). We analysed the predictive performance of these biomarkers for MAKE, a composite of death, initiation of renal replacement therapy, or doubling of creatinine by one year.

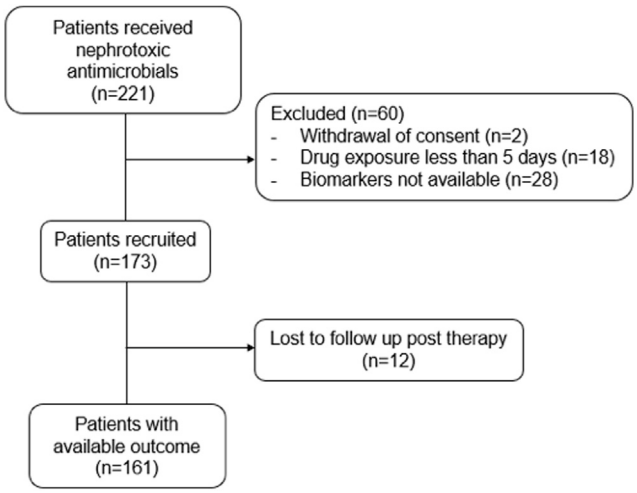

Figure 1. Flow chart of the study cohort.

Results: We studied a cohort of 161 patients (68% male, mean age 56 years, median eGFR 102 ml/min/1.73m^2) with 48% hypertension, 35% diabetes, 39% malignancy as co-morbidities, and median nephrotoxic exposure of 14 days. Of these, 63% received vancomycin and 22% aminoglycosides. AKI developed in 26% of the patients, and 43% experienced MAKE. Biomarker levels were significantly higher (<0.001) in MAKE cases versus none: Clusterin (median 238.6ng/mL, IQR 400.2ng/mL vs. 63.5ng/mL, IQR 167.4ng/mL) and MCP-1 (median 0.63ng/mL, IQR 0.91ng/mL vs. 0.19ng/mL, IQR 0.36ng/mL). The AUROCs for predicting MAKE for Clusterin, MCP-1, and combined were 0.68, 0.69 and 0.71, respectively; the corresponding AUROC was 0.76 when both biomarkers were analysed with initial AKI, with a net reclassification index of 0.078, showing improved prediction. Patients had a stepwise increased MAKE incidence with and without elevated biomarkers and AKI.

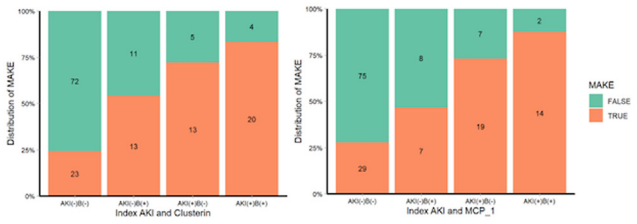

Figure 2. Stepwise increase in the accuracy of MAKE prediction is observed when AKI status is combined with biomarker positivity (with Clusterin set at 250ng/mL and MCP-1 set at 1ng/mL). MAKE - Major Adverse Kidney Events; AKI - Acute Kidney Injury.

We derived an ideal cut-off of Clusterin (>280ng/mL) and MCP-1 (>0.4ng/mL) for predicting MAKE in 50 randomly selected patients of the cohort and tested its performance on the remaining patients (n=111), and an independent set of patients (n=28) who received platinum-based chemotherapy.

Table 1. Performance Metrics of Urinary Biomarkers for MAKE Prediction in the Validation Cohort (n=111) and Independent Cohort (n=28)

	Precision	Sensitivity	Specificity	Accuracy
Internal Validation Cohort (n=111)				
Clusterin>280ng/mL **AND** MCP1>0.4ng/mL	0.65	0.32	0.88	0.64
Clusterin>280ng/mL or AKI	0.70	0.68	0.78	0.74
MCP1>0.4ng/mL or AKI	0.67	0.77	0.72	0.74
Independent Cohort (n=28)				
Clusterin>280ng/mL **AND** MCP1>0.4ng/mL	0.64	0.70	0.76	0.74
Clusterin>280ng/mL or AKI	0.47	0.70	0.53	0.59
MCP1>0.4ng/mL or AKI	0.57	0.80	0.65	0.70

MAKE - Major Adverse Kidney Events; MCP1 - Monocyte Chemoattractant Protein -1; AKI - Acute Kidney Injury.

Conclusions: Clusterin and MCP-1 predict MAKE in patients following nephrotoxicity with enhanced accuracy beyond the presence of initial AKI.

This abstract has been revised from the previous submission to the 14th Singapore Society of Nephrology (SSN) Annual Scientific Meeting.

I have no potential conflict of interest to disclose.

I did not use generative AI and AI-assisted technologies in the writing process.

WCN25-1924

IS MULTI-ORGAN SUPPORT ALWAYS A TRANSPLANT BRIDGING TREATMENT IN CIRRHOSIS, OR DO WE HAVE TO KNOW WHEN TO STOP?: CASE REPORT

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Introduction: Liver cirrhosis is a common pathology in the mexican population, its main origins are due to NASH or associated with alcohol consumption. Patients with cirrhosis usually have liver disease with failure of other organs such as the kidney and heart. Although the treatment of hepatorenal syndrome seeks reversibility at all costs, it is a reality that the definitive treatment is a liver transplant when reversibility is no longer possible. Management with RRT or liver support has become an increasingly common option as a transplant bridging therapy. Unfortunately, the reality of our country does not allow everyone to receive treatment. In this framework we present the following clinical case.
Methods: A 54-year-old woman diagnosed with cirrhosis, who has completed the liver transplant protocol, goes to the emergency room of our hospital due to an altered state of consciousness and dyspnea. At PE: Tachycardic, hypotensive, polypnea, with severe generalized jaundice with tense ascites. It was admitted to hospital, with the purpose of stabilizing and improving general conditions to continue in the liver transplant protocol. At the moment she presents CHILD-C, MELD 40 scores, with direct hyperbilirubinemia of 23.8 and total bilirrubin of 33.2, anuric with elevated creatinine of 4.2 and BUN 99, and severe metabolic acidosis. Therefore, it was referred to nephrology to evaluate RRT with CRRT variant with liver support therapy as TPE+DPMAS. However, in the next 2 hours, digestive tract bleeding and

hemodynamic deterioration were evident, informing the family that a transfer to the ICU and urgent endoscopy was required. The family decides to stop intervention management, taking her home with palliative care. Medically, it is discussed whether we are facing futile treatment and whether the transplant bridging window had closed.
Results: Patients with terminal organ failure as the liver, lung or heart require a multidisciplinary approach and assessment protocols to determine the feasibility and success of transplantation as a curative treatment. The dual plasma molecular adsorption system (DPMAS) has emerged as a relevant option for transplant bridging therapy, sadly many patients reach advanced stages of the disease, which reduces the feasibility of implementing this advanced therapy in a timely manner.
Conclusions: Nephrology requires pre and post involvement and also during the transplant, so it is important to know the indications for ECOS (Extracorporeal organ support) with the CRRT platform, a niche in which today the Liver support has evolved significantly.

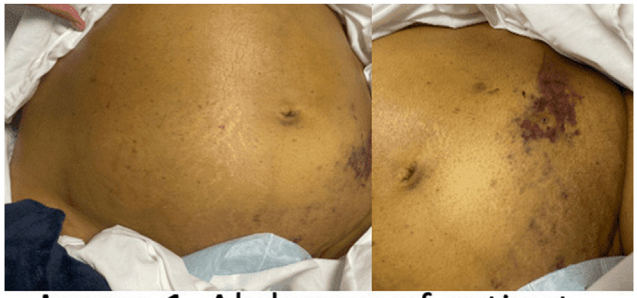

Image 1. Abdomen of patient with post-paracentesis ascites.

Image 2. Dual Plasma Molecular Adsorption System (DPMAS) equipment.

I have no potential conflict of interest to disclose.
I did not use generative AI and AI-assisted technologies in the writing process.

WCN25-2336

IATROGENIC PERIOPERATIVE HYPERVOLEMIA: A NOVEL UNRECOGNIZED ETIOLOGY OF DELAYED RENAL ALLOGRAFT FUNCTION - TWO CASE SERIES

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Introduction: Forward heart failure and low cardiac output alone do not define the degree of renal dysfunction in cardiorenal syndrome. The term "congestive renal failure" was coined in 2012 by Ross to depict the role of renal venous hypertension in type 1 acute cardiorenal syndrome. This syndrome has also been termed congestive nephropathy (CN). Our understanding of congestive nephropathy continues to evolve: In 2024, we still do not know or fully understand the pathophysiology of CN. Furthermore, we do not have any known reports of CN, post-transplantation, in renal allografts. We present two cases of delayed graft function post-transplantation, and we hypothesize that iatrogenic perioperative hypervolemia and subsequent congestive renal allograft nephropathy represented a new unrecognized cause of delayed graft function.
Methods: Two case series are herein described.
Results: Case I

A 48-yo female with ESRD from Fabry's disease received a deceased donor kidney transplant in late April 2024. There was evidence of hypervolemia and fluid retention with minimal urine output despite IV Furosemide + IV Chlorothiazide infusions. Subsequently, urine output improved with combination IV diuretics. She later experienced an acute rejection episode that responded well to Corticosteroids and Thymoglobulin, 18 days post-transplantation. Latest creatinine, 4 months' post-transplantation, was 1.50 mg/dL.

Case II

A 63-yo female with ESRD from polycystic kidney disease received a deceased donor kidney in mid-August 2024. The patient continued to have slow graft function with minimal urine output and positive hypervolemia despite IV Furosemide 120 mg every 6 hours + IV Chlorothiazide 500 mg every 8 hours. With persistent hyperkalemia, unresolved hyponatremia with worsening hyperphosphatemia, she had urgent 3-hour hemodialysis treatment on post-operative day 2 with ultrafiltration. She did not need any additional hemodialysis treatment. Latest creatinine two weeks post-transplantation was 1.52 ng/dL.