Poster Presentation：AKI
Poster No.：C0001
Abstract Submission No.：APCN20250034

Long-Term Renal Outcomes of ACEI or ARB Use after Recovery from Dialysis-Requiring Acute Kidney Injury: A Population-Based Cohort Study

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Abstract

Background: Limited evidence suggests strategies to improve long-term outcomes in patients recovering from dialysis-requiring acute kidney injury (AKI-D). We aimed to evaluate whether the post-discharge use of angiotensin-converting enzyme inhibitor (ACEI) or angiotensin receptor blocker (ARB) is associated with improved outcomes in these patients.

Methods: This cohort study used data from Taiwan's National Health Insurance database. Between 2001 and 2014, we included hospitalized patients aged 18 years who recovered from AKI-D and survived 180 days after discharge. Patients taking ACEI/ARB within 180 days of discharge were matched 1:1 to nonusers using propensity score methods. The outcomes of interest were all-cause mortality and end-stage renal disease (ESRD). We used Cox proportional hazards regression models to analyze the associations between ACEI/ARB use and the outcomes.

Results: A total of 8,463 matched pairs of ACEI/ARB users and nonusers were analyzed. After a median follow-up of 4 years, post-discharge ACEI/ARB was associated with lower all-cause mortality (hazard ratio (HR), 0.95; 95% confidence interval (CI), 0.90–1.00; p = 0.04), but not with ESRD. When considering the dispensing timing, ACEI/ARB use within 90 days of discharge, as compared with nonusers, was associated with lower risks for all-cause mortality (HR, 0.93; 95% CI, 0.88–0.98; p = 0.01) and ESRD (HR, 0.92;95% CI, 0.85–0.99; p = 0.02).

Conclusion: Our results suggest the potential benefits of post-discharge use of ACEI/ARB in patients surviving AKI-D, plausibly in the window of 3 months after discharge.

Keywords：acute kidney injury, kidney failure, renal dialysis, angiotensin-converting enzyme inhibitors, angiotensin receptor antagonists

Poster Presentation：AKI
Poster No.：C0002
Abstract Submission No.：APCN20250051

Single-Cell RNA Sequencing Identifies Distinct Stage-Dependent Responses of Renal Endothelial Cells in Acute Kidney Injury

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Abstract

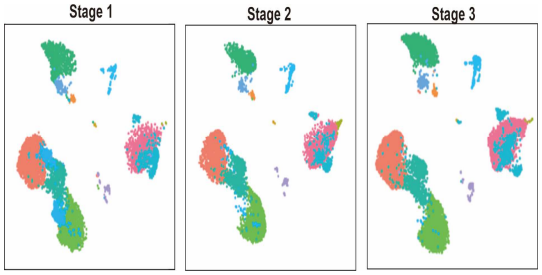
Introduction: The inflammatory response to acute kidney injury (AKI) significantly influences subsequent renal health. Renal endothelial cells (ECs) are crucial for maintaining vascular homeostasis through their roles in regulating blood flow, vascular permeability, and immune cell trafficking. This study aims to elucidate the stage-specific transcriptional responses of human renal ECs following AKI.

Methods: Single-cell RNA sequencing data were analyzed to profile human renal EC subpopulations and examine their transcriptional changes at various AKI stages. The Cell Ranger software pipeline (version 2.0) from 10X Genomics was used to analyze the scRNA-Seq data. The Seurat R package was utilized to process the UMI count matrix and to eliminate potential multiple captures. Automatic labeling of cell types within clusters derived from single-cell RNA sequencing data was performed using the scCATCH.

Results: We observed unique gene expression changes corresponding to each AKI stage. Human renal ECs exhibited alterations in genes associated with endothelial apoptosis. In stage 1 AKI, there was a notable upregulation of Havcr-1, a recognized marker of kidney injury. Stage 2 AKI samples exhibited increased expression of Vcam1, indicating endothelial activation and inflammation. In stage 3 AKI, we observed elevated levels of Icam1 and E-selectin, markers of sustained endothelial activation and leukocyte adhesion. We identified key targets associated with AKI by cross-analyzing differentially expressed genes (DEGs) observed across different stages of AKI. These genes were mainly related to cell adhesion (FDR = 1.24e-14), plasma membrane signaling receptor complex (FDR = 1.02e-11), receptor complex (FDR = 1.31e-10), integrin complex (FDR = 2.34e-10), and leukocyte migration (FDR = 4.83e-8)

Conclusion: Our study elucidates the stage-specific gene expression profiles of human renal ECs during AKI. These findings suggest that distinct molecular responses in ECs at various AKI stages could serve as potential clinical indicators or therapeutic targets, enhancing the management and prognosis of kidney diseases.

Keywords：acute kidney injury, endothelial cell, renal, severity, transcriptome



Poster Presentation：AKI
Poster No.：C0003
Abstract Submission No.：APCN20250068

Recovery or Progression: Kidney Function Trajectories and the Risk of End-stage Kidney Disease after Continuous Kidney Replacement Therapy in Sepsis-Associated Acute Kidney Injury

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Abstract

Introduction

Sepsis is a major cause of acute kidney injury (AKI). Sepsis-associated AKI (SA-AKI) requiring continuous kidney replacement therapy (CKRT) is associated with high mortality, and survivors may develop permanent kidney damage. This study investigated the risk of end-stage kidney disease (ESKD) based on kidney function trajectories in survivors of SA-AKI requiring CKRT.

Methods

From 2011 to 2024, 820 adult patients received CKRT for SA-AKI. After excluding those with preexisting ESKD on dialysis, in-hospital deaths, and missing serum creatinine (SCr) data, 119 patients were included (Figure 1).

Acute kidney disease (AKD) was defined at 7 days after CKRT initiation as follows: a ≥35% decrease in estimated glomerular filtration rate, a ≥50% increase in SCr, or the need for kidney replacement therapy. Progression was defined as meeting AKD criteria at 90 days. Patients were classified into four groups: early recovery, late progression without AKD, late recovery after AKD, and early progression (Figure 1). The primary outcome was the development of ESKD among the kidney function trajectory groups.

Results

The development of ESKD significantly differed among the groups (Figure 2A). The early recovery group showed the lowest risk (1/47, 2.1%), whereas the early progression group showed the highest (18/29, 62.1%). ESKD developed in 3/6 (50.0%) of the late progression without AKD group and 3/37 (8.1%) of the late recovery after AKD group.

In multivariable analysis (Figure 2B), the early progression group (hazard ratio [HR] 77.010, P<0.001) and the late progression without AKD group (HR 22.635, P=0.003) were significant predictors of ESKD, along with preexisting CKD and older age. Lower Glasgow Coma Scale (GCS), hemoglobin, and serum albumin were associated with early progression (Figure 2C).

Conclusions

Survivors of SA-AKI requiring CKRT exhibited distinct kidney function trajectories. The early progression group had the highest ESKD risk, associated with lower GCS, hemoglobin, and serum albumin.

Keywords：Sepsis; acute kidney injury; continuous kidney replacement therapy; acute kidney disease; end-stage kidney disease

Figure 1. Study population

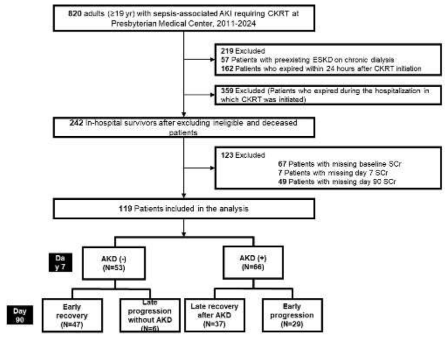
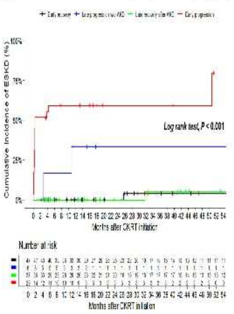


Figure 2

(A) Cumulative incidence of ESKD stratified by kidney function trajectory groups



(B) Predictors of ESKD development using Firth's penalized Cox regression

	Univariate		Multivariable	
	Hazard ratio (95% CI)	P value	Hazard ratio (95% CI)	P value
Age, yr	1.045 (1.012 – 1.078)	0.007	1.061 (1.016 – 1.108)	0.006
Male sex	0.331 (0.145 – 0.753)	0.008	0.571 (0.233 – 1.306)	0.185
Kidney function trajectory groups (vs. early recovery)				
Late progression without AKD	17.796 (2.796 – 187.494)	0.006	22.635 (3.067 – 275.504)	0.005
Late recovery after AKD	2.492 (0.406 – 23.787)	0.329	4.409 (0.666 – 47.528)	0.119
Early progression	51.446 (12.012 – 493.134)	<0.001	77.017 (15.287 – 835.191)	<0.001
Preexisting CKD	7.636 (2.609 – 22.297)	<0.001	4.051 (1.054 – 13.474)	0.005
CKRT duration, hr	1.004 (1.000 – 1.008)	0.041		
Urine output, mL (day 1)	1.000 (0.999 – 1.000)	0.098		
Hemoglobin, g/dL	0.608 (0.465 – 0.794)	<0.001		
Transfusion	2.103 (0.875 – 5.056)	0.097		
Albumin, g/dL	0.429 (0.227 – 0.809)	0.009		
Vasopressor use	0.468 (0.210 – 1.043)	0.063		
APACHE-II score	1.075 (0.989 – 1.168)	0.088		

AKD, acute kidney disease; APACHE-II, acute physiology and chronic health evaluation II; CI, confidence interval; CKD, chronic kidney disease; CKRT, continuous kidney replacement therapy

(C) Predictors of the early progression group using logistic regression

	Univariate		Multivariable	
	Odds ratio (95% CI)	P value	Odds ratio (95% CI)	P value
Age, yr	1.222 (0.988 – 1.057)	0.204	0.996 (0.957 – 1.039)	0.840
Male sex	0.542 (0.233 – 1.261)	0.155	0.957 (0.339 – 2.598)	0.922
Preexisting CKD	2.344 (0.992 – 5.537)	0.052		
Oliguria (<400 mL/day 1)	2.557 (1.280 – 6.098)	0.035	2.077 (0.735 – 5.862)	0.159
GCS score	0.838 (0.712 – 0.986)	0.033	0.815 (0.670 – 0.991)	0.242
Hemoglobin, g/dL	0.657 (0.533 – 0.837)	<0.001	0.688 (0.529 – 0.895)	0.225
Transfusion	4.167 (1.387 – 12.593)	0.014		
Albumin, g/dL	0.313 (0.148 – 0.662)	0.002	0.331 (0.135 – 0.815)	0.016
CKRT duration, hr	1.005 (1.000 – 1.010)	0.062		

CI, confidence interval; CKD, chronic kidney disease; CKRT, continuous kidney replacement therapy

Poster Presentation：AKI
Poster No.：C0004
Abstract Submission No.：APCN20250077

Membrane-based therapeutic Plasma Exchange: A Decade of Clinical Experience

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Abstract
Background:
Therapeutic plasma exchange (TPE) is an essential intervention for various neurological, immunological, and nephrological disorders and plays a critical role in the management of severely ill patients. This study aims to retrospectively analyze the clinical experience of mTPE in single center over a 10-year period to evaluate treatment patterns, outcomes, and safety.
Methods:
A retrospective analysis was conducted on patients who underwent TPE between January 2014 and December 2023. Two treatment modalities were utilized: Plasma Exchange (PE) and Double Filtration Plasmapheresis (DFPP). Treatment indications were classified according to the American Society for Apheresis (ASFA) guidelines. Data were analyzed for annual treatment volume, gender distribution, treatment frequency per patient, treatment modalities, indications, complications, and clinical outcomes.
Results:
A total of 129 patients received 508 TPE sessions. Gender distribution was balanced, with 63 females (49%) and 66 males (51%). Treatment frequency showed that 20.7% of patients received a single session, 66.4% received 2–5 sessions, and 12.9% underwent more than 5 sessions. DFPP was the predominant modality used (78.9% of treatments), compared to PE (21.1%). The primary indications included neurological disorders (42.5%), renal diseases (28.3%), immune and rheumatic conditions (10.4%), gastrointestinal diseases (11.4%), and other uncategorized conditions (7.3%). The complication rate was 5.5%, and the complete recovery rate was 55%.
Conclusion:
Therapeutic plasma exchange is a safe and effective treatment modality across a wide range of indications. Nephrologists play a pivotal role in its implementation, particularly with the use of modified TPE (mTPE), which leverages existing dialysis infrastructure and trained personnel to achieve favorable outcomes with low complication rates.

Keywords：Therapeutic plasma exchange, Plasma Exchange ,Double Filtration Plasmapheresis

Poster Presentation：AKI
Poster No.：C0005
Abstract Submission No.：APCN20250085

Tubulointerstitial Nephritis With Monotypic IgA Kappa Plasma Cells In Multiple Myeloma: A Rare Progression From Sjögren's Syndrome-Associated Nephropathy

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Abstract

Background:

Tubulointerstitial nephritis is the most common renal manifestation in primary Sjögren's syndrome, typically characterized by polytypic inflammatory cell infiltration. While monoclonal gammopathy of undetermined significance may occasionally occur in primary Sjögren's syndrome patients, progression to multiple myeloma with renal involvement through monotypic plasma cell infiltration represents an exceptionally rare paraneoplastic manifestation. This case report describes a patient with established primary Sjögren's syndrome who developed multiple myeloma presenting as tubulointerstitial nephritis with infiltration of monotypic IgA kappa plasma cells.

Case Presentation:

A 48-year-old woman had been diagnosed with primary Sjögren's syndrome seven years earlier based on sicca symptoms and positive anti-SSA/SSB antibodies. Three years prior, she developed chronic kidney disease of unclear etiology, with renal biopsy revealing tubulointerstitial nephritis characterized by predominantly lymphocytic infiltration with scattered polytypic plasma cells.

She subsequently presented with progressive fatigue, anemia (hemoglobin 8.5 g/dL), hypercalcemia (12.4 mg/dL), and deteriorating renal function (creatinine 2.56 mg/dL). Laboratory evaluation demonstrated markedly elevated serum IgA (5360 mg/dL) with decreased IgG levels. Serum protein electrophoresis and immunofixation electrophoresis confirmed an IgA kappa monoclonal protein. The serum kappa/lambda free light chain ratio was significantly elevated at 15.31. Bone marrow biopsy revealed 20-30% plasma cell infiltration with kappa light chain restriction.

Repeat renal biopsy demonstrated severe chronic tubulointerstitial nephritis with extensive monotypic plasma cell infiltration and minimal lymphocytic involvement. Tubulitis was observed in multiple tubules, predominantly composed of plasma cells. Global glomerulosclerosis was present in 13 of 18 glomeruli. Congo red staining was negative for amyloid deposition. Immunohistochemical analysis confirmed kappa light chain restriction in interstitial plasma cells. Immunofluorescence microscopy revealed no deposition of immunoglobulins, complement components, or free light chains within glomeruli or tubules. Electron microscopy demonstrated no electron-dense deposits or crystalline material.

The patient was treated with bortezomib, thalidomide, and dexamethasone, resulting in significant improvement in renal function, anemia, hypercalcemia, and immunoglobulin abnormalities, with parameters returning close to baseline levels.

Conclusion:
Multiple myeloma presenting as tubulointerstitial nephritis with monotypic IgA kappa plasma cell infiltration represents an extremely rare paraneoplastic renal manifestation. This case demonstrates the evolution of renal involvement in patients with Sjögren's syndrome from polytypic inflammatory nephritis to monotypic plasma cell infiltration with direct progression to multiple myeloma.

Keywords：Sjögren's syndrome; Tubulointerstitial nephritis; Multiple myeloma; Monotypic plasma cells; IgA kappa.

Poster Presentation：AKI
Poster No.：C0006
Abstract Submission No.：APCN20250091

A rare case of Myxedema Coma precipitating as Acute Renal Failure

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Abstract
Background: Hypothyroidism, one of the most prevalent endocrine disorders worldwide has a wide range of clinical presentations, ranging from asymptomatic to myxedema coma. It was seen because of severe and long- term untreated hypothyroidism. The term myxedema coma refers to a life- threatening form of a decompensated hypothyroid state, whose mortality is quite high from 25-60%. This is a true medical emergency.

Aim: To evaluate for endocrinological emergencies like myxedema coma in acute renal failure

Case Report: A 70-year-old male, known hypothyroid on treatment and without history of any addiction, presented with complaints of decreased urine output since one month prior to admission. He had recent history of lacunar acute ischemic stroke (NIHSS score of) 3 days prior to admission. No preceding history of fever. During hospital stay, patient had nil urine output. His lab parameters showed persistently rising serum creatinine with persistent hyperkalemia with metabolic acidosis. Patient was started on alternate day dialysis in view of no improvement in renal function. Patient developed severe hypocalcemia with raised serum parathormone levels with normal vitamin D3 levels. As patient had a one month back report with normal renal functions, possibility of acute kidney injury was kept. In hospital, patient started having fall in sensorium and neurology clearance sought for same. Patient was later put on ventilatory support due to poor GCS. Sepsis workup was negative. Thyroid profile was sent which was suggestive of severe hypothyroidism, endocrine opinion taken, and possibility of myxedema coma was kept and started on treatment with hydrocortisone and levothyroxine for same. Patient showed signs of improvement and was extubated but renal function did not improve and patient required alternate day dialysis. Patient was reintubated in view of respiratory distress, pulmonary medicine opinion consult taken and HRCT chest done which was normal. In view of tracheal injury and massive tracheal bleed later patient expired.

Results: This case adds evidence for endocrinological emergencies like myxedema coma causing acute renal failure requiring immediate attention and treatment.

Conclusion: We described a rare case of myxedema coma with atypical features associated with renal failure. Treatment should be started when a patient presents with coma and renal dysfunction with or without dialysis, even in the absence of hypotension, hypothermia, hyponatremia, and hypoxemia.

Keywords：AKI, Myxedema Coma, Endocrine Emergency

Poster Presentation：AKI
Poster No.：C0007
Abstract Submission No.：APCN20250095

Acute Kidney Injury in Leptospirosis: Can Nutritional Status Predict Severity, Need for Dialysis, and Mortality?

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Abstract

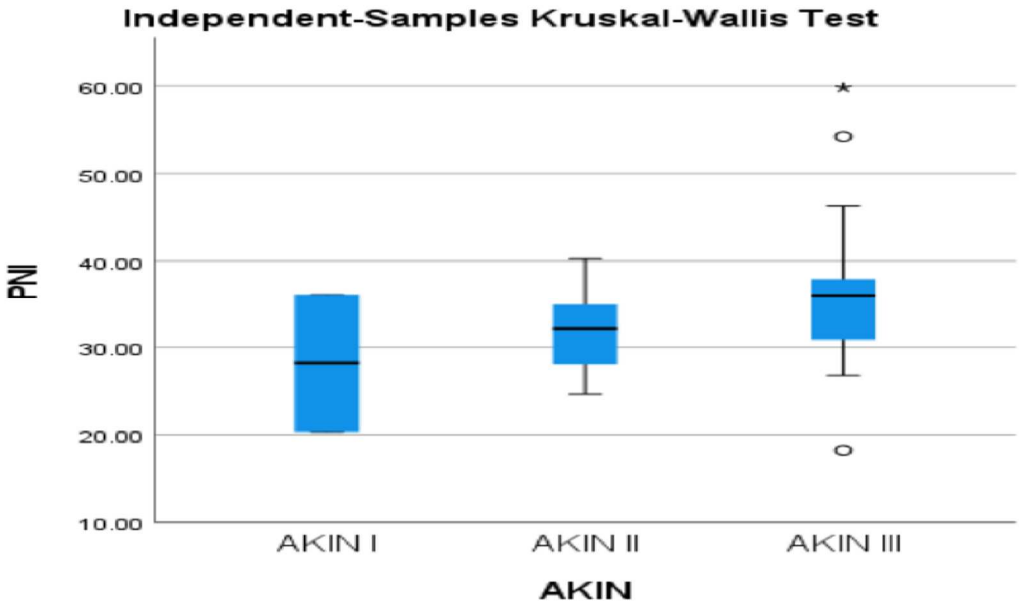
Introduction: Acute kidney injury (AKI) is associated with increased long-term morbidity and mortality. Severe leptospirosis often leads to AKI and multi-organ failure. Recent studies highlight malnutrition as a key factor influencing clinical outcomes in critical illness, with the Prognostic Nutritional Index (PNI) serving as a useful marker of nutritional and immune status. Assessing PNI may offer valuable insights for predicting severity, dialysis requirement, and mortality in leptospirosis-associated AKI.

Methods: A retrospective cohort study was conducted on leptospirosis patients admitted to Moewardi Hospital, Indonesia, between January 2022 and May 2025. Patients with elevated creatinine levels meeting AKIN criteria for AKI were classified into stages I, II, and III. Patients with missing data or pre-existing kidney dysfunction were excluded. The Prognostic Nutritional Index (PNI) was calculated using the following formula: PNI = (10 × serum albumin [g/dL]) + (0.005 × total lymphocyte count [/mm³]), as previously established to reflect both nutritional and immunological status. The Kruskal-Wallis test assessed PNI differences among AKI stages, and logistic regression evaluated its association with mortality and the need for renal replacement therapy (RRT).

Results: Among the 46 patients diagnosed with leptospirosis who met the study criteria, the mean age was 52.20 ± 12.29 years, with 91.3% being male. The cohort comprised 78.3% (36 patients) in the AKIN III group, 17.4% (8 patients) in AKIN II, and 4.3% (2 patients) in AKIN I. The mean PNI was 34.92 ± 7.41. A total of 67.4% of patients underwent hemodialysis, and 26.1% died during hospitalization. Comparative analysis demonstrated no statistically significant differences in Prognostic Nutritional Index (PNI) values across the three AKI severity groups classified by the AKIN criteria ($p = 0.165$), indicating that PNI does not reliably differentiate between varying degrees of renal impairment in leptospirosis-associated AKI. Furthermore, binary logistic regression analysis revealed no significant association between PNI and the requirement for renal replacement therapy ($p = 0.773$), nor with in-hospital mortality ($p = 0.148$).

Conclusions: PNI was not a significant predictor of AKI severity, dialysis requirement, or mortality in leptospirosis-associated AKI.

Keywords：PNI, Leptospirosis, AKI, Mortality


Independent-Samples Kruskal-Wallis Test
PNI
60.00
50.00
40.00
30.00
20.00
10.00
AKIN I
AKIN II
AKIN III
AKIN

Poster Presentation：AKI
Poster No.：C0008
Abstract Submission No.：APCN20250096

Continuous Renal Replacement Therapy in Critically Ill Patients with Acute Liver Failure

anshuman das[1]; Vivekanand Balijepalli[2]; Anand Kulkarni [3]; Anand Gupta[2]; Niranjana Rekha Paladugu[1]; R .Sujith Reddy[1]; Niharika Mulpuri[1]; SaiRam Reddy[1]

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Abstract

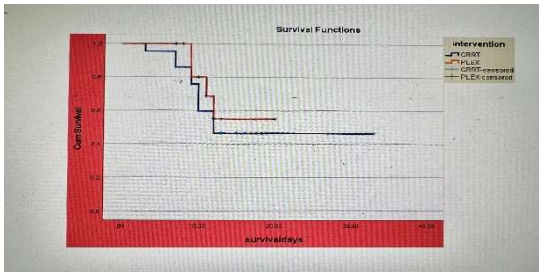
Introduction : Acute liver failure (ALF) is a rapidly progressive, life-threatening condition. Extracorporeal therapies such as continuous renal replacement therapy (CRRT) and plasma exchange (PLEX) are increasingly utilised as a bridge therapy to recovery or liver transplantation. While CRRT is more commonly preferred in Western countries due to a higher incidence of drug-induced ALF with multi-organ dysfunction, PLEX is more frequently employed in the Asian population, where viral hepatitis is a predominant etiology, and the focus is on cytokine and toxin removal. However, direct comparisons of their clinical effectiveness remain limited, especially in the Asian cohorts.

Methods: We analysed adult ALF patients treated between June 2022 and December 2024, who received CRRT or PLEX based on clinician discretion. A total of 50 patients were included: 28(56%) received CRRT (CVVHDF modality, 24–48 hours) and 22(44%) underwent PLEX (standard volume exchange). Baseline characteristics were compared using ANOVA, Kruskal–Wallis, and chi-square tests. CRRT was preferentially used in critically ill patients with shock, higher SOFA scores, hyperammonemia, or renal dysfunction, while PLEX was employed in more hemodynamically stable patients. Due to significant baseline differences, propensity score matching (PSM) was unsuccessful; adjusted binary logistic regression was used to adjust for confounders.

Results: Fifty patients were included (mean age 30±14.3 years; 56% female). Hepatitis A was the most common etiology (34%). CRRT patients had higher severity: shock (39.3% vs 13.6%, $p<0.001$), SOFA (median 11 vs 9), procalcitonin (2.99 vs 1.5 ng/mL), ammonia (160 vs 115 µmol/L), and creatinine (1.53 vs 0.80 mg/dL). PLEX led to greater 48-hour reductions in bilirubin (5.5 vs 0.9 mg/dL, $p=0.011$) and INR (1.0 vs 0.45, $p=0.012$), while CRRT showed superior ammonia clearance (38 vs 27 µmol/L, $p=0.036$).

The primary outcome of overall survival rate was comparable between groups (CRRT: 46.4%, PLEX: 54.5%). Kaplan–Meier analysis revealed no significant difference in survival time (20.2 vs 15.7 days; $p=0.481$). Intervention type was not an independent predictor on multivariate analysis (OR 0.885, 95% CI 0.094–8.308; $p=0.915$).

Conclusion: Despite baseline imbalances, CRRT and PLEX had comparable outcomes. CRRT appears effective in critically ill ALF patients, particularly when PLEX or transplant is not feasible. Larger prospective studies are warranted.



Keywords：Acute liver Failure , Continuous Renal Replacement therapy , Plasma exchange , Hyperammonemia , cytokine removal , survival analysis

Poster Presentation：AKI
Poster No.：C0009
Abstract Submission No.：APCN20250112

Reassessing Eculizumab in STEC-HUS Management: A Systematic Review of Clinical Efficacy, Neurological Impact, and Long-Term Outcomes

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Abstract

Background: Shiga toxin-producing Escherichia coli (STEC)-associated Hemolytic Uremic Syndrome (HUS) is a critical condition characterized by acute kidney injury, thrombocytopenia, and microangiopathic hemolytic anemia. In severe cases, neurological complications frequently arise, increasing the risk of long-term disability and mortality. While supportive care remains the cornerstone of management, the monoclonal antibody Eculizumab, targeting complement protein C5, has been proposed as a promising adjunct, particularly for patients with severe neurological involvement. However, its overall efficacy and long-term clinical value are still under debate. This systematic review aims to evaluate the therapeutic role of Eculizumab in STEC-HUS, with a focus on renal recovery, neurological outcomes, and overall prognosis.

Methods: Following PRISMA guidelines, a systematic search was conducted across PubMed, Embase, and Web of Science using terms such as “Eculizumab,” “STEC-HUS,” “Shiga toxin,” and “neurological and renal outcomes.” Studies were selected based on predefined inclusion criteria, including clinical trials, observational studies, and case series assessing Eculizumab’s impact on kidney and neurological function. Risk of bias was assessed using the Cochrane Risk of Bias Tool and the Newcastle-Ottawa Scale. Due to methodological heterogeneity, a qualitative synthesis approach was applied.

Results: A total of 14 studies met the eligibility criteria. Most indicated that Eculizumab may enhance short-term neurological recovery, though its effects on long-term renal function and mortality rates were inconsistent. Some studies reported a reduction in neurological sequelae, while others found no significant benefits in preventing chronic kidney disease progression or reducing dialysis dependency. High treatment costs and uncertain long-term benefits remain major challenges.

Conclusion: Eculizumab can potentially alleviate severe neurological manifestations in STEC-HUS; however, its definitive role in routine clinical practice remains unproven. Larger, well-designed randomized controlled trials are urgently needed to clarify its long-term efficacy, safety profile, and cost-effectiveness. Developing standardized treatment protocols and gaining deeper insight into disease pathophysiology will be essential to optimize patient care and outcomes.

Keywords：Eculizumab, STEC-HUS, Shiga toxin, neurological outcomes, acute kidney injury

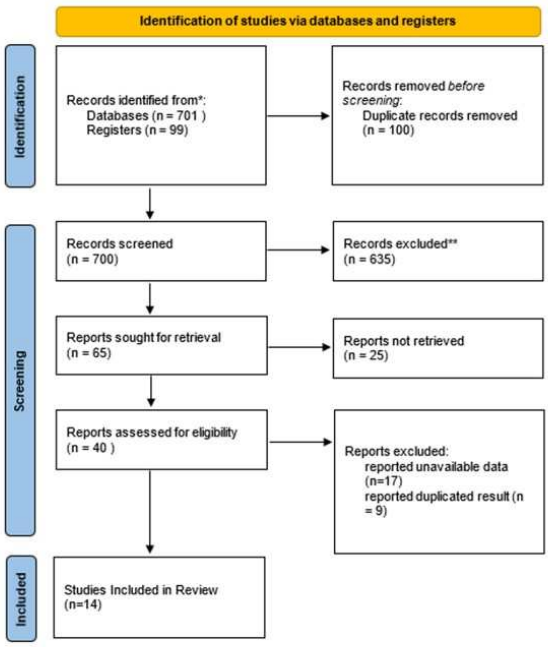

Figure 1. PRISMA Flowchart

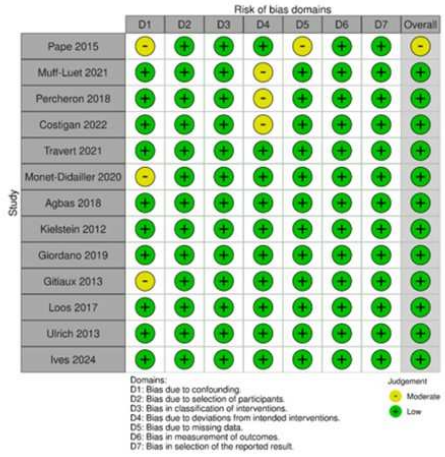

Figure 2. ROBINS-I

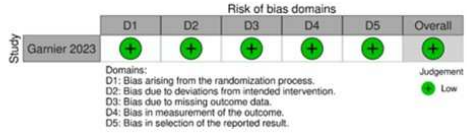

Figure 3. RoB 2

Poster Presentation：AKI
Poster No.：C0010
Abstract Submission No.：APCN20250114

Clinical Outcomes of Combined SGLT2 Inhibitors and GLP-1 Receptor Agonists versus Monotherapy: A Network Meta-Analysis

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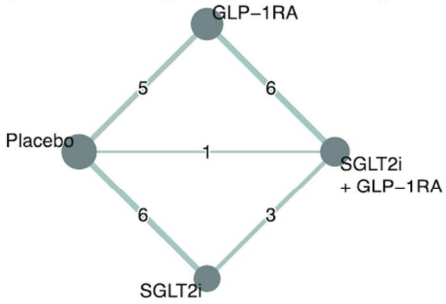
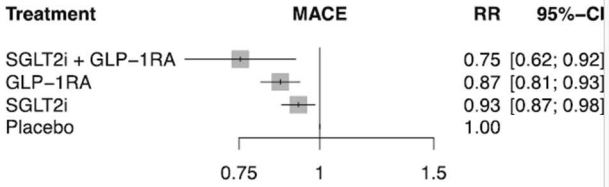
Introduction: The cardiorenal effects of combined sodium-glucose cotransporter 2 inhibitors and glucagon-like peptide-1 receptor agonists versus monotherapy in type 2 diabetes mellitus remain inconclusive. To assess the cardiovascular and kidney outcomes of combined therapy with sodium-glucose cotransporter 2 inhibitors and glucagon-like peptide-1 receptor agonists compared to monotherapy in patients with type 2 diabetes mellitus.
Methods: We systematically searched Ovid (Embase and Medline) and the Cochrane Library from database inception to September 2024 to identify relevant studies. Eligible studies were randomized controlled trials evaluating sodium-glucose cotransporter 2 inhibitors, glucagon-like peptide-1 receptor agonists, or their combination in adults with type 2 diabetes mellitus, focusing on cardiovascular or kidney outcomes. Data extraction and analysis followed the PRISMA 2020 and PRISMA-NMA guidelines. Two reviewers independently extracted the data, and outcomes were synthesized using a random-effects model. The primary outcomes were major adverse cardiovascular events (a composite of cardiovascular death, myocardial infarction, or stroke) and major adverse kidney events (defined as a ≥40% decline in estimated glomerular filtration rate, kidney failure, or kidney-related death).
Results: A total of 13 trials with 91,454 participants were analyzed. The incidence of major adverse cardiovascular events was 6.9% in the combined therapy group, 10.4% in the glucagon-like peptide-1 receptor agonist group, and 9.4% in the sodium-glucose cotransporter 2 inhibitor group. Combined therapy significantly reduced the risk of major adverse cardiovascular events compared to sodium-glucose cotransporter 2 inhibitors alone (risk ratio [RR] = 0.81; 95% CI, 0.67–0.99; p = 0.042). Based on the Surface Under the Cumulative Ranking Curve, combined therapy had the highest probability of reducing the risk of major adverse cardiovascular events (96.9%). For major adverse kidney events, combined therapy showed a comparable effect to sodium-glucose cotransporter 2 inhibitors (RR = 1.01; 95% CI, 0.71–1.43; p = 0.971) and ranked favorably (Surface Under the Cumulative Ranking curve values: 76.7% and 83.8%, respectively) compared to glucagon-like peptide-1 receptor agonists (38.6%).
Conclusion: This network meta-analysis found that combined therapy reduced major adverse cardiovascular event risk more than sodium-glucose cotransporter 2 inhibitors and had the highest probability of benefit over monotherapy. For major adverse kidney events, combined therapy was comparable to sodium-glucose cotransporter 2 inhibitors and potentially more beneficial than glucagon-like peptide-1 receptor agonists alone.

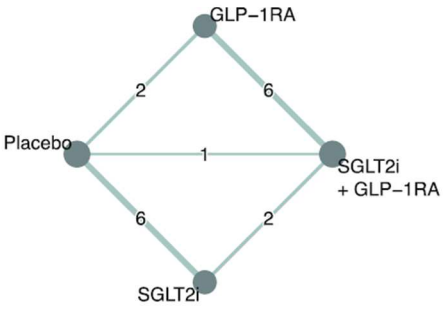
Keywords：SGLT2 inhibitors; glucagon-like peptide-1 receptor agonist; combined; monotherapy; major adverse cardiovascular event

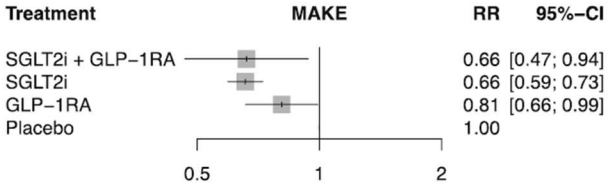
(a) major adverse cardiovascular events
(overall heterogeneity/inconsistency: I^2 = 11.3%, p = 0.317)





(b) major adverse kidney events
(overall heterogeneity/inconsistency: I^2 = 10.9%, p = 0.332)





Poster Presentation：AKI
Poster No.：C0011
Abstract Submission No.：APCN20250146

Establishing reference range for serum creatinine in neonatal population and re-defining neonatal acute kidney injury

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Abstract

Background

The current criteria modified from Kidney Disease Improving Global Outcomes (KDIGO) for neonatal AKI (acute kidney injury) underestimates its prevalence. We aim to propose complementary AKI (cAKI) criteria for neonatal AKI using serum creatinine (Scr) reference limits to enhance AKI diagnosis.

Methods

Neonatal Scr references were established using data between 2007 to 2024. We propose that neonates with Scr level ≥ 1.5 times the upper limit of Scr reference should also be diagnosed with AKI. The incidence and two-year mortality of neonatal AKI according to KDIGO Scr criteria and our cAKI criteria were compared among neonates admitted in intensive care units.

Results

The overall incidence of neonatal AKI by KDIGO Scr criteria is 17.3%, with an additional 4.1% identified by our cAKI criteria. Furthermore, neonates identified with AKI by our cAKI criteria had significantly higher two-year mortality rates compared to those only by KDIGO Scr criteria in the term (35.0% and 17.6% in the term group, $p = 0.032$), and very and extremely preterm groups (35.7% and 7.0%, $p = 0.004$).

Conclusion

This study is the first to propose modified neonatal AKI criteria with Scr references, demonstrating a significant association with mortality in the additional cases identified.

Keywords：neonatal acute kidney injury, serum creatinine reference, gestational age, preterm

Poster Presentation：AKI
Poster No.：C0012
Abstract Submission No.：APCN20250166

Factors Influencing Early Renal Function Changes After SGLT2 Inhibitors Use and Its Long-Term Prognosis: A Real-World Retrospective Study

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Abstract
Background:
The renal protective effects of sodium-glucose cotransporter 2 inhibitors (SGLT2i) have been confirmed. However, SGLT2i may lead to an increase in serum creatine shortly after administration. This study explores the factors influencing this change and its impact on long-term renal function.
Methods:
We conducted a retrospective study on patients starting SGLT2i treatment, classifying them into kidney function deterioration (RD) and no-kidney function deterioration (non-RD) groups based on serum creatinine changes within three months. Multivariate logistic regression analyzed factors influencing RD, and estimated glomerular filtration rate(eGFR) slopes were assessed with mixed-effects linear models.
Results:
A total of 544 patients were included, with 78(14.3%) in the RD group and 466(85.7%) in the non-RD group. Lower eGFR and serum albumin are independent risk factors for RD. With the decrease of eGFR by 10mL/min/1.73 ㎡, the risk of RD increased by 42.3% (P<0.001). With the decrease of serum albumin by 5g/L, the risk of RD increased by 41.7% (P<0.001). The maximum difference in eGFR between the RD and non-RD groups was 13.88ml/min/1.73m² (95%CI, 9.99 to 17.78; P<0.001) on 2months. One year after medication, the difference in eGFR was not related to whether RD occurred (P≥0.05). During the first 3months post-medication, the difference in the eGFR slope between the two groups was 40.51ml/min/1.73m² per year (95%CI,27.43 to 53.60; P<0.001). Over three years, the difference in the eGFR slope was 0.59ml/min/1.73m² per year (95%CI, -0.69 to 1.88; P>0.05).
Conclusions:
While someone experiences an increase in serum creatine, there is no significant long-term difference in renal function between the two groups.

Keywords：Sodium-glucose cotransporter 2 inhibitors; renal failure; eGFR

Poster Presentation：AKI
Poster No.：C0013
Abstract Submission No.：APCN20250174

Exploration of Factors Influencing Early-Onset Acute Kidney Disease in Patients with Idiopathic Membranous Nephropathy and Development of a Risk Scoring System

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Abstract

Objective Idiopathic membranous nephropathy (IMN) is an immune-mediated glomerular disease. We have observed in clinical practice that some IMN patients experience rapid progression of renal function during the early stages of the disease, reaching the criteria for acute kidney disease (AKD). However, the influencing factors for AKD development in IMN patients are not fully understood. This study aims to explore these factors and establish a scoring prediction system based on multivariate analysis to help identify high-risk patients early. Methods A retrospective analysis was conducted on patients diagnosed with IMN through renal biopsy at the Department of Nephrology, Beijing Anzhen Hospital, Capital Medical University, who had regular follow-ups. Patients were divided into two groups: those who developed AKD within the first three months after diagnosis and those who did not. Clinical, pathological, treatment, and prognosis characteristics were compared between the two groups. Multivariate logistic regression analysis was used to identify factors influencing AKD development. Based on the odds ratios (OR) of independent risk factors and clinical specifics, scores were assigned to each factor to develop a risk scoring system. Results Compared to IMN patients who did not develop AKD, those who did were more likely to be female, older, have a higher proportion of hypertension, lower urine osmolality, higher prevalence of anemia, lower serum albumin levels, worse renal function, and higher serum anti-PLA2R antibody titers. Pathologically, they had a higher proportion of ischemic glomeruli and higher tissue C3 positivity rates. Treatment-wise, a higher proportion used diuretics. After adjusting for multiple factors, female gender, age, hypertension, serum albumin levels, anemia, and tissue C3 positivity were identified as independent risk factors for AKD. Based on these results, we established a risk scoring system for early AKD development in IMN patients: low-risk (< 9 points), moderate-risk (9–15 points), and high-risk (≥ 15 points). The early AKD incidence rates for these groups were 5.9%, 24.9%, and 63.5%, respectively. In terms of prognosis, there was no significant difference in disease remission rates between the AKD and non-AKD groups six months later. However, the long-term renal prognosis was worse for the AKD group, and this prognosis was unrelated to whether renal function recovered in the short term. Conclusion IMN patients who develop AKD have poorer long-term renal outcomes. The established risk scoring system may assist clinicians in identifying high-risk AKD patients early and implementing preventive interventions to improve long-term renal prognosis.

Keywords： Membranous Nephropathy; Acute Kidney Disease; Renal Prognosis; Risk Scoring

Poster Presentation：AKI
Poster No.：C0014
Abstract Submission No.：APCN20250184

Clinical Experience Sharing: Ci-Ca Anticoagulation in Continuous Renal Replacement Therapy (CRRT)

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Abstract
Introduction
Critically ill patients often suffer from complex clinical conditions such as multiple organ dysfunction, hemodynamic instability, and systemic inflammation. The incidence of acute kidney injury (AKI) is rising in this population, and AKI in critically ill patients is associated with high mortality. Continuous Renal Replacement Therapy (CRRT) is the preferred modality for managing AKI in patients with hemodynamic instability.
Effective vascular access and uninterrupted dialysis are crucial to achieving optimal outcomes during CRRT. This requires continuous anticoagulation to maintain circuit patency and prevent clotting.
Anticoagulants in CRRT
CRRT operates with slower dialysate and replacement fluid flow rates over extended periods. Anticoagulation is essential to prevent circuit clotting and ensure uninterrupted therapy.
Heparin, first used in the late 1920s, remains the most commonly used anticoagulant in extracorporeal therapies worldwide. However, its use carries the risk of a potentially life-threatening immune-mediated reaction known as Heparin-Induced Thrombocytopenia (HIT).HIT poses a major challenge in CRRT due to the risk of both thrombosis and bleeding.
As an alternative, Regional Citrate Anticoagulation (RCA) has gained popularity. Citrate binds with ionized calcium in the blood, effectively preventing clotting within the extracorporeal circuit. Unlike systemic anticoagulation, citrate is removed through the dialysis membrane, reducing the risk of systemic bleeding—particularly beneficial in patients prone to hemorrhage.
Studies have shown that citrate prolongs circuit lifespan, reduces bleeding complications, and decreases transfusion requirements compared to heparin. However, its use requires careful monitoring of calcium levels to avoid metabolic disturbances. Routine checks of post-filter ionized calcium and serum calcium are essential for adjusting citrate dosage and flow rates.
Ci-Ca Therapy in Continuous Veno-Venous Hemodialysis (CVVHD)
At our institution, CRRT is primarily performed using the Continuous Veno-Venous Hemodialysis (CVVHD) mode with Ci-Ca regional citrate anticoagulation.
Conclusion
With the advent of commercial citrate solutions and advances in CRRT technology, Ci-Ca therapy has become a practical and efficient anticoagulation strategy. Its automated control system adjusts citrate and calcium infusion rates in response to changes in blood or dialysate flow, minimizing citrate accumulation, maintaining acid-base balance, and reducing the risk of metabolic alkalosis. Compared to traditional heparin use, Ci-Ca anticoagulation significantly reduces bleeding and clotting complications, extends circuit and filter lifespan, decreases treatment interruptions, and lessens the nursing workload. Most importantly, it helps maintain metabolic stability throughout the therapy, making it a favorable option in critically ill patients requiring CRRT.

Keywords：CVVHD / HIT / RCA

Poster Presentation：AKI
Poster No.：C0015
Abstract Submission No.：APCN20250185

Enhancing Post-Discharge Care for Hospitalized Acute Kidney Disease Patients through a Visual Digital Dashboard

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Abstract

Background:

Acute kidney disease (AKD) is common among hospitalized patients and is associated with increased risks of chronic kidney disease (CKD) progression, recurrent acute kidney injury (AKI), and post-discharge mortality. While multidisciplinary nephrology follow-up improves outcomes, systematic identification and referral of eligible patients remain suboptimal. This quality improvement initiative aimed to establish a real-time digital dashboard to enhance post-discharge care for AKD patients.

Methods:

This project was conducted at National Cheng Kung University Hospital. Patients aged over 18 years, alive at discharge, meeting AKD criteria with pre-discharge eGFR <45 mL/min/1.73m², and not on chronic dialysis were included. A fishbone analysis identified care process gaps. Two business intelligence dashboards were developed using hospital AKD data: (1) a hospital-wide quality monitoring panel summarizing AKD discharge outcomes, and (2) a daily updated AKD patient list with critical clinical information to support nephrology clinic follow-up.

Results:

From February 2024 to January 2025, among 1981 discharged patients with eGFR <45, 1099 met AKD criteria (46.5% KDIGO stage 1, 40.2% stage 2, 13.4% stage 3). Only 16% were successfully enrolled into post-discharge nephrology care, despite 100% being scheduled for follow-up; 82% completed visits, with major losses during scheduling or follow-up. The dashboard categorized patients in real time as "eligible for enrollment," "not yet enrolled," or "already in pre-ESRD program," and displayed serum creatinine trends and dialysis history. This enabled accurate triage, improved referral, and enhanced multidisciplinary team care coordination.

Conclusion:

Digital transformation enabled the development of a real-time monitoring and management system that identifies care gaps and supports targeted interventions for AKD patients. This visual dashboard approach provides a scalable framework to improve post-discharge care and clinical outcomes through multidisciplinary team engagement.

Keywords：Acute kidney disease; Post-discharge care; Digital dashboard; Nephrology referral; Multidisciplinary team care

Poster Presentation：AKI
Poster No.：C0016
Abstract Submission No.：APCN20250187

Impact of Early Changes in Albumin Levels on Long-Term Kidney and Mortality Outcomes in Patients with Acute Kidney Injury Undergoing Continuous Kidney Replacement Therapy

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Abstract

Background

Albumin is an important prognostic factor for patients undergoing continuous kidney replacement therapy (CKRT), and hypoalbuminemia is associated with an increased risk of early mortality. However, the impact of early changes in albumin levels during CKRT on long-term patient outcomes remains unclear. This study investigated the relationship between early changes in albumin levels during CKRT and the risk of long-term kidney and mortality outcomes.

Methods

We analyzed 1,087 patients with acute kidney injury who underwent CKRT and survived for at least 90 days after CKRT initiation from a multicenter retrospective cohort in Korea. Patients were categorized into four groups based on albumin levels at the initiation and on day 7 of CKRT: low to low, low to normal, normal to low, and normal to normal. The primary outcome was a composite of progression to end-stage kidney disease (ESKD) and all-cause mortality within 365 days after CKRT.

Results

The primary composite event occurred in 33.4% (363/1,087) of patients, with progression to ESKD in 19.0% (207/1,087), and all-cause mortality in 19.6% (213/1,087). The incidence of the primary outcome was highest in the group with persistently low albumin levels and lowest in the group with persistently normal albumin levels. The risk of the composite outcome at 365 days was significantly higher in the three groups compared to the persistently normal albumin group (low to low: adjusted odds ratio [aOR], 2.69, 95% confidence interval [CI], 1.78-4.11, P<0.001; low to normal: aOR, 2.33, 95% CI, 1.42-3.84, P<0.001; normal to low: aOR 1.75, 95% CI, 1.10-2.78, P=0.018). Persistently normal albumin levels were associated with the most favorable outcomes for the progression to ESKD and mortality, whereas persistently low albumin levels were linked to the poorest prognosis.

Conclusion

Early changes in albumin levels during CKRT are associated with long-term risks of kidney failure and mortality. Persistently low albumin levels are predictors of the worst outcomes, and even in patients with normal baseline albumin levels, an early decline in albumin is associated with a worse prognosis.

Keywords：Acute kidney injury; Albumin; Continuous kidney replacement therapy; Critical care; Kidney recovery; Mortality

Poster Presentation：AKI
Poster No.：C0017
Abstract Submission No.：APCN20250200

Improving Long-Term Kidney Outcomes in Acute Kidney Injury (AKI) Survivors: Effectiveness of a Multidisciplinary, Education-Focused AKI Clinic

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Abstract

Introduction: Survivors of acute kidney injury (AKI) face increased risks of both short- and long-term adverse outcomes, including chronic kidney disease, recurrent AKI, and mortality. Recent studies have shown that a multidisciplinary AKI Clinic—comprising nephrologists, pharmacists, dietitians, and nurses—can enhance patient awareness and knowledge among post-AKI survivors. However, its impact on long-term renal outcomes remains underexplored. This study aimed to evaluate the effectiveness of a multidisciplinary, education-focused AKI Clinic on long-term kidney outcomes and care process measures in AKI survivors.

Methods: We conducted a retrospective study of post-AKI stage 2-3 patients who attended the AKI Clinic at Central Chest Institute of Thailand between 2021 and 2024, with a follow-up period of 12 months. Each clinic visit involved a structured, four-step patient education program delivered by a multidisciplinary team, focusing on AKI awareness, medication safety (including sick day protocols and nephrotoxin avoidance), dietary counseling, and strategies to preserve long-term kidney health. The primary outcome was the incidence of major adverse kidney events (MAKE) at 12 months. Secondary outcomes included the rates of chronic kidney disease (CKD) progression, de-novo CKD, recurrent AKI, and progression of albuminuria. Effectiveness outcomes assessed follow-up adherence (loss to follow-up rates), the frequency of renal function monitoring, and the number of educational sessions delivered.

Results: Of 160 enrolled patients (mean age 68.3 years), 49.4% exhibited renal recovery at hospital discharge. At 12 months, 88 patients completed follow-up; 22.5% were referred to primary care, and 12.1% had died. The overall incidence of MAKE was 22.6%, significantly higher among patients without renal recovery at discharge (32.7%) compared to those with recovery (16.0%; $P = 0.03$). CKD progression and recurrent AKI occurred in 25% of patients, while 12.1% experienced progression of albuminuria. For effectiveness outcomes, serum creatinine was measured at every visit, and 77.4% of patients had at least two urinary albumin-to-creatinine ratio (UACR) assessments during the follow-up period. Each visit involved a comprehensive evaluation by the multidisciplinary care team.

Conclusion: The multidisciplinary AKI Clinic improved follow-up adherence and renal function monitoring and was associated with a favorable trend in reducing major kidney-related events. Further controlled studies are needed to confirm these findings

Keywords：Multidisciplinary, Post-AKI, acute kidney injury, MAKE

Table: Long-term outcomes by renal recovery status at discharge

	Total, N=124	**Renal recovery, N=75**	**Non-renal recovery, N=49**	**P-value**
Loss to follow-up/Referral	36 (22.5)	21 (21.9)	15 (23.4)	0.82
MAKE [a]	28 (22.6)	12 (16)	16 (32.7)	**0.03**
Death	15 (12.1)	10 (13.3)	5 (10.2)	0.60
Doubling serum creatinine	15 (12.1)	3 (4.0)	12 (24.5)	**0.001**
RRT [b]	5 (4.0)	2 (2.7)	3 (6.1)	0.34
CKD Progression [c]	31 (25.0)	17 (22.7)	14 (28.6)	0.46
Denovo CKD [d]	26 (20.9)	8 (10.7)	18 (36.7)	**<0.001**
Recurrent AKI	31 (25.0)	18 (24)	13 (26.5)	0.75
Progression of albuminuria	15 (12.1)	7 (9.3)	8 (16.3)	0.24
Readmission	42 (33.9)	23 (30.7)	19 (38.8)	0.35

[a] MAKE; composite of death, initiation of renal replacement therapy, or persistent renal dysfunction (doubling of serum creatinine or eGFR decline >50% from baseline) within 12 months.
[b] New RRT; newly initiated renal replacement therapy after discharge
[c] CKD progression; worsening of CKD stage based on eGFR criteria in patients with pre-existing CKD.
[d] Denovo CKD; new diagnosis of CKD by eGFR criteria in patients with no prior history of CKD.

Poster Presentation：AKI
Poster No.：C0018
Abstract Submission No.：APCN20250230

Therapeutic Potential of NADPH Oxidase Inhibitor in Preventing Sepsis-Induced Acute Kidney Injury in Mice

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Abstract

Introduction:

Acute kidney injury (AKI) is a common and severe complication of sepsis, contributing significantly to morbidity and mortality in critical care settings. The pathogenesis of sepsis-induced AKI involves complex mechanisms, including inflammation, oxidative stress, and microvascular dysfunction. NADPH oxidase is a key enzyme complex responsible for reactive oxygen species (ROS) production, playing a pivotal role in the oxidative stress response. Inhibition of NADPH oxidase may offer a promising therapeutic strategy to mitigate kidney damage in septic conditions. This study aims to evaluate the protective effect of NADPH oxidase inhibitor in a murine model of sepsis-induced AKI.

Methods:

Male BALB/c mice (8–10 weeks old) were randomly divided into five groups: normal mice (MN) and treated mice. Negative control (KN) and treatment groups (P1-3) were intraperitonelly injected with 0.3 mg/ kg BW LPS, which were given 2.1; 4.2 dan 8.4 mg/20 g ethanol extract of E. elatior fruits respectively from 5 days before injection to 7 days after treatment. Blood serum was used to test NADPH oxidase activity. whiles urine samples were used to test NGAL expression, were analyzed using ELISA. Sepsis was induced using the injection of LPS method. The mean of all variable was analyzed using the ANOVA and Kruskal wallis tests with p value <0.05.

Results:

The averages of NADPH oksidase activity (7.862+0.357 µl/mg) and expression NGAL (38.889+0.763 ng/ml) in P3 were lower than that of KN, P1 dan P2 ($p<0.001$) while significantly higher than that of MN ($p<0.001$). NADPH oxidase activity and expression of NGAL in sepsis mice model treated with 8.4 mg/20 g Ethanol extract of E.elatior fruits are lower than that of other doses (2.1 and 4.2 mg/20 g) and without treatment.

Conclusion:

NADPH oxidase inhibition effectively mitigates sepsis-induced acute kidney injury in mice. These findings support the therapeutic potential of NADPH oxidase inhibitors as a novel intervention for sepsis-associated AKI. Further studies are warranted to explore the clinical translation of these findings.

Keywords：Sepsis, Acute Kidney Injury, NADPH Oxidase, Mice Model

Poster Presentation：AKI
Poster No.：C0019
Abstract Submission No.：APCN20250234

Demographic Profile and Clinical Outcome Among Patients with Acute Kidney Injury Admitted at Manila Central University – Filemon D. Tanchoco Medical Foundation Hospital From 2016 – 2023

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Abstract
Introduction:
Acute Kidney Injury (AKI) is a common and serious medical condition characterized by a sudden decline in kidney function, which can range from slight increases in kidney biomarkers to severe impairment requiring dialysis. According to the Kidney Disease: Improving Global Outcomes (KDIGO) criteria, AKI is identified through elevated serum creatinine levels or decreased urine output. Monitoring AKI through health registries is essential for identifying patterns, informing clinical management, and shaping health policies. This study aimed to determine the incidence, causes, and outcomes of adult patients with AKI admitted to Manila Central University (MCU) – FDTMF Hospital between 2016 and 2023, with the broader goal of contributing data toward the establishment of a national AKI registry.
Methods:
This descriptive, retrospective study reviewed medical records of adult inpatients diagnosed with AKI (ICD-10 codes N17, N17.9) from 2016 to 2023. Data collected included demographics, comorbidities, laboratory values, etiology, treatment, and clinical outcomes.
Results:
A total of 85.2% of AKI cases were community-acquired, while 14.8% developed during hospitalization, with the highest rates observed in 2020 and 2023. The mean patient age was 62 years, with near-equal sex distribution and an average BMI of 24.7 kg/m². Common comorbidities included hypertension (54%) and diabetes (35%). Pre-renal causes accounted for 71% of cases. At baseline, the mean serum creatinine was 3.09 mg/dL, which improved to 2.46 mg/dL at discharge. eGFR increased from 33 to 41 mL/min/1.73m². Over 60% of patients had nephrotoxic exposures. The average length of stay was 10 days. Clinical improvement occurred in 64.6% of patients, while 9.5% required dialysis. However, 30.2% had further renal decline and 33.3% died during hospitalization.
Conclusion:
From 2016 to 2023, AKI comprised 1.5% of hospital admissions at MCU Hospital, primarily community-acquired (>85%). Older age, hypertension, and diabetes were prevalent risk factors, with pre-renal causes predominating. Despite conservative management, AKI was associated with high mortality (33.3%) and persistent kidney injury. The rise in hospital-acquired AKI in 2023 may reflect evolving patient demographics or improved detection. These findings highlight AKI as a major but often underrecognized public health challenge in both community and hospital settings.

Keywords：Acute Kidney Injury, creatinine, pre-renal, KDIGO, dialysis

Poster Presentation：AKI
Poster No.：C0020
Abstract Submission No.：APCN20250261

Early Sodium-Glucose Co-transporter 2 Inhibitor Use and Risk of Kidney Events in Type 2 Diabetes Patients Recovering from Acute Dialysis - A Target Trial Emulation Study

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Abstract

Background

Patients with T2DM recovering from dialysis-requiring AKD face elevated risks of kidney disease progression. Although SGLT2 inhibitors offer proven cardiorenal protection, their timing and efficacy in this underrepresented population remain uncertain.

Methods

We conducted a multicenter cohort study via the TriNetX Global Network, enrolling hospitalized adults with T2DM who required but discontinued dialysis before discharge (2015–2024). Patients were stratified by early (≤30 days) vs late (>30 days) post-discharge SGLT2i initiation. Propensity score matching balanced baseline covariates. Primary outcomes included MACE, all-cause mortality, and adverse kidney events (dialysis re-initiation, eGFR <15 mL/min/1.73 m², or ESKD). Secondary outcomes assessed SGLT2i-related adverse effects.

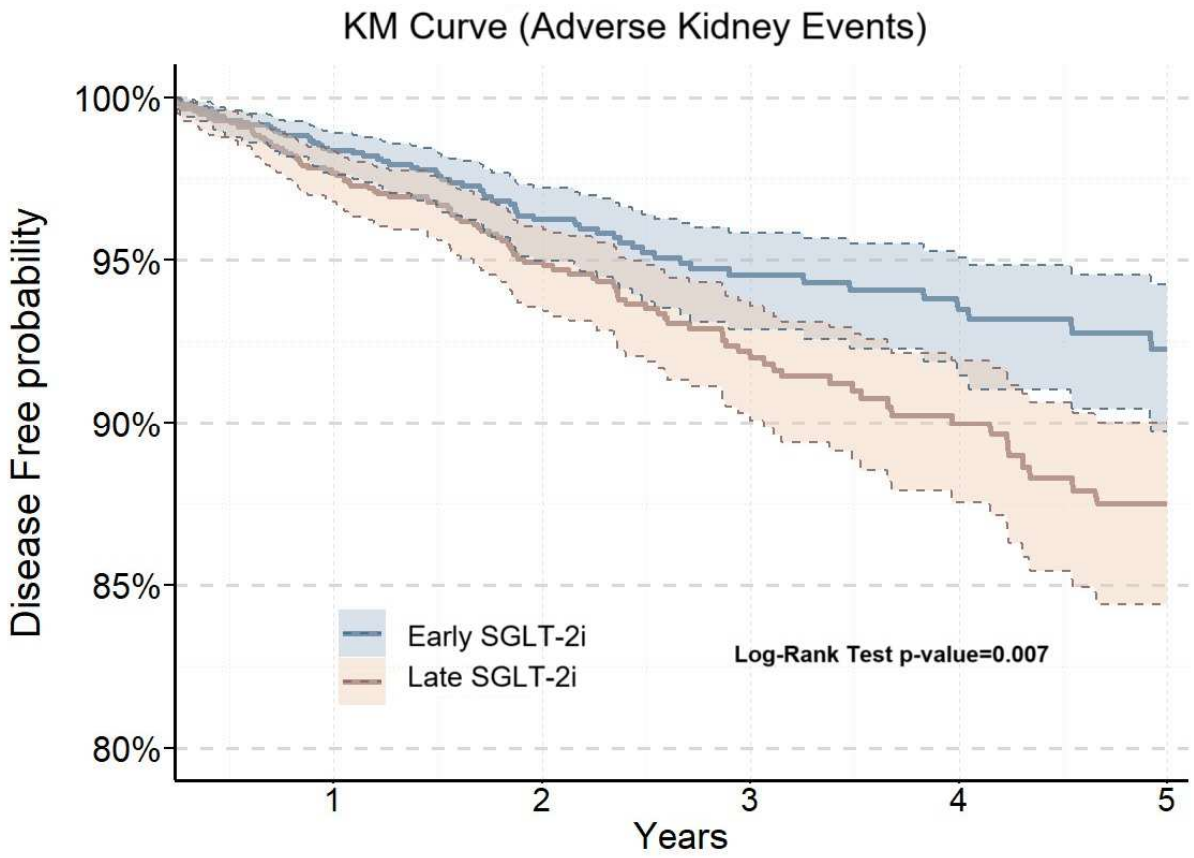
Results

There were 2079 early SGLT2i users (mean age 63.2, 57.1% male) during the AKD period following AKI-D. After propensity score matching and a median follow-up of 3.3 years, early SGLT2i use was significantly associated with fewer adverse kidney events compared to late use (aHR 0.65, 95% CI 0.48–0.89, log-rank p=0.007). Notably, early use conferred protection against eGFR decline to <15 mL/min/1.73 m² (HR 0.65, 95% CI 0.48–0.89, p=0.006), while effects on dialysis re-initiation were neutral. A significant interaction with GLP-1 receptor agonist therapy (p=0.004) further enhanced renoprotection (aHR 0.13, 95% CI 0.04–0.44). No differences were observed in MACE (p=0.869) or all-cause mortality (p=0.532), and safety outcomes were comparable across groups.

Conclusion

Early SGLT2i initiation after AKD in T2DM patients offers significant renal protection without increased cardiovascular or metabolic risk, with enhanced benefit when combined with GLP-1RA—highlighting a crucial opportunity to prevent kidney disease progression.

Keywords：Acute Kidney Disease, SGLT2 Inhibitors, Adverse Kidney Events


KM Curve (Adverse Kidney Events)
Disease Free probability
100%
95%
90%
85%
80%
1
2
3
4
5
Years
Early SGLT-2i
Late SGLT-2i
Log-Rank Test p-value=0.007

Poster Presentation：AKI
Poster No.：C0021
Abstract Submission No.：APCN20250287

Protective Effects of Influenza Vaccination in Patients with Acute Kidney Disease Following Severe AKI: A Multicenter Real-World Study

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[4] Primary Aldosteronism Center of Department of Internal Medicine, National Taiwan University Hospital, Taiwan

[5] NSARF (National Taiwan University Hospital Study Group of ARF), TAIPAI, (Taiwan Primary Aldosteronism Investigators), and CAKS (Taiwan Consortium for Acute Kidney Injury and Renal Diseases), Taiwan

Abstract

Introduction

Acute kidney disease (AKD), the transitional phase between acute kidney injury (AKI) and chronic kidney disease (CKD), is increasingly recognized as a high-risk period for adverse outcomes including infection, cardiovascular events, and mortality. However, the role of preventive interventions such as influenza vaccination in this population remains unclear. Given the immunologic vulnerability post-AKI, we aimed to assess the effectiveness of post-discharge influenza vaccination in reducing adverse outcomes in AKD patients.

Methods

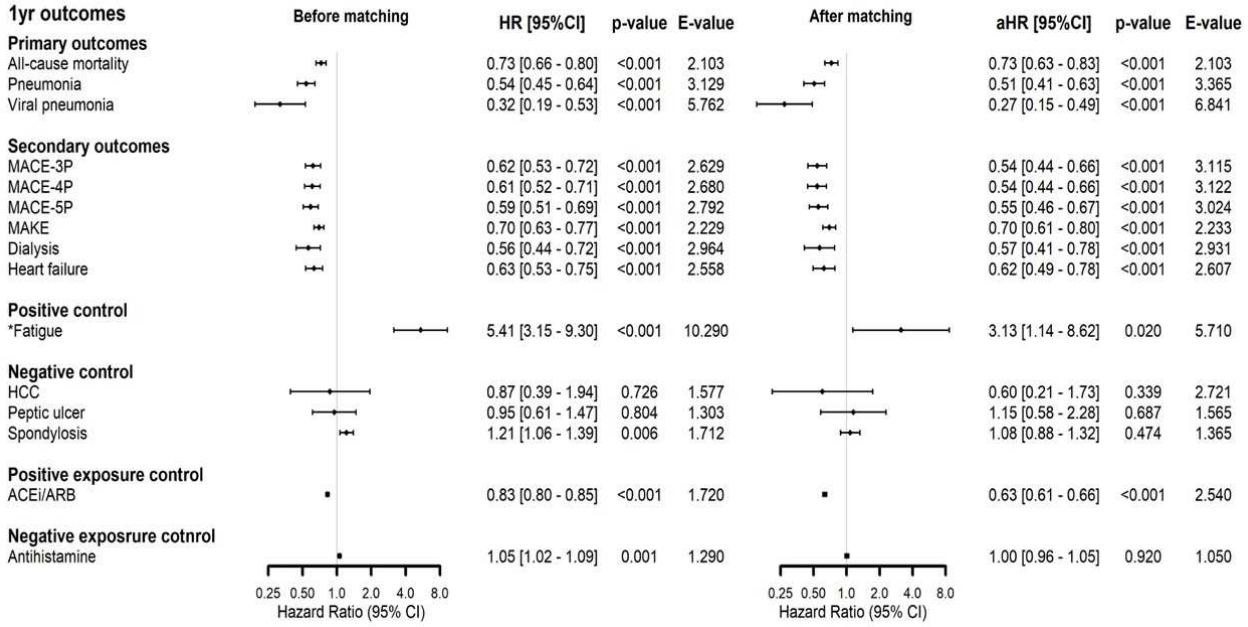
We conducted a retrospective cohort study using the TriNetX global research network, emulating a target trial. Adults (18 - 90 years) who recovered from dialysis-requiring AKI and entered AKD were included. Patients were categorized based on whether they received influenza vaccination within 3 months after discharge. Propensity score matching (1:1) was applied to balance baseline characteristics. Outcomes were assessed over one year. Primary outcomes included all-cause mortality, pneumonia, and viral pneumonia. Secondary outcomes were major adverse cardiovascular events (MACE), major adverse kidney events (MAKE), dialysis, and heart failure.

Results

Among 25,146 matched patients, vaccination was associated with significantly lower risks of all-cause mortality (adjusted hazard ratio [aHR] 0.73; 95% CI, 0.61- 0.83; E-value, 2.10), pneumonia (aHR, 0.51; 95% CI, 0.41- 0.63; E-value, 3.37), and viral pneumonia (aHR, 0.27; 95% CI, 0.15 - 0.49; E-value, 6.84). Significant reductions were also observed in MACE (aHR, 0.54; 95% CI, 0.44 - 0.66; E-value, 3.12), MAKE (aHR, 0.70; 95% CI, 0.61- 0.80; E-value, 2.23), dialysis (aHR, 0.57; 95% CI, 0.41- 0.78; E-value, 2.93), and heart failure (aHR, 0.62; 95% CI, 0.50 - 0.78; E-value, 2.61). Subgroup analyses were conducted to assess effect modifications across patient characteristics and vaccination patterns. For all-cause mortality, a significant interaction was observed between vaccination status, with repeated vaccination providing stronger protection than de novo vaccination (interaction P = 0.003). A similar trend was seen for MAKE (interaction P = 0.001).

Conclusion
Influenza vaccination following hospitalization for AKI is associated with substantial reductions in mortality and cardiorenal complications in patients with AKD. These findings underscore the importance of integrating vaccination into post-AKI care strategies to improve long-term outcomes in this vulnerable population.

Keywords：Influenza vaccination; acute kidney disease (AKD); acute kidney injury (AKI); outcomes



Poster Presentation：AKI
Poster No.：C0022
Abstract Submission No.：APCN20250295

Acute Kidney Injury in a Polycythemia Vera Complicated by Sepsis due to Necrotizing Fasciitis: A Case Report

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Abstract

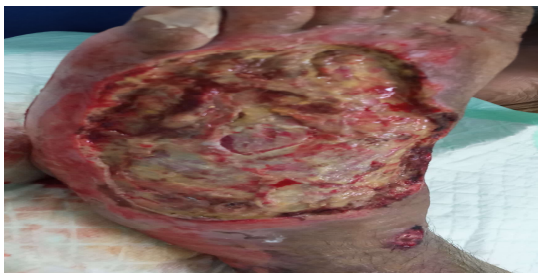
Introduction: Acute kidney injury (AKI) is a critical complication of sepsis and a significant determinant of prognosis in critically ill patients. Sepsis-associated AKI (SA-AKI) involves a complex interplay of hemodynamic instability, inflammation, and microvascular dysfunction, which may be further exacerbated by underlying hematologic disorders. Polycythaemia vera (PV), a BCR–ABL–negative myeloproliferative neoplasm characterized by JAK2V617F-driven erythrocytosis and thrombocytosis, implies a unique risk in septic states due to increased blood viscosity and an increased prothrombotic profile. These hematologic features may contribute to renal hypoperfusion and thrombotic microangiopathy, which leads to a worsened kidney injury during sepsis.

Method: We present a severe case of a 51-year-old patient with JAK2-positive PV who developed necrotizing fasciitis complicated by septic shock and rapidly progressive AKI. Comprehensive clinical data, including laboratory parameters, imaging studies, and management strategies, were collected. AKI was diagnosed based on KDIGO criteria, and renal support was initiated during intensive care treatment.

Result: On admission, the patient demonstrated leukocytosis (WBC 24,400/µL), severe thrombocytopenia (PLT 70,000/µL), and markedly elevated creatinine (8.5 mg/dL), meeting KDIGO criteria for stage 3 AKI. Arterial blood gas revealed metabolic acidosis (HCO_3^- 16.3 mmol/L, BE –6.4). Hematocrit was elevated (56.1%), indicating significant hyperviscosity. Despite aggressive management, the course was marked by hemodynamic instability, multiorgan dysfunction, and renal failure requiring renal replacement therapy.

Conclusion: This case illustrates the diagnostic and therapeutic challenges of managing SA-AKI in the context of myeloproliferative disease. Hyperviscosity and a prothrombotic state are likely contributing to renal hypoperfusion and worsened SA-AKI. Clinicians should be alerted to early AKI in septic patients with PV and implement prompt, individualized strategies for hemodynamic optimization, hematologic control, and renal support.

Keywords：Acute Kidney Injury, Polycythaemia Vera, Necrotizing Fasciitis



Poster Presentation：AKI
Poster No.：C0023
Abstract Submission No.：APCN20250327

How Much Effort Is Being Made to Diagnose Contrast-Induced Nephropathy : Reality and Ideal

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Abstract

Contrast-induced nephropathy (CIN) is one of the common causes of acute kidney injury(AKI), but it is often overlooked and ignorant compared to its importance. Usually, renal function recovers after injury, but it can also lead to renal function decline and progression in patients with chronic kidney disease. Therefore, this study was conducted to recognize the importance of CIN and to help improve the prognosis of patients through early detection and treatment.

This study was a single-center, retrospective, observational study that targeted patients admitted to Gyeongsang National University Changwon Hospital from March 2016 to February 2025. Adults aged 18 years or older were included, and patients who used contrast media(CM) such as CT or Coronary angiography (CAG) were included. Pediatric patients, dialysis patients, patients with acute renal failure within 3 months, and patients with unknown baseline creatinine were excluded from the study.

A total of 69,385 people underwent CT scans, of which 28,921 (41.6%) (27,215 who did not undergo examination within 7 days, 1,479 with ESRD, and 227 no baseline creatinine) did not undergo renal function assessment after exposure to contrast media. The number of cases of no examination of renal function tests was high in the departments of emergency medicine, gastroenterology, General surgery, and hematology-oncology, and the rate of no examination was high in the departments of obstetrics and gynecology, otolaryngology, urology, and cardiology (Table 1 and Figure 1). Surprisingly, the rate of non-performance of renal function assessment was measured between the departments of internal medicine and surgery, excluding emergency medicine, and the department of internal medicine showed a statistically significant negligence in renal function assessment compared to the department of surgery. A total of 962 patients (2.4%) out of 40,464 patients developed acute renal failure, 679 patients developed AKI within 24 to 48 hours, and 283 patients developed AKI within 48 to 72 hours. 5,676 patients (14.0%) had CKD, and 505 patients (8.9%) developed AKI in CKD patients. 358 patients developed AKI within 24 to 48 hours, and 147 patients developed AKI within 48 to 72 hours.

The occurrence of CIN can have a significant impact on renal function and prognosis, but most clinicians overlook it and do not perform laboratory tests after CM exposure. We should be aware that the incidence of CIN may be higher than expected, and we should make continuous efforts to preserve patients' renal function through early detection and treatment of CIN.

Keywords：Contrast induced nephropathy, CIN, AKI, Progression, ignorant

Figure 1. Proportion of patients who did not undergo renal function evaluation after exposure to contrast medium
(Abbreviation) OBGY : Obsterics and gynecology, ENT : Otorhinolaryngology, URO : Urology, IMC : Internal Medicine Cadiology, IMG : Internal Medicine Gastroenterology, IMH : Internal Medicine Hemato-oncology, EM : Emergency department, NR : Neurology, IMP : Internal Medicine Pulmonology, GS : General surgery, IMN : Internal Medicine Nephology, OS : Orthopedic surgery, NS : Neurosurgery, CS : CardioThoracic surgery

	Exam	No-Exam	Total
EM	22,722	17,126	39,848
IMG	2,585	2,301	4,886
GS	2,488	1,457	3,945
IH	1,906	1,562	3,468
IMP	1,833	1,141	2,974
CS	2,017	398	2,415
IMC	1,038	1,143	2,181
NS	1,352	318	1,670
ENT	633	984	1,617
NR	831	608	1,439
IMN	798	289	1,087
URO	457	528	985
OS	594	169	763
OBGY	72	233	305

Table 1. Number of renal function tests after contrast exposure
(Abbreviation)
EM : Emergency department, IMG : Internal Medicine Gastroenterology, GS : General surgery, IMH : Internal Medicine Hemato-oncology, IMP : Internal Medicine Pulmonology, CS : CardioThoracic surgery, IMC : Internal Medicine Cadiology, NS : Neurosurgery, ENT : Otorhinolaryngology, NR : Neurology, IMN : Internal Medicine Nephology, URO : Urology, OS : Orthopedic surgery, OBGY : Obsterics and gynecology

	Exam	No-Exam	Total	%
Internal Medicine	8991	7044	16035	43.9
Surgery	7613	4087	11700	34.9

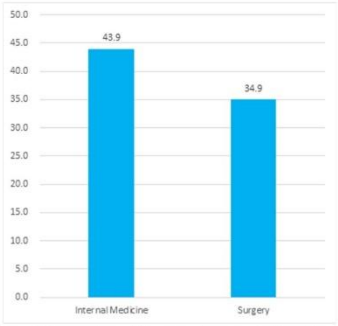

Figure 2. Comparison of the rates of no examination of renal function test after exposure to contrast media : Internal medicine vs. surgery

Poster Presentation：AKI
Poster No.：C0024
Abstract Submission No.：APCN20250335

Protective Effect Of Body Mass Index On Renal Survival And Mortality In Critically Ill Patients Undergoing Continuous Renal Replacement Therapy

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Abstract

Introduction: Obesity is increasingly recognized as a public health problem worldwide. Many studies have addressed the effects of body mass index (BMI) on the prognosis of critically ill patients, but the correlation is not yet clear. This study investigated the association between BMI and renal survival as well as mortality in critically ill patients receiving continuous renal replacement therapy (CRRT).

Methods: We conducted a multicenter retrospective cohort study involving patients (aged ≥18 years) who received CRRT in the intensive care units (ICUs) of eight hospitals across South Korea between 2017 and 2022. Follow-up was conducted through April 2024. All participants were categorized into four BMI groups based on the World Health Organization Asia-Pacific classification: underweight (<18.5 kg/m²), normal (18.5–22.9), overweight (23.0–24.9), and obese (≥25.0). The primary outcomes were: (1) 7-day renal recovery, defined as not requiring any form of renal replacement therapy (RRT) on day 7 after CRRT initiation and (2) overall mortality during the follow-up period. We used multivariable logistic regression and Cox proportional hazard models for assessing the impact of BMI adjusting for potential confounders. Also, subgroup analyses were performed based on age (>75 vs ≤75 years), sex, comorbidities (diabetes mellitus, hypertension, chronic kidney disease, cardiovascular disease), and acute kidney injury (AKI) etiology (septic vs non-septic)

Results: A total of 1329 patients were included in the study. Multivariable logistic regression analysis for the odds ratio of RRT-free on day 7 after CRRT initiation indicated that the obese group (BMI ≥25) had a significantly greater likelihood of renal recovery compared to the underweight group (OR 1.59; 95% CI 1.02–2.48; P = 0.041; P for trend = 0.038). In Cox regression analysis evaluating the hazard ratio for mortality, higher BMI was significantly associated with a reduced risk of mortality, suggesting a survival benefit for the obese group (HR 0.58, 95% CI 0.40–0.84; P = 0.004; P for trend = 0.041).

Subgroup analysis revealed that the obese group had significantly better renal recovery on day 7 and lower overall mortality in relatively younger patients (≤75 years), females, those without diabetes, hypertension, or CKD, and non-septic AKI patients.

Conclusion: This study found that higher BMI was associated with better renal recovery and reduced mortality in critically ill patients undergoing CRRT. These results suggest that higher BMI may confer a potential survival benefit and improve renal recovery in specific patient subgroups, warranting further investigation into the underlying mechanisms.

Keywords：Body Mass Index, Renal survival, Mortality, Continuous Renal Replacement Therapy

Odds ratios for being renal replacement therapy–free at day 7 after CRRT initiation across BMI categories

Group	No. of subjects	No. of events	Model 1[a]			Model 2[b]			Model 3[c]			Model 4[d]		
			OR	P	P for trend	OR	P	P for trend	OR	P	P for trend	OR	P	P for trend
BMI <18.5	128	46	1 (Ref.)		0.135	1 (Ref.)		0.143	1 (Ref.)		0.039	1 (Ref.)		0.0379
BMI 18.5–22.9	464	179	1.12 (0.75-1.69)	0.586		1.14 (0.75-1.76)	0.549		1.28 (0.83-2.00)	0.27		1.28 (0.83-2.00)	0.269	
BMI 23–24.9	266	100	1.07 (0.69-1.67)	0.75		1.08 (0.68-1.72)	0.741		1.23 (0.77-1.98)	0.399		1.22 (0.76-1.97)	0.403	
BMI ≥25	471	200	1.32 (0.88-1.98)	0.184		1.34 (0.88-2.06)	0.18		1.58 (1.02-2.48)	0.0418		1.59 (1.02-2.48)	0.0408	

Hazard ratios for overall mortality across BMI categories

Group	No. of subjects	No. of events	Total PY	IR per 1000 PY	Model 1[a]			Model 2[b]			Model 3[c]			Model 4[d]		
					HR	P	P for trend	HR	P	P for trend	HR	P	P for trend	HR	P	P for trend
BMI <18.5	128	42	250.5572	167.6264	1 (Ref.)		0.255	1 (Ref.)		0.0873	1 (Ref.)		0.0353	1 (Ref.)		0.0405
BMI 18.5–22.9	464	126	912.6023	138.0667	0.84 (0.59-1.19)	0.321		0.71 (0.50-1.01)	0.0603		0.63 (0.44-0.90)	0.0117		0.63 (0.44-0.91)	0.0129	
BMI 23–24.9	266	72	543.0363	132.5878	0.81 (0.55-1.18)	0.268		0.69 (0.47-1.01)	0.0574		0.62 (0.42-0.91)	0.0162		0.62 (0.42-0.91)	0.0156	
BMI ≥25	471	124	938.8364	132.0784	0.79 (0.55-1.12)	0.18		0.66 (0.46-0.95)	0.0235		0.58 (0.40-0.83)	0.00324		0.58 (0.40-0.84)	0.00401	

Abbreviation: BMI, body mass index; OR, odds ratio; PY, person-years; IR, incidence rate; HR, hazard ratio.

a : Unadjusted

b : Adjusted for age, sex, diabetes, hypertension, chronic kidney disease, systolic blood pressure, diastolic blood pressure, estimated glomerular filtration rate, hemoglobin over 7, vasopressin dose, norepinephrine dose, dopamine dose, epinephrine dose, dobutamine dose

c : b + cardiovascular diagnosis, hematologic diagnosis, oncologic diagnosis, respiratory diagnosis, gastrointestinal diagnosis, nephrology diagnosis, neurologic diagnosis, musculoskeletal diagnosis, septic acute kidney injury, postoperative acute kidney injury, ischemic acute kidney injury, nephrotoxic acute kidney injury, mechanical ventilation, fraction of inspired oxygen, extracorporeal membrane oxygenation

d : c + cardiac surgery, noncardiac surgery

Poster Presentation：AKI
Poster No.：C0025
Abstract Submission No.：APCN20250340

The Impact of Postoperative INR on Acute Kidney Injury Incidence Following Valve Replacement Surgery

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Abstract
Objective: This study aims to investigate the impact of the international normalized ratio (INR) following valve replacement surgery on the incidence of postoperative acute kidney injury (AKI).
Methods: A retrospective review of medical records was conducted for patients hospitalized at Beijing Anzhen Hospital who underwent valve replacement surgery and were prescribed warfarin between August 2018 and August 2023. Patients were divided into two groups based on the presence or absence of postoperative AKI: the AKI group and the non-AKI group. Comparative analyses of medical records were performed between these two groups. Logistic regression and restricted cubic splines analysis were used to evaluate the association between postoperative INR levels and the occurrence of AKI. Furthermore, patients with AKI were stratified into four subgroups based on postoperative INR levels, and differences in renal function recovery and in-hospital mortality among these subgroups were subsequently analyzed.
Results: The study included a cohort of 8,497 patients, of whom 58.6% were male, with an average age of 57.40 ± 12.27 years. Postoperative AKI was observed in 15.9% of the patients. An increase in the INR was correlated with a progressive rise in the incidence of AKI and in-hospital mortality. Multivariate regression analysis revealed that, compared to patients with an INR <2, those with an INR between 2 and 3 had a 2.9-fold increased risk of developing AKI, those with an INR between 3 and 4 had a 4.1-fold increased risk, and those with an INR≥4 had a 5.2-fold increased risk. Additionally, restricted cubic splines analysis demonstrated that elevated INR levels were significantly associated with a higher risk of postoperative AKI (nonlinear P-values all <0.001). Among patients who developed AKI, increased INR levels were linked to a reduced rate of renal function recovery during hospitalization and a higher in-hospital mortality.
Conclusion: Elevated INR following valve replacement surgery is independently associated with an increased risk of postoperative AKI.

Keywords： Acute kidney injury; international normalized ratio; valve replacement surgery

Poster Presentation：AKI
Poster No.：C0026
Abstract Submission No.：APCN20250353

Does Branched-chain Amino Acid Infusion Provides Benefit in The management of Acute Kidney Injury Patients?

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Abstract
Introduction
Fluid resuscitation and electrolyte management are crucial in the management of acute kidney injury (AKI). However, not all intravenous fluids are entirely safe for this condition, including standard crystalloids. While some evidence suggests that branched-chain amino acids (BCAA) might be protective for AKI, robust evidence is still limited. This study aims to evaluate this issue.
Methods
This was a single-center retrospective cohort study. We identified admissions of local adult patients (>18 years old) diagnosed with AKI (using Kidney Disease Improving Global Outcomes/KDIGO criteria) between January 2020 and January 2025. Patients who received either BCAA infusion or crystalloids (specifically, Ringer's lactate) as supportive management were included. Patients with chronic kidney disease (CKD) by KDIGO criteria requiring regular hemodialysis, as well as those with incomplete medical records, were excluded. The resolution of an AKI event was the primary outcome. In-hospital length of stay (LOS) and the number of AKI patients requiring hemodialysis were the secondary outcomes.
Results
A total of 176 AKI patients were included (90 in the BCAA group and 86 in the crystalloid group). The underlying causes of AKI in this study, in descending order, were infections, nephrotoxic drugs (specifically, non-steroidal anti-inflammatory drugs), and obstructive cases (such as kidney stones). Fifty-four percent (95/176) of the patients were female. The BCAA group received a daily infusion of 200 ml of 7.2% amino acid fluid (containing BCAA) via a peripheral vein, after which Ringer's lactate was administered as maintenance fluid for the rest of the day. The crystalloid group received only Ringer's lactate from the day of admission until discharge.
Primary analysis showed a significantly higher rate of AKI resolution event in the BCAA group compared to the crystalloid group [86% (77/90) vs.63% (54/86); HR 5.98; 95%CI 5.53-6.44; p <0.05]. Secondary outcomes revealed that in-hospital LOS was shorter in the BCAA group compared to the crystalloid group (4.4±1.6 vs 6±1.8 days; p<0.05). Furthermore, the number of AKI patients requiring hemodialysis was significantly lower in the BCAA group than in the crystalloid group [16.7% (15/90) vs 43% (37/86); HR 6.18; 95%CI 5.70-6.65; p< 0.05].
Conclusion
This study suggests that adding BCAA infusion may offer benefits in the supportive management of AKI. However, due to the inherent limitations of a retrospective analysis, a randomized controlled study is still required for further confirmation.

Keywords：acute kidney injury, BCAA infusion, crystalloid

Poster Presentation：AKI
Poster No.：C0027
Abstract Submission No.：APCN20250372

Management of Early Onset Acute Fatty Liver of Pregnancy with Double Plasma Molecular Adsorption System (DPMAS) in a 36-Year-Old Filipino Woman: A Case Report

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Abstract

Introduction:

Acute Fatty Liver of Pregnancy (AFLP) is a rare, life-threatening condition that usually occurs in the third trimester. This report discusses a 36-year-old Filipino woman who was diagnosed with AFLP in her second trimester. She exhibited jaundice, abdominal pain, nausea, elevated liver enzymes, and tea-colored urine. Prompt diagnosis and treatment, including hemoperfusion, resulted in clinical improvement.

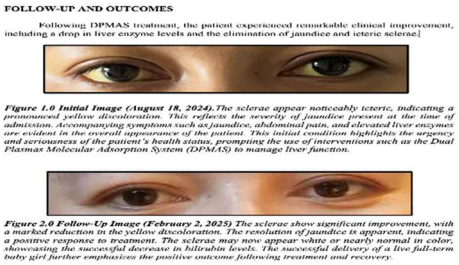
Case Presentation:

A 36-year-old female (G3P1) presented with nausea, abdominal pain, and tea-colored urine, advancing to severe jaundice at 15 6/7 weeks of gestation. Severe liver dysfunction was confirmed by significantly elevated bilirubin and liver enzymes, plasma ammonia levels, and the Swansea criteria. Her medical history included chronic hypertension managed with methyldopa. An abdominal ultrasound indicated mild fatty liver changes. After excluding other conditions like autoimmune hepatitis and intrahepatic cholestasis, the patient was diagnosed with AFLP—a rare complication in early pregnancy. Due to her early gestational age, immediate delivery was not an option. She received supportive therapy comprising vitamin supplementation, antibiotics, and management for chronic hypertension. Hemoperfusion using the Duoble Plasma Molecular Adsorption System (DPMAS) was performed across three sessions, with close monitoring of clinical and laboratory parameters throughout her hospital stay leading to significant clinical improvement, normalization of liver enzymes, and resolution of jaundice. This case underscores the necessity for early diagnosis and the efficacy of hemoperfusion in managing AFLP early in pregnancy.

Conclusion:

This case highlights the necessity of considering AFLP early in pregnancy, despite its usual late onset. The application of DPMAS hemoperfusion, alongside a multidisciplinary approach, led to significant clinical improvements, normalization of liver function tests, and resolution of jaundice. The report emphasizes DPMAS as a potential adjunctive therapy for severe AFLP when immediate delivery is unfeasible. Early recognition and timely diagnosis employing the Swansea criteria, coupled with innovative support strategies, can contribute to favorable maternal outcomes and stress the importance of vigilance in atypical AFLP presentations.

Keywords：Double Plasma Molecular Adsorption System (DPMAS) , Acute fatty liver of pregnancy, second trimester, case report, , Liver failure, Hemoperfusion


FOLLOW-UP AND OUTCOMES

Following DPMAS treatment, the patient experienced remarkable clinical improvement, including a drop in liver enzyme levels and the elimination of jaundice and icteric sclerae.

Figure 1.0 Initial Image (August 18, 2024).The sclerae appear noticeably icteric, indicating a pronounced yellow discoloration. This reflects the severity of jaundice present at the time of admission. Accompanying symptoms such as jaundice, abdominal pain, and elevated liver enzymes are evident in the overall appearance of the patient. This initial condition highlights the urgency and seriousness of the patient's health status, prompting the use of interventions such as the Dual Plasmax Molecular Adsorption System (DPMAS) to manage liver function.

Figure 2.0 Follow-Up Image (February 2, 2025) The sclerae show significant improvement, with a marked reduction in the yellow discoloration. The resolution of jaundice is apparent, indicating a positive response to treatment. The sclerae may now appear white or nearly normal in color, showcasing the successful decrease in bilirubin levels. The successful delivery of a live full-term baby girl further emphasizes the positive outcome following treatment and recovery.

Poster Presentation：AKI
Poster No.：C0028
Abstract Submission No.：APCN20250380

Acute Renal Infarction in Adult Male Filipino with Atrial Fibrillation: A Case Report

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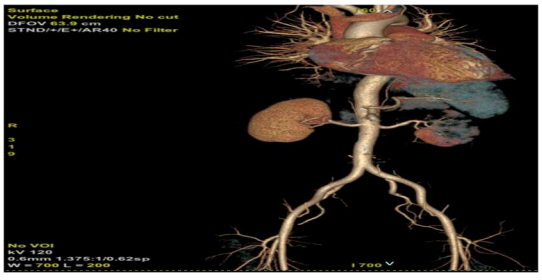
Abstract
Background
Acute Renal Infarction (ARI) is a rare renovascular disease due to abrupt interruption of renal blood flow that can lead to irreversible damage to the kidneys. Studies estimated only 0.004-0.007% incidence.

Case Presentation
A 42 years old Filipino, known diabetic and dyslipidemia presented with acute left lower quadrant pain, without vomiting, afebrile, no urinary symptoms. He is a former smoker. Physical examination revealed blood pressure of 160/100 mmHg, heart rate 109 beats per minute, irregularly irregular heart beat. Abdominal examination showed no hematoma, negative for costovertebral angle tenderness. Blood test showed leukocytosis, and elevated serum creatinine level 1.3 mg/dL, Atrial fibrillation on the ECG. The whole abdomen CT with contrast revealed renal ischemia with thrombi, serum LDH was elevated 1423 U/L. CT angiography of the renal artery revealed left main renal artery thrombosis with resulting severe stenosis of the distal segment and superior and mid segmental branches and renal infarction. Anticoagulant was started.

Discussion
ARI is a rare condition, manifested with acute onset of abdominal pain or flank pain. Risk factors to develop ARI including atrial fibrillation, hypertension, and diabetes mellitus. C-reactive protein, serum lactate dehydrogenase, serum creatinine, and urinalysis could support the diagnosis. CT Angiogram is the golden standard. Urgent revascularization is recommended for complete main renal artery occlusion, or partial major renal artery occlusion of less than 24 hours duration. The other option is anticoagulant.

Conclusion
Early diagnosis can improve the patient's outcome. Revascularization or anticoagulant is the remaining therapy.

Keywords：ARI, renal infarction, AKI, renal artery, revascularization



Poster Presentation：AKI
Poster No.：C0029
Abstract Submission No.：APCN20250395

MSDIF: An Imputation Model for Robust Handling of Missing Data in Multivariate Longitudinal Medical Datasets

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Abstract

Objectives: This study tackles the issue of missing data in multivariate longitudinal medical datasets, focusing on Continuous Veno-Venous Hemodiafiltration (CVVHDF) with Regional Citrate Anticoagulation (RCA). Retrospective data were collected from patients at West China Hospital of Sichuan University between October 2021 and October 2023, covering baseline characteristics and clinical variables. Key treatment parameters like machine model, filter material, blood flow, ultrafiltration speed, and blood calcium levels were also recorded.

Methods: We proposed a novel imputation model, designed for robust handling of missing data in multivariate longitudinal datasets. The model employs a two-stage imputation approach to address both short-term and long-term dependencies within the data. In Stage 1, statistical preprocessing methods, including nearestneighbor imputation, linear interpolation, and correlation-based adjustments, are applied to estimate missing values. In Stage 2, a BiLSTM-based deep learning model refines the initial imputed dataset by capturing temporal dependencies, thereby improving the accuracy of the imputed values.

Results: We compared the performance of the our approach to other established models, including ITransformer, SAITS, and CSDI, by evaluating the imputation results based on metrics such as Mean Absolute Error (MAE), Mean Squared Error (MSE), and Root Mean Squared Error (RMSE). The proposed MSDIF model outperformed existing methods, achieving notably lower error rates (MAE: 0.0049, MSE: 4.08e-05, RMSE: 0.0063).

Conclusions: These results demonstrate that MSDIF provides a highly effective and reliable solution for imputing missing data in longitudinal medical datasets, thus enhancing the integrity of clinical data for analysis and decision-making.

Keywords：Data Imputation, Longitudinal data, Machine learning, regional citrate anticoagulation, Effluent fluid, post-filter, crrt, critically ill

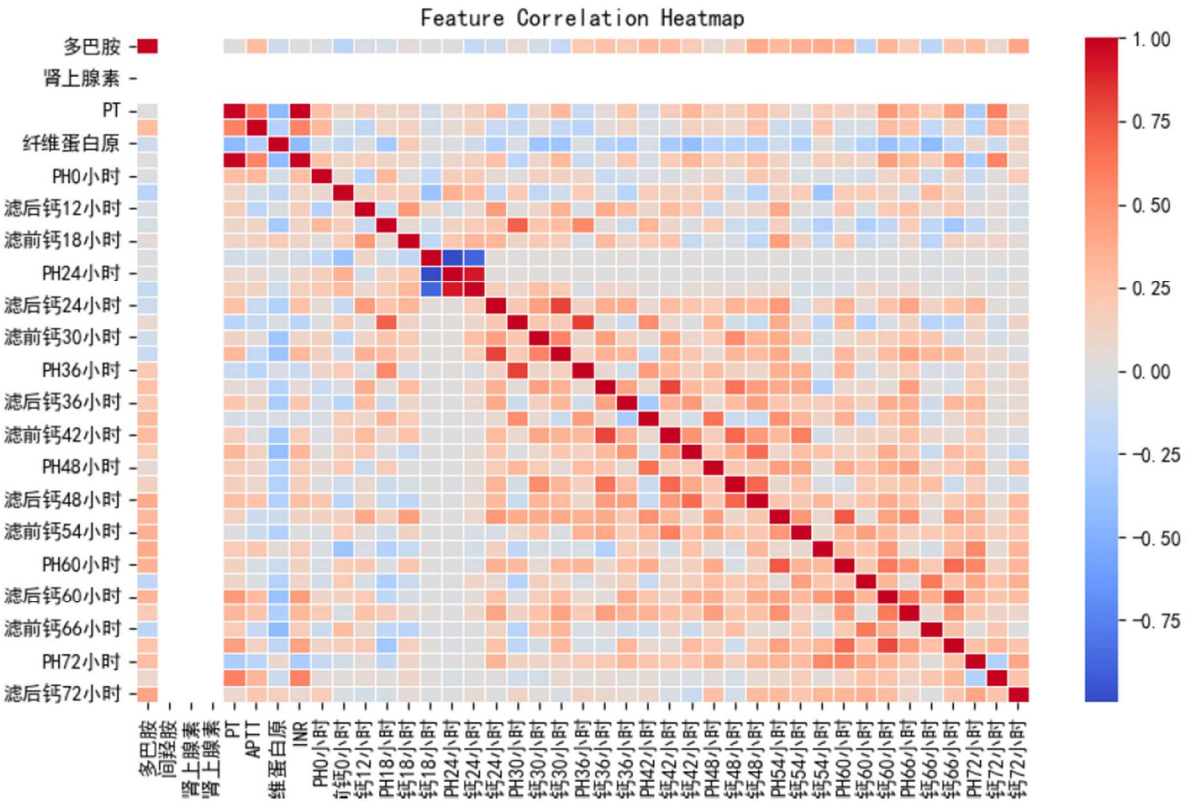

Fig. 1: Feature correlation heatmap.

Poster Presentation：AKI
Poster No.：C0030
Abstract Submission No.：APCN20250426

Beyond Cholesterol: Evaluating the Impact of Statins on Mortality and Hospital Stay in Acute Kidney Injury A Systematic Review and Meta-Analysis

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Abstract
Objectives: Acute kidney injury (AKI) remains a major complication in hospitalized patients, contributing to prolonged hospital stays and increased mortality rates. While statins are primarily prescribed for cardiovascular risk reduction, they also exhibit anti-inflammatory and endothelial-stabilizing properties, which could potentially influence AKI outcomes. This systematic review and meta-analysis evaluates whether statin use is associated with reduced mortality and shorter hospital stays in patients with AKI.

Methods: A systematic literature search was performed in PubMed, Embase, Scopus, and Web of Science from database inception to December 2024. Original observational and interventional studies comparing statin users and non-users in AKI patients were included. The primary outcomes assessed were mortality and hospital length of stay (LOS). Pooled estimates were calculated using a random-effects model, with results reported as odds ratios (OR) for mortality and standardized mean differences (SMD) for LOS, along with 95% confidence intervals (CIs).

Results: A total of eight studies were included in the analysis. Statin use was associated with a statistically significant reduction in hospital LOS [SMD -0.17, 95% CI: -0.29 to -0.06], suggesting a modest but beneficial effect. Pooled mortality data from four studies showed a 17% lower risk of death in statin users [OR 0.74, 95% CI: 0.66–0.82, $p < 0.001$].

Conclusions: This meta-analysis indicates that statin therapy may reduce both hospital length of stay and mortality risk in AKI patients, supporting a possible protective effect beyond cholesterol reduction. Given the limited number of high-quality studies, further randomized trials are necessary to confirm these findings and optimize statin use in AKI management.

Keywords：AKI, Statin Use, Hospital Stay

Poster Presentation：AKI
Poster No.：C0031
Abstract Submission No.：APCN20250006

Acute Kidney Injury: Prevalence and Risk Factors among Filipino Adults

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Abstract
The mortality rate of renal failure has increased among the Filipino population from 2000-2020. To reduce the burden of disease, it is vital to be able to describe the predictors of AKI to help in disease prevention and early detection. This study described the prevalence and risk factors associated with acute kidney injury in a tertiary hospital in Manila, Philippines. The study employed a cross-sectional, retrospective design, which reviewed records of patients diagnosed with AKI from February 2022-January 2023. Based on the review of records among hospitalized individuals, the prevalence of AKI was 22% (n=2508) and 85 deaths were attributed to AKI among 11,400 admissions in the medical-surgical ward. Predictors of AKI using multivariate analysis were cigarette smoking pack years, elevated BUN, and dyslipidemia diagnosis, with p value of <0.001. The odds of having AKI among cigarette smokers, who smoke for more than 5 years is 3.5 times more than those who do not smoke (OR=3.53; 95% CI: 2.3-11.2; p<0.001). Furthermore, the risk of patients with elevated BUN is 4 times higher than those with normal BUN (OR=4.3; 95% CI= 1.2-7.8; p<0.001). Also, the odds of having AKI among those with dyslipidemia diagnosis was 1.5 times higher than those with normal lipid profile (OR=1.56; 95% CI: 1.03-6.94; p<0.001). Based on the results of this study, cigarette smoking for >5 years, BUN >20mg/dl, and dyslipidemia were predictors of AKI among the sample population.

Keywords：acute kidney injury, Filipino patients

Poster Presentation：AKI
Poster No.：C0032
Abstract Submission No.：APCN20250449

Urine Neutrophil Gelatinase-Associated Lipocalin (uNGAL) as a Superior Early Biomarker for Acute Kidney Injury (AKI) in Critical Ill Patients : Evidence from a Prospective Study

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Abstract
Introduction : Early detection is crucial since acute kidney injury (AKI) has been reported to raise mortality rates in critically ill individuals admitted to the intensive care unit (ICU). The cut-off level of urine neutrophil gelatinase-associated lipocalin (uNGAL) for the diagnosis of AKI has been the subject of very few investigations. Our objectives were to find out the cut-off level of uNGAL for diagnosing AKI in critically ill patients in the ICU and the accuracy of uNGAL as a biomarker for early detection of AKI.

Methods : 156 patients were prospectively included from the ICU between January 2024 and May 2025. The patients were split into two groups, 104 patients with acute kidney injury and 52 patients without AKI, based on the Kidney Disease Improving Global Outcomes (KDIGO) criteria for diagnosing AKI. Analysis was done on the patients' serum creatinine and uNGAL 24 hours after they were admitted. We compared the variations in uNGAL between patients with and without AKI. Additionally, the sensitivity and specificity of uNGAL and sCr for the diagnosis of AKI in the ICU patients were assessed using the receiver operating characteristic (ROC) curve, and the differences in serum creatinine and uNGAL between patients with and without AKI have been evaluated.

Results : At 24 hours following ICU admission, there was no significant difference in sCr (P = 0.154), but there were substantial differences in uNGAL levels between patients with and without AKI (P = 0.001). Patients admitted to ICU at 24 hours had uNGAL and sCr area under the curves of 0.764 (95% CI, 0.679 to 0.857) and 0.561 (95% CI, 0.443 to 0.672), respectively. The sensitivity and specificity were 0.736 and 0.729, respectively, while the cut-off value of uNGAL in patients admitted to the ICU at 24 hours was 165 ng/mL. Compared to sCr, uNGAL has a higher sensitivity.

Conclusion : In critically ill patients, uNGAL predicts the development of AKI with a comparatively high sensitivity and specificity, outperforming sCr and having some clinical early diagnostic utility. In critically ill patients in the ICU, uNGAL may serve as an indicator for the early detection of AKI.

Keywords：acute kidney injury, urine neutrophil gelatinase-associated lipocalin (uNGAL), critical ill patient

Poster Presentation：AKI
Poster No.：C0033
Abstract Submission No.：APCN20250455

The effect of the nutritional markers on sarcopenia in patients with acute kidney disease

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Abstract

Loss of muscle mass is an extremely frequent complication in patients with acute kidney disease (AKD). The aims of study to provide the impact of nutrition markers on sarcopenia in patients with AKD. Methods: The study included 75 patients (31 women and 44 men) from OPD in National Cheng Kung University Hospital. Mean age 63.5 16.0 years old. The same renal specialist nutritionist provided dietary consults and nutritional assessment. Nutritional assessment included calorie and three major nutrient intakes by 24 hours diet recall, anthropometry measurement(triceps skinfold; TSF, mid arm circumference; MAC, mid arm muscle circumference; MAMC, mid arm muscle area; MAMA)、muscle strength (Hand grip strength; HGS) (Asian countries criterion: male < 28 kg and female < 18 kg indicates sarcopenia)、nutritional status by 7 points-subjective global nutritional assessment (SGA), biochemistry parameters as albumin. Results: There were 65.3% AKD patients with sarcopenia, the sarcopenia group had old age (67.8 14.0 vs 54.3 17.7 years old, P < 0.005), lower energy (25.4 2.4 vs 28.8 2.7 Kcal/Kg IBW, P < 0.005) and carbohydrate intake (178 60 vs 219 37 g/day, P < 0.005). In anthropometry measurement, MAC(25.2 3.0 vs 27.8 4.4 cm , P < 0.05), MAMC(19.8 2.3 vs 22.4 3.7 cm , P < 0.005), MAMA (31.5 7.6 vs 41.1 13.4 cm2 , P < 0.005) had significantly lower in the sarcopenia patients. In 7-points SGA, the sarcopenia group had significantly lower the no sarcopenia group: appetite scale (4.5 1.5 vs 5.7 0.9 scale, P < 0.005), GI function scale(4.5 1.5 vs 5.6 0.7 scale, P < 0.005), activity scale(3.4 1.4 vs 5.0 1.1scale, P < 0.01), stress scale(3.9 0.8 vs 4.7 0.6 scale, P < 0.0001), muscle mass scale(3.9 1.2 vs 5.1 0.9 scale, P < 0.0001), edema scale(4.2 1.5 vs 5.2 0.9 scale, P < 0.005), and total SGA scale(3.9 1.2 vs 5.0 0.9 scale, P < 0.001). But all biochemistry parameters, only serum albumin in the sarcopenia group had significantly lower the no sarcopenia group (3.5 0.6 vs 4.0 0.4 g/dl, P < 0.005). Conclusions: In the study, we found that energy intake, specially from carbohydrate intake is important for sarcopenia patients, 7- point SGA is a good indicator for predict sarcopenia in AKD patients.

Keywords：acute kidney disease, energy, sarcopenia, 7-point SGA

Poster Presentation：AKI
Poster No.：C0034
Abstract Submission No.：APCN20250460

Renal Recovery After Timely Urologic Intervention in Acute-on-Chronic Kidney Disease : A Case from a Resource-Limited Hospital

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Abstract
Introduction:
Obstructive acute kidney injury (AKI) is a reversible condition, but timely intervention is critical to prevent progression. In resource-limited hospitals with strict national insurance regulations, clinical decision making can be challenging, especially when urgent dialysis is not readily available.
Methods:
We report a case of a 70-year-old woman with history of diabetes and hypertension, presenting with right upper abdominal and epigastric pain, nausea, vomiting, and decreased appetite for three days. She had no fever, hematuria, or oliguria. Her vital signs were stable (BP 140/70 mmHg, HR 107 bpm, temperature 370 C). Physical examination showed epigastric and right upper quadrant tenderness without murphy sign and costovertebral angle (CVA) tenderness. Laboratory results revealed normocytic normochromic anemia (Hb 10.6 g/dL), leucocytosis (27,000/µL), thrombocytopenia (122,000/µL), severe hyperglycemia (random blood glucose 416 mg/dL), elevated urea (148 mg/dL), creatinine (5.83 mg/dL), and eGFR of 8 mL/min/1.73 m2. Despite preserved urine output and stable vital signs, abdominal ultrasound was performed due to localized pain, revealing mild right hydronephrosis, multiple urolithiasis, and suspected pyonephrosis. Empiric antibiotics with Ceftriaxone 2 gr/day IV and fluid resuscitation 2L/day were initiated.
Results:
After 24 hours, renal function worsened (urea 157 mg/dL, creatinine 6.06 mg/dL, potassium 5.3 mmol/L), prompting urgent urology consultation. Due to national insurance limitations allowing only one inpatient procedure, the decision was made to prioritize immediate urologic intervention over dialysis. A double-J stent placement and drainage procedure were performed. The patient demonstrated significant improvement in renal function post procedure (creatinine 2.76 mg/dL, urea 90 mg/dL), confirming the diagnosis of obstructive acute-on CKD. Glycemic control was also successfully achieved. Urine culture revealed Klebsiella aerogenes, sensitive to ceftriaxone. The leucocyte decreased to 14,000/µL post- procedure.
Conclusion:
This case highlights the importance of early imaging and prompt urological intervention in suspected obstructive acute-on CKD, even when the initial symptoms are non specific. It also reflects the real-world challenges in managing nephrology cases in resource-limited hospitals, where insurance and procedure access may delay ideal care. Strategic clinical decisions can still lead to full renal recovery, avoiding unnecessary dialysis.

Keywords：Acute-on-CKD, obstructive AKI, pyonephrosis, urologic intervention

Poster Presentation：AKI
Poster No.：C0035
Abstract Submission No.：APCN20250525

Effects of temperature and air polution under climate change in acute kidney injury outcomes

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Abstract

Background: Acute kidney injury (AKI) is a serious renal condition with significant public health implications. Emerging evidence suggests that environmental factors, particularly rising temperatures and worsening air pollution associated with climate change, may contribute to the incidence and severity of AKI. This study aims to project the combined effects of temperature and air pollution on AKI-related emergency department visits and hospital admissions under four future climate scenarios..

Study design: A retrospective study was conducted on 12,156 AKI patients across five hospitals in three Indonesian cities. The radial basis function was employed to estimate past exposure to temperature, PM2.5, and relative humidity (RH) for each patient over 1-year, 5-year, and 10-year periods. Future temperature projections were derived from global climate model (GCM) outputs, ranging from the optimistic (SSP126) to the pessimistic (SSP585) scenarios. Multinomial logistic regression and exposure-response analysis were used to estimate the future risk of AKI-related emergency visits and hospital admissions

Results: Among the study population, key demographic and clinical characteristics were summarized, with a notable proportion experiencing AKI-related hospitalizations. Long-term exposure to rising ambient temperatures was significantly associated with increased odds of AKI severity and hospital admissions. A 1°C increase in the 1-, 5-, and 10-year average temperature was associated with progressively elevated odds ratios (ORs) for AKI-related hospitalizations, reaching up to 1.332 (95% CI: 1.327–1.338) for short-term exposures. Additionally, a 1 μg/m³ increase in PM2.5 over the 5- and 10-year averages was associated with a 1.002–1.004-fold increase in the odds of severe AKI outcomes (95% CI: 1.001–1.004). Relative humidity showed mixed effects: a 1% increase in 10-year average RH was associated with a slight reduction in the odds of severe AKI (OR: 0.996, 95% CI: 0.995–0.998), while higher RH levels were linked to increased hospitalization risk. Non-linear exposure–response relationships revealed U-shaped associations between temperature and AKI outcomes, with the lowest risks observed at 19–22°C. Future projections under four Shared Socioeconomic Pathways (SSP126–SSP585) indicated temperature-related AKI risks will increase through 2035, with projected hospitalization risks rising up to 32.4% and the highest increases in severe AKI cases occurring under high-emission scenarios.

Conclusion: Rising ambient temperature and increasing air pollution, particularly fine particulate matter, are significantly associated with higher risks of AKI severity and hospital admissions. These environmental impacts are expected to worsen under future climate change scenarios.

Keywords：acute kidney injury, air pollution, climate change, extreme weather, nephrology

Poster Presentation：AKI
Poster No.：C0036
Abstract Submission No.：APCN20250531

Nephrotic Syndrome and Reflex Anuria in Unilateral Ureteral Obstruction: A Rare Case Report

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Abstract

Introduction: Massive proteinuria is typically associated with glomerular kidney diseases. Reflex anuria, a rare phenomenon, has been reported in a limited number of patients with mild unilateral ureteral obstruction, presenting as acute kidney injury (AKI) with oligo-anuria. The simultaneous occurrence of massive proteinuria and reflex anuria in a single case is exceedingly rare and intriguing. Whether these two phenomena represent a mere coincidence or a rare manifestation of unilateral ureteral obstruction remains unclear, as the underlying mechanisms are not yet fully understood.

Method: We report the case of a 28-year-old woman who presented with generalized anasarca, accompanied by periorbital edema, right-sided pleural effusion, ascites, and pitting edema of both upper and lower extremities. She also reported decreased urinary frequency and volume, with a total urine output of approximately 200 mL over 24 hours. Comprehensive data, including laboratory findings and imaging studies, were systematically collected.

Result: On admission, laboratory results showed ureum level of 142 mg/dL, serum creatinine of 4.43 mg/dL, serum albumin of 1.25 g/dL, total cholesterol of 431 mg/dL, triglycerides of 554 mg/dL, HDL of 19 mg/dL, and LDL of 301.2 mg/dL. Urinalysis revealed cloudy yellow urine, negative glucose, +4 protein, pH 6.5, +3 blood, leukocytes 500, epithelial cells 33–35, foamy urine (+), nitrite (-), and no sediment. A 24-hour urine protein analysis showed a total urine volume of 550 mL, quantitative urine protein of 4,977 mg/L, and total protein excretion of 2,737.35 mg/24 hours. Renal ultrasonography revealed normal cortical echotexture in both kidneys and a 20.3 mm obstructive stone in the left kidney, with the right kidney and urinary bladder appearing normal. Unfortunately, due to clinical deterioration, the patient passed away before a definitive histopathological diagnosis could be established.

Conclusion: This case highlights a rare presentation of nephrotic syndrome with reflex anuria secondary to mild unilateral ureteral obstruction. Kidney biopsy plays a critical role in such cases, and nephrologists should consider reflex anuria as differential diagnosis when evaluating patients with acute kidney injury.

Keywords：Nephrotic syndrome, Reflex anuria, AKI, ureteral obstruction

Poster Presentation：AKI
Poster No.：C0037
Abstract Submission No.：APCN20250542

Personalized Survival Prediction Model for Acute Kidney Injury Patients

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Abstract

Background and Objective: Acute kidney injury (AKI) has high mortality and a significant risk of progression to chronic kidney disease (CKD) or end-stage kidney disease (ESKD). Traditional models often lack personalized risk assessments due to the heterogeneity within the AKI patient population and complex risk factors. This study aims to develop a more accurate, personalized survival prediction model using the evolutionary learning-based Cox Proportional Hazards model (EL-AKICox), offering individualized survival predictions, risk stratification, and visualized survival curves to support clinical decision-making.

Methods: Data were extracted from the data repository, encompassing 291,945 records from 2017 to 2022. This dataset identified a cohort of 30,271 AKI samples for analysis, including 45 original features such as demographics, laboratory values, and medication records. Utilizing 89 candidate features, including 44 derived features, the EL-AKICox method effectively identifies a minimal yet optimal feature set and constructs a mathematical model with superior predictive accuracy.

Results: The EL-AKICox method identified 29 risk factors, achieving C-index values of 0.732, 0.720, and 0.736 on the training, test, and imputed test sets, respectively. It classifies patients into high- and low-risk groups based on risk scores, offering personalized survival predictions. Five key risk factors—GOT, BUN, creatinine, steroid injection usage, and age—combined with risk scores, facilitate targeted interventions, enabling more effective and tailored treatment strategies for high-risk AKI patients.

Conclusions: The EL-AKICox model offers accurate, personalized survival predictions for AKI patients, improving risk stratification and clinical applicability with fewer features. It provides precise risk assessment to guide clinical decisions.

Keywords：Acute kidney injury, Chronic kidney disease, End-Stage kidney disease, Personalized, Prediction model, Evolutionary learning, Survival analysis

Poster Presentation：AKI
Poster No.：C0038
Abstract Submission No.：APCN20250564

Acute Kidney Injury in Severe Leptospirosis: Case Study

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Abstract

Introduction: Leptospirosis is a zoonotic infection caused by Leptospira species, transmitted through contact with contaminated water. It presents with a wide clinical spectrum, ranging from asymptomatic disease, mild illness to severe disease with multi-organ involvement. Acute kidney injury (AKI) is a recognized early complication of severe leptospirosis, reported in up to 60% of hospitalized patients. We report three cases of leptospirosis-associated AKI.

Methods:

Case 1: A 25-year-old man was admitted with fever, jaundice, myalgia, gastrointestinal bleeding, and oliguria following contaminated water exposure. Clinical assessment indicated AKI and systemic involvement. Management included intravenous fluids, ceftriaxone, diuretics, and supportive care. Diuresis improved by the fourth day, with full clinical recovery observed by day twelve.

Case 2: A 16-year-old male presented with fever, jaundice, gastrocnemius muscle tenderness, epistaxis, and reduced urine output. He had recent exposure to contaminated water. Empirical antibiotic therapy and supportive measures, including fluid resuscitation and diuretics, resulted in progressive improvement. Normal urine output and clinical stability were achieved within 12 days.

Case 3: A 31-year-old man developed fever, jaundice, muscle pain, hematemesis, melena, and oliguria after contaminated water exposure. He was clinically diagnosed with severe leptospirosis complicated by AKI and bleeding. Conservative treatment with fluids, antibiotics, and proton pump inhibitor led to significant improvement by the eleventh day of hospitalization.

Investigations at the time of admission and observation of several days for three cases are depicted in Table 1.

Results: Renal involvement in leptospirosis is caused by both direct nephrotoxic effects of Leptospira and indirect mechanisms such as dehydration, rhabdomyolysis, and hypoxia due to hemodynamic instability. All patients in this series developed acute kidney injury (AKI). Antibiotic therapy is the mainstay of treatment. Early fluid resuscitation and maintaining urine output above 0.5 mL/kg/h are key to preventing or mitigating AKI. In cases of oliguria or poor diuretic response, loop diuretics may be used. Hemodialysis is reserved for severe cases with uremia or fluid overload.

In our series, two patients had oliguria with limited response to fluids, requiring diuretics. All showed clinical and renal improvement with conservative management, and none required dialysis. These cases highlight the effectiveness of early, supportive treatment in leptospirosis-associated AKI.

Conclusion: Three cases of AKI in Leptospirosis with have been reported. After administration of antibiotics, fluid therapy and diuretic the patient's condition improved from a clinical and laboratory standpoint without Renal Replacement Therapy (RRT).

Keywords：Leptospirosis; Zoonotic Infection; Acute Kidney Injury

Tabel 1

Laboratory findings of evaluated patients

Examination	Case 1		Case 2		Case 3	
	Day 1	Day 4	Day 1	Day 12	Day 1	Day 11
Hemoglobin (g/dL)	14.5	13.1	10.9	11	10.1	9
Hematocrit (%)	43	37	29	31	28	22.8
Leucocyte (x1000 cell/uL)	23.91	19.43	15.22	8.81	13.77	8.2
Thrombocyte (x1000 cell /uL)	69.0	161.0	18.0	83.0	29.0	151.0
Natrium (mmol/L)	131		135		120	129.7
Kalium (mmol/L)	4.5		3.9		2.9	3.3
Chloride (mmol/L)	96		100		87	98.3
Calcium (mmol/L)	1.6				2.0	
ALT (U/L)	64		65		63	
PT	12.8		13.7		13.1	
APTT	28.6		34.6		31.3	
AST (U/L)	56		49		23	
Albumin (mg/dL)	2.60		3.2		3.0	
Creatine (mg/dL)	6.1	0.9	6.1	0.7	2.7	1.2
Urea (mg/dL)	377	38	230	33	150	81
eGFR(mL/min/1.73m2)	11	102	12.2	148.6	27.5	69.7
Total Bilirubin (mg/dL)	33.9		14.2		48.4	4.64
Conjugated Bilirubin (mg/dL)	28.5		12.9		37.30	4.02
IgM Anti-Leptospira	Positif		Positif		Positif	

Poster Presentation：AKI
Poster No.：C0043
Abstract Submission No.：APCN20250616

A Bidirectional Study of Change in The Estimated Glomerular Filtration Rate Following Acute Pyelonephritis In Diabetic Patients

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Abstract

Introduction:

It is widely held that urinary tract infections are more common and more severe among diabetic patients. Acute kidney injury (AKI) in acute pyelonephritis can occur due to various reasons. The resulting drop in glomerular filtration rate (GFR) can increase the risk of chronic kidney disease (CKD) in diabetics and subsequently lead to an early occurrence of end stage renal disease.

Aims & objectives:

The aim of this study was to assess the change in eGFR following acute pyelonephritis in diabetic patients and to follow the renal outcome 6 months from the onset of acute pyelonephritis.

Materials and methods:

It was a bidirectional observational study conducted at a tertiary care referral hospital. Clinical, biochemical, radiological and treatment data of 70 diabetic patients admitted with acute pyelonephritis was collected and followed for 6 months. Patients were divided into "CKD" and "Non-CKD" groups based on the history and baseline renal function records and their outcomes were analyzed.

Results:

Most of the patients (34%) were in their 6th decade. Females were the majority (58%). 27 patients had chronic kidney disease at baseline. Among patients with CKD, 1/3rd had diabetic nephropathy. Mean baseline serum creatinine (in mg/dl) in CKD group and Non-CKD group was 1.81± 0.48 and 0.94 ± 0.13 respectively. The mean eGFR (in ml/min/1.73 m2) at baseline in the CKD group was 37.34 ± 10.08 and 75.01 ± 14.79 in the Non-CKD group.

Amongst all patients, 77.1% had acute kidney injury following acute pyelonephritis. Of the 27 CKD patients, 10 had complete recovery with stable CKD, 12 had incomplete recovery with stable CKD, and 5 patients had worsening eGFR as the final outcome at 6 months.

Of the 43 Non-CKD patients, 26 had complete recovery, 16 developed incident CKD, and 1 patient had progressive CKD, as the final outcome after 6 months. Advanced age, poor glycemic control, need for ICU admission, hemodialysis and urological interventions were significantly associated with development of incident CKD.

Conclusion:

Following an episode of acute pyelonephritis in patients with diabetes mellitus, the incidence of acute kidney injury leading to a drop in eGFR was quite high. A high index of clinical suspicion, identification of the prognostic parameters, and an early intervention if required, are essential to achieve a better outcome in diabetics with acute pyelonephritis.

Keywords：acute kidney injury, pyelonephritis, GFR, CKD, end stage renal disease, diabetes mellitus

	Total N = 70	CKD N =27	Non-CKD N = 43	**p value**
Haemoglobin	11.19 ± 1.84	10.37 ± 1.61	11.71 ± 1.8	**0.02**
Total count	13891 ± 4948	13336 ± 5022	14240 ± 4928	**0.461**
Hba1c	8.79 ± 1.98	8 ± 1.4	9.3 ± 2.2	**0.01**
Mean Serum Creatinine (mg/dl)				
Baseline	1.2 ± 0.5	1.81 ± 0.48	0.94 ± 0.13	**<0.01**
Peak Serum Creatinine	2.73 ± 1.9	3.6 ± 2.15	2.19 ± 1.7	**0.03**
1st month	1.6 ± 0.75	2.18 ± 0.67	1.24 ± 0.55	**<0.01**
3rd month	1.62 ± 0.84	2.31 ± 0.89	1.19 ± 0.45	**<0.01**
6th month	1.62 ± 0.87	2.38 ± 0.92	1.15 ± 0.36	**<0.01**
Mean eGFR (ml/min/1.73 m²)				
Baseline	60.48 ± 22.64	37.34 ± 10.08	75.01 ± 14.79	**<0.01**
Lowest GFR	32.65 ± 19.74	21.07 ± 10.71	39.92 ± 20.7	**<0.01**
1st month	50.13 ± 24.56	30.6 ± 9.44	62.4 ± 23.16	**<0.01**
3rd month	48.84 ± 23.84	30.14 ± 11.28	60.57 ± 22.12	**<0.01**
6th month	50.78 ± 24.76	29.01 ± 10.22	64.45 ± 21.13	**<0.01**
AKI [n (%)]				
No AKI	16 (22.9%)	7 (25.9%)	9 (20.9%)	**0.276**
Stage I	29 (41.4 %)	8 (29.6 %)	21 (48.8%)	
Stage II	9 (12.8%)	3 (11.1 %)	6 (14%)	
Stage III	16 (22.9%)	9 (33.3%)	7 (16.3 %)	

Poster Presentation：AKI
Poster No.：C0044
Abstract Submission No.：APCN20250621

Increased Risk of Major Adverse Kidney Events Following Herpes Zoster After COVID-19

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Abstract

Herpes zoster (HZ), a reactivation of latent varicella-zoster virus, has been increasingly documented in patients recovering from COVID-19. While both conditions involve immune dysregulation, the impact of post-COVID HZ on long-term kidney outcomes remains unclear. In this retrospective global cohort study using the TriNetX research network, we analyzed over 9 million adults diagnosed with COVID-19 between January 2020 and January 2022. Patients who developed HZ within one year of their COVID-19 diagnosis were identified and compared to 1:1 propensity score–matched controls without HZ. Matching was performed based on demographics, comorbidities, medications, and laboratory markers. The primary outcome was the risk of major adverse kidney events (MAKE), defined as a composite of acute kidney injury, sustained decline in estimated glomerular filtration rate (eGFR), or progression to end-stage renal disease. Over a three-year follow-up period, patients with post-COVID HZ showed a significantly higher risk of MAKE (HR 1.940; 95% CI: 1.866–2.017) compared to controls. Subgroup analyses revealed that older adults, those with diabetes, pre-existing renal impairment, or elevated inflammatory markers at baseline were at particularly elevated risk. These findings suggest that HZ following COVID-19 is not merely a cutaneous reactivation but may indicate underlying systemic immune imbalance that predisposes to renal injury. Clinicians should be aware of this association and consider proactive kidney function monitoring in patients who develop HZ during the post-COVID period. Our results highlight the need for long-term renal surveillance strategies in this high-risk population and support further inves-tigation into shared pathophysiological mechanisms linking viral reactivation and kidney injury.

Keywords：COVID-19, herpes zoster, kidney injury

Poster Presentation：AKI
Poster No.：C0045
Abstract Submission No.：APCN20250684

Scleroderma Renal Crisis with ANA-Negative Serology and Absent Raynaud's Phenomenon: A Case Report in a Middle-Aged Diabetic Male

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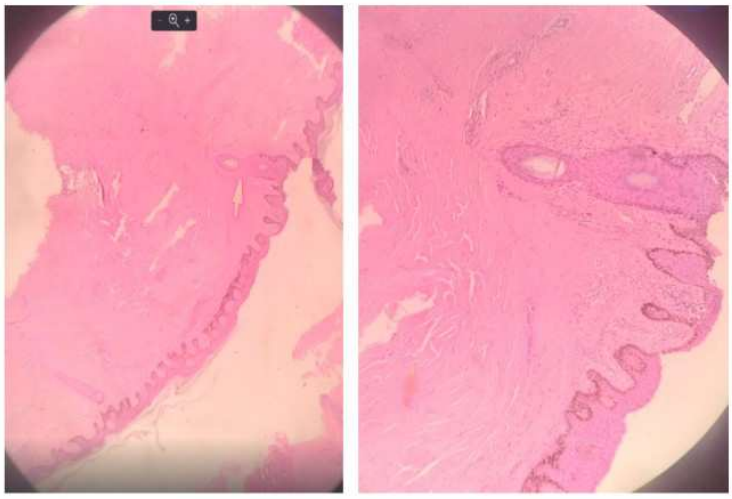
Abstract
Background:
Scleroderma renal crisis (SRC) is a rare but life-threatening complication of systemic sclerosis (SSc), typically presenting with acute kidney injury (AKI), malignant hypertension, and microangiopathic hemolytic anemia. Most cases are associated with antinuclear antibody (ANA) positivity and Raynaud's phenomenon (RP), which serve as clinical hallmarks of SSc. However, emerging literature recognizes a subset of ANA-negative SSc patients, often lacking RP, who may present with more fibrotic and visceral organ involvement, posing significant diagnostic challenges. Early recognition of SRC in such atypical scenarios is essential to avoid irreversible organ damage.
Case:
We report the case of a 49-year-old male with a history of diabetes mellitus, hypertension, and chronic kidney disease (CKD) who presented with a 2-month history of progressive lower limb skin tightening and a 25-day history of generalized edema. He also reported recent-onset oliguria with dark-colored urine but denied symptoms suggestive of RP or joint involvement. Physical examination revealed thickened, shiny skin over the thighs and legs, generalized edema, and signs of pulmonary hypertension. Laboratory investigations showed anemia, elevated inflammatory markers, worsening renal function (creatinine 4.5 mg/dL), and nephrotic-range proteinuria (6.59 g/24h). Urine microscopy revealed active sediment. ANA was negative, but anti-Scl-70 and anti-RNP antibodies were positive. Imaging demonstrated cardiomegaly and pulmonary hypertension. Skin biopsy confirmed features consistent with systemic sclerosis. The patient was diagnosed with scleroderma renal crisis on a background of CKD. Hemodialysis and ramipril were initiated, along with bosentan for pulmonary hypertension. A multidisciplinary team recommended immunosuppressive therapy with mycophenolate mofetil.
Conclusion:
This case highlights the diagnostic complexity of SRC in the absence of ANA and RP. Clinicians must recognize that systemic sclerosis can present atypically, particularly in male patients with predominant fibrotic manifestations and internal organ involvement. ANA-negative SSc may carry a higher risk of severe complications such as SRC. A high index of suspicion, thorough evaluation, and prompt initiation of ACE inhibitors and supportive care are critical to improving prognosis. Multidisciplinary management is essential in guiding diagnosis and treatment decisions in such complex cases.

Keywords：Scleroderma renal crisis, ANA-negative SSc

Skin biopsy from left leg



Section shows skin and subcutis. Epidermis is thin. Dermis shows adnexal structures and broad bands of collagen fibers and mild fibrovascular infiltration of chronic inflammatory cells.

Diagnosis: Connective tissue disease, compatible with scleroderma

Poster Presentation：AKI
Poster No.：C0046
Abstract Submission No.：APCN20250692

Amphiregulin, an Essential Factor involved in Kidney Development, is Detectable in Patients with Acute Kidney Injury

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Abstract
Introduction: Amphiregulin (AREG), which acts as one of the ligands for epidermal receptor growth factor receptor, plays a crucial role in tissue repair, inflammation, and immunity.The regulation of morphogenesis and regeneration across various organs involves common regulatory factors. AREG plays an essential role in kidney development. However, its function in the adult kidney remains unclear. We investigate whether urinary AREG can be detected in patients with acute kidney injury (AKI) and whether it could serve as a noninvasive biomarker of disease activity in AKI.
Methods: Between October 2020 and April 2024, we enrolled 225 AKI patients treated at our department and 19 healthy controls. The study protocol was approved by the ethics committee of our institution (approval number 2487). Deceased donor kidney transplant recipients were also included in the study, as ischemia-reperfusion injury plays a role in their pathology. Serum and urinary AREG levels were measured using ELISA. We analyzed the correlations of urinary AREG levels with established AKI biomarkers and various clinical parameters.
Results: Urinary AREG, which was undetectable in healthy individuals, was significantly elevated in AKI patients (0.0 ± 0.0 vs. 20.0 ± 26.0 ng/mL, $p < 0.001$). In stages of the KDIGO classification, urinary AREG levels were positively correlated with the severity of AKI (stage 1: 9.45 ± 10.6 ng/mL, $p = 0.27$; stage 2: 22.3 ± 22.7 ng/mL, $p < 0.01$; stage 3: 31.7 ± 26.6 ng/mL, $p < 0.001$). Significant correlations were observed between urinary AREG and serum creatinine, urinary protein, urinary NAG, urinary NGAL, urinary KIM-1, and urinary β2-microglobulin, but not with urinary L-FABP. No significant correlation was found between urinary and serum AREG, suggesting that urinary AREG originates from the kidney rather than from the bloodstream. Among the various etiologies of AKI, urinary AREG levels were most significantly elevated in recipients of deceased donor kidney transplants. In these patients, urinary AREG levels rapidly became undetectable following transplantation once dialysis was successfully discontinued. However, urinary AREG levels remained elevated in patients who could not be weaned off dialysis due to severe infections. The immunostaining analysis revealed the absence of AREG in normal human kidneys, whereas its presence was detected in the tubular cells of kidneys from patients with AKI.
Conclusion: Urinary AREG levels may reflect the severity of tubular injury caused by renal ischemia in patients with AKI.

Keywords：AKI, Urinary Amphiregulin

Poster Presentation：AKI
Poster No.：C0047
Abstract Submission No.：APCN20250698

Dickkopf-3, a Key Driver of Renal Fibrosis, is Increased in the Urine of Patients with Tubulointerstitial Nephritis

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Abstract

Introduction: The WNT-β-catenin signaling pathway is essential in embryogenesis and is usually suppressed in the adult kidney. However, this pathway is reactivated in response to renal injury. Dickkopf-3 (DKK-3), an endogenous inhibitor of the WNT signaling pathway, is secreted by stressed tubular epithelial cells and has been implicated in the progression of renal fibrosis. We recently reported that urinary DKK-3 levels are elevated in acute kidney injury. However, its role in tubulointerstitial nephritis (TIN) remains unclear. This study aimed to explore whether DKK-3 can be detected in the urine of patients with TIN and urinary DKK-3 could serve as a non-invasive biomarker of disease activity in TIN.

Methods: A total of thirteen TIN patients treated between December 2020 and December 2022, and healthy volunteers (n=15) were enrolled in this study. The study protocol was approved by the ethics committee on human research of our institution (approval number 2487). Written informed consent for participation was obtained from all patients and control subjects. Urinary and serum DKK-3 levels were measured using ELISA. The relationships between urinary DKK-3 and renal function, urinary protein levels, and AKI biomarkers were assessed. Immunohistochemical analysis of renal biopsy specimens was performed to examine the localization of DKK-3 in the kidney of TIN patients. Changes in urinary DKK-3 levels following immunosuppressive treatment were also evaluated.

Results: Urinary DKK-3 levels, which were nearly undetectable in healthy individuals, were significantly elevated in patients with TIN (1.02 ± 0.06 ng/mL vs. 35.8 ± 11.1 ng/mL, $p<0.001$). Urinary DKK-3 levels showed significant correlations with urinary protein concentration, urinary NGAL, and urinary β2-microglobulin. However, no significant correlations were observed between urinary DKK-3 and serum creatinine, eGFR, BUN, urinary KIM-1, urinary NAG, and CRP. Urinary DKK-3 level was not correlated with serum DKK-3, indicating that urinary DKK-3 is primarily derived from the kidneys rather than the bloodstream. Immunohistochemical analysis demonstrated that DKK-3 was specifically localized to megalin-positive proximal tubular epithelial cells in normal human kidneys. Furthermore, in addition to tubular cells, DKK-3 was also detected in infiltrating CD68-positive macrophages within the interstitial regions of kidneys from patients with TIN. In the majority of cases, urinary DKK-3 levels were observed to decrease following immunosuppressive treatment.

Conclusion: Urinary DKK-3 may represent a valuable biomarker for monitoring tubular injury and tubulointerstitial inflammation in patients with TIN.

Keywords：Dkk-3, tubulointerstitial nephritis, biomarker

Poster Presentation：AKI
Poster No.：C0048
Abstract Submission No.：APCN20250699

Clinicoetiopathological Profile of Granulomatous Interstitial Nephritis In A Tertiary Care Centre - A Retrospective Study

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[2] Department of Pathology, CMC Vellore

Abstract
Objectives
Granulomatous interstitial nephritis (GIN) is a rare biopsy diagnosis detected in up to 0.5-0.9% of all renal biopsies. This study aims at studying clinicopathological profile of GIN in our Centre.
Methodology
In this retrospective study from 2010-2024, all adult patients > 18 years of age with biopsy-proven GIN were included. Relevant clinical, histopathological and laboratory data were retrieved from the hospital clinical workstation and records. Statistical analysis was performed using descriptive and inferential statistics on SPSS version 21.
Results
36 patients had histological diagnosis of GIN. Mean age at diagnosis was 42.78 +/-16.32 years. Median follow up duration was 12 months. 52.8% patients were males. Most common etiology was sarcoidosis (27.8 %[n=10]) followed by idiopathic (25%[n=10]), drug induced GIN (22.2%[n=8]) and tuberculosis (13.9%[n=5]). Rare causes included Vasculitis [n=3] and AL amyloidosis[n=1]. Most common drug causing GIN was antibiotics (quinolones and rifampicin). Most patients had unexplained renal dysfunction with sub-nephrotic proteinuria. 5 patients required RRT at diagnosis. Mean creatinine and eGFR at biopsy was 4.11mg/dL and 30.07ml/min/1.73m2. 29 patients received steroids, and 8 patients received ATT (5 patients had evidence of TB and 3 patients received empirical ATT). Patients with vasculitis and amyloidosis received disease-specific treatment. Complete recovery was defined as return to baseline or normal creatinine/eGFR at follow up and partial recovery was defined as improvement in eGFR/creatinine. 52.7% of patients recovered completely or partially with treatment,5 patients were dialysis dependent. Mean creatinine and eGFR at follow up were 2.49mg/dL and 46.19 ml/min/1.73m2 respectively.
Conclusion
GIN is an unusual histological diagnosis in patients presenting with unexplained renal dysfunction. It has varied etiologies and has good patient outcomes with treatment. Data is limited to incidental case reports and series, and there is a need for large-scale studies comparing treatment outcomes.

Keywords：GIN, Granulomatous interstitial nephritis, Sarcoidosis , Tuberculosis , AKI

Poster Presentation：AKI
Poster No.：C0049
Abstract Submission No.：APCN20250700

One-year kidney function trajectories in two cases following discontinuation of red yeast rice supplements

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Abstract

Introduction: Red yeast rice (RYR) lowers low-density lipoprotein cholesterol. In late 2023, multiple cases of renal dysfunction associated with specific lot numbers of RYR supplements (Beni-koji tablets) were reported in Japan, leading to a nationwide recall. A nationwide survey revealed nephrotoxicity with Fanconi syndrome features in those affected. However, renal function changes beyond one year following tablet discontinuation were not reported.

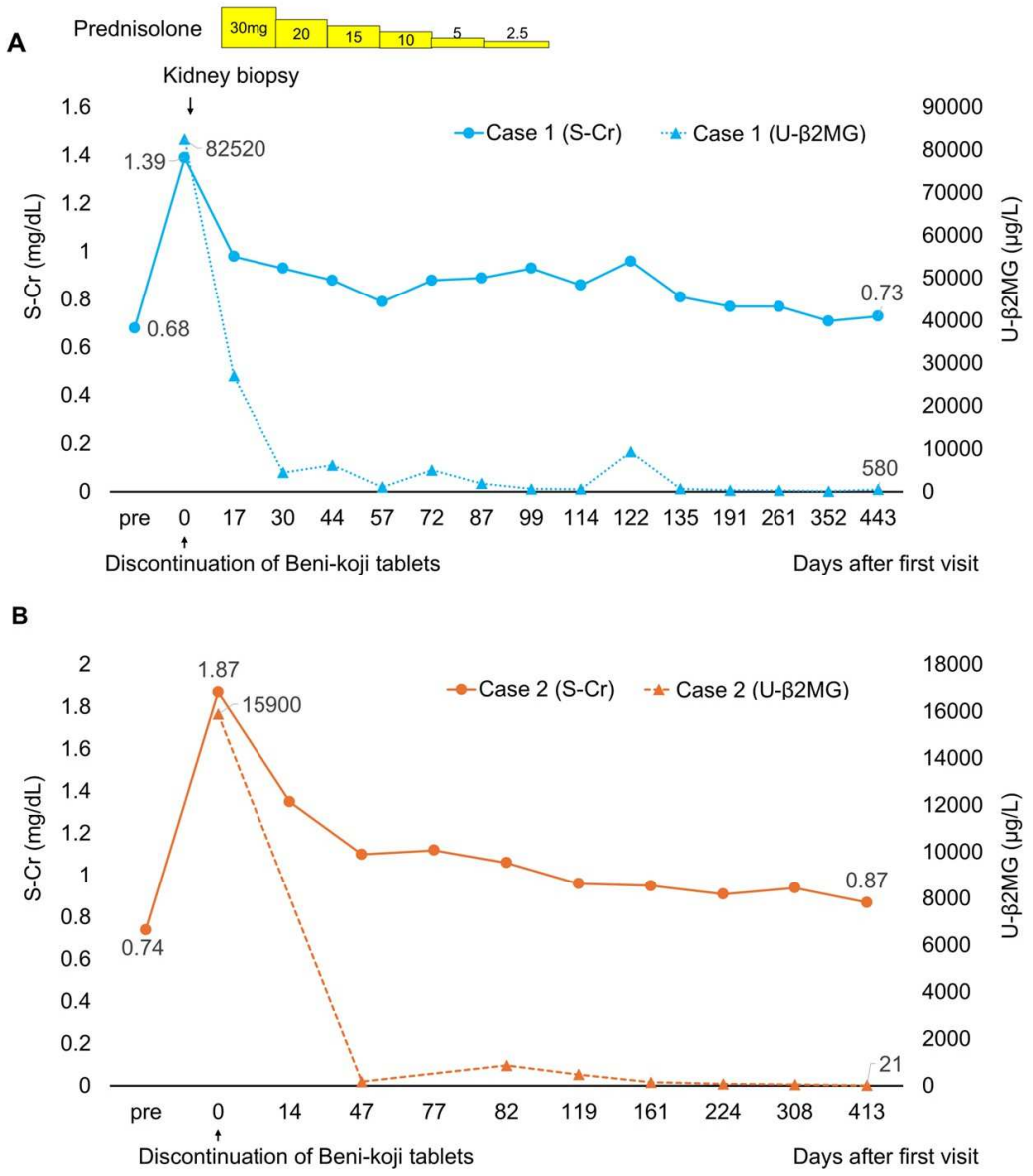
Case presentation: We report two cases of Beni-koji tablet-associated nephrotoxicity with one-year follow-up data. Both patients had normal renal function on previous health examinations.

Case 1: A 56-year-old woman was admitted to our hospital due to renal dysfunction one year after starting Beni-koji tablets. She exhibited an elevated serum creatinine (1.39 mg/dL) and Fanconi syndrome with proximal tubule damage on renal biopsy. Following tablet discontinuation and corticosteroid therapy, electrolyte and urinalysis abnormalities normalized within 3 months. Serum creatinine levels continued to improve beyond six months and returned to baseline levels, with estimated glomerular filtration rate (eGFR) of ≥60 mL/min/1.73m² maintained at one year.

Case 2: A 60-year-old woman presented with anorexia and abnormal urinalysis 6 months after initiation of Beni-koji tablets. She was diagnosed with acute kidney injury, with serum creatinine elevation (1.87 mg/dL). Fanconi syndrome was also suspected based on hypouricemia, hypophosphatemia, renal diabetes, and proteinuria. Electrolyte and urinalysis abnormalities improved within 6 months following the discontinuation of Beni-koji tablets. However, renal function did not return to baseline, and eGFR remained around 50 mL/min/1.73 m² from 119 days after her first visit through one year after discontinuation.

Conclusions: These cases suggest that renal function recovery may be prolonged. Long-term follow-up is warranted to assess the trajectory of recovery and the effects of therapeutic interventions in cases of renal dysfunction associated with Beni-koji tablets.

Keywords：Acute kidney injury, red yeast rice, Beni-koji, Fanconi syndrome


A
Prednisolone
30mg
20
15
10
5
2.5
Kidney biopsy
Case 1 (S-Cr)
Case 1 (U-β2MG)
S-Cr (mg/dL)
U-β2MG (μg/L)
1.39
82520
0.68
0.73
580
pre
0
17
30
44
57
72
87
99
114
122
135
191
261
352
443
Discontinuation of Beni-koji tablets
Days after first visit
B
Case 2 (S-Cr)
Case 2 (U-β2MG)
S-Cr (mg/dL)
U-β2MG (μg/L)
1.87
15900
0.74
0.87
21
pre
0
14
47
77
82
119
161
224
308
413
Discontinuation of Beni-koji tablets
Days after first visit

Poster Presentation：AKI
Poster No.：C0050
Abstract Submission No.：APCN20250704

Mannitol for Prevention of Cisplatin-induced Nephrotoxicity: A Systematic Review and Meta-Analysis of Randomized Controlled Trials

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Abstract

Purpose: Cisplatin remains a cornerstone in chemotherapy but is associated with nephrotoxicity in approximately 30% of patients, often necessitating dose reductions or treatment delays. Mannitol, an osmotic diuretic, has been suggested as a preventive agent due to its potential to enhance renal perfusion and dilute cisplatin concentration in the renal tubules. However, clinical evidence regarding its efficacy remains inconclusive.

Methods: A systematic search of PubMed, EMBASE, and the Cochrane Library was conducted to identify randomized controlled trials (RCTs) comparing mannitol with placebo or alternative interventions for the prevention of cisplatin-induced nephrotoxicity. The primary outcome was the incidence of acute kidney injury (AKI), while secondary outcomes included changes in creatinine clearance and treatment-related adverse events. Data were pooled using random-effects models to calculate risk ratios (RRs) with 95% confidence intervals (CIs) via Review Manager 5.4.

Results: A total of nine RCTs comprising 357 participants were included in the analysis. Mannitol significantly reduced the risk of moderate to severe AKI (grade ≥2) by 68% (RR 0.32, 95% CI 0.11-0.92). No significant differences were observed in 24-hour creatinine clearance between the mannitol and control groups. The incidence of secondary outcomes, including gastrointestinal symptoms, electrolyte imbalances, and hematologic toxicities, did not differ significantly between groups.

Conclusion: Mannitol's nephroprotective effects, attributed to its osmotic diuretic and antioxidant properties, may be particularly beneficial in reducing cisplatin-induced tubular injury among high-risk populations, such as those receiving high-dose cisplatin or concurrent radiotherapy.

Keywords：Acute kidney injury (AKI); Chemotherapy toxicity; Cisplatin-induced nephrotoxicity; Hydration protocols; Mannitol; Nephroprotection

Poster Presentation：AKI
Poster No.：C0052
Abstract Submission No.：APCN20250749

Reduce the Rate of Dialysis Circuit Clotting During Continuous Renal Replacement Therapy(CRRT)

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Abstract

Acute kidney injury (AKI) occurs in approximately 7–23% of patients admitted to intensive care units (ICUs), with Continuous Renal Replacement Therapy (CRRT) serving as a cornerstone of supportive management. Despite its clinical importance, CRRT is frequently complicated by dialyzer clotting, which undermines treatment efficacy and compromises patient safety. Preventing this complication requires nursing staff with advanced clinical expertise, vigilant real-time monitoring, and the ability to respond rapidly. A retrospective analysis at our hospital conducted between October 2023 and March 2024 revealed an average dialyzer clotting rate of 48.7%.

A root cause analysis identified three primary factors contributing to this high incidence: inadequate fixation of double-lumen catheters, limited nursing expertise in managing CRRT complications, and delayed responses to machine alarms. To address these challenges, a multifaceted improvement initiative was launched from June 2024 to March 2025. Interventions included comprehensive nursing education on catheter care and troubleshooting, refinement of the CRRT alarm response workflow, and the integration of AI-based instructional videos and QR code–linked digital learning tools into routine in-service training. Post-intervention analysis demonstrated a reduction in the dialyzer clotting rate from 48.7% to 36.7%. These findings underscore the value of targeted education and process optimization in enhancing nursing proficiency, reducing circuit failure, and improving overall safety and efficiency in CRRT delivery. Furthermore, the project fostered interdisciplinary collaboration and laid the groundwork for sustained quality improvement in critical care nephrology.

Keywords：Hemodialysis, Continuous Renal Replacement Therapy (CRRT), Dialyzer Clotting

Poster Presentation：AKI
Poster No.：C0053
Abstract Submission No.：APCN20250752

The Effect of N-Acetyl Cysteine Administration in Patients with Acute Kidney Injury at Dr. Mohammad Hoesin Hospital Palembang Indonesia

Maya puspita sari[1]; Hersusiad Akbar[3]; Novadian Suhaimi [2]; Suprapti[2]; Zulkhair Ali[2]; Ian Effendi[2]; Eva Julita; Eunike Aryaningrum[1]; Sartika Sadikin[1]

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[2] Division of nephrology, Internal Medicine Department, Sriwijaya University, Indonesia

[3] Internist, Priscilla Medical Center Hospital, Central Java Province, Indonesia

Abstract

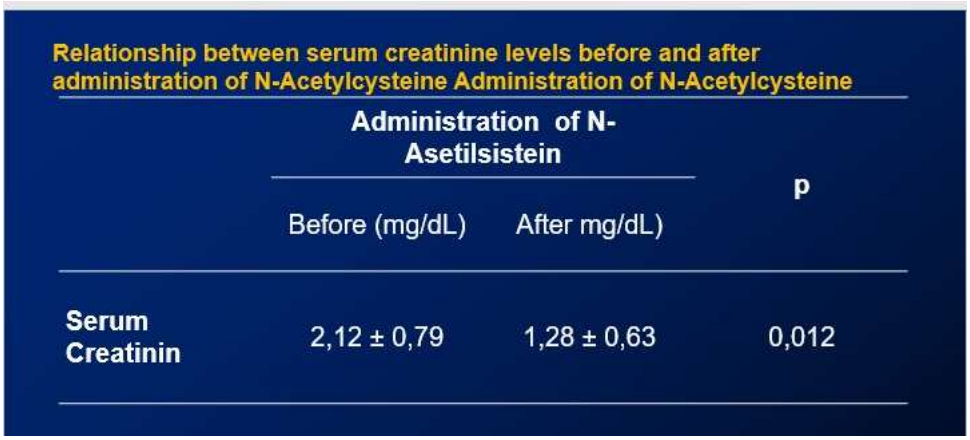
Background: Acute Kidney Injury (AKI) is a clinical condition characterized by a rapid decline in kidney function, encompassing both structural damage (injury) and functional impairment. AKI is a common complication occurring in 5-10% of patients due to various underlying etiologies. One of the underlying pathophysiologies of AKI is the role of reactive oxygen species (ROS) release, leading to kidney cell injury. Various studies have reported that N-acetylcysteine (NAC) has anti-inflammatory and antioxidant effects and affects the reduction of serum creatinine levels.

Method: This study is a quasi-experimental research conducted through an open clinical trial without control, involving 30 patients at Dr. Mohammad Hoesin Regional General Hospital in Palembang, Indonesia. All patients received NAC intervention at a dosage of 1200 mg/day, starting from September to October 2023. The study aims to determine the role of NAC in reducing serum creatinine levels in patients with acute kidney injury at Dr. Mohammad Hoesin Regional General Hospital, Palembang, Indonesia. Data analysis was conducted using SPSS 21 through univariate and bivariate analysis.

Results: The study found that the average age of patients was 53.9 years, involving 21 males (70%, N=30) and 9 females (30%, N=30). The most common causes were pre-renal, followed by renal (53.3% and 46.7%, respectively). The initial serum creatinine level was 2.12 ± 0.79 mg/dL (n=30 samples), and after the intervention, the mean serum creatinine level was 1.28 ± 0.63 mg/dL (n=30 samples). By using paired t-test, a significant decrease in serum creatinine levels was observed (p=0.012).

Conclusion: The administration of NAC to patients with acute kidney injury caused by pre-renal or post-renal factors has a statistically significant effect on reducing serum creatinine levels in patients with acute kidney injury at Dr. Mohammad Hoesin Regional General Hospital, Palembang, Indonesia.

Keywords：Acute Kidney Injury, Creatinine, N-acetylcysteine



Relationship between serum creatinine levels before and after administration of N-Acetylcysteine Administration of N-Acetylcysteine

	Administration of N-Asetilsistein		p
	Before (mg/dL)	After mg/dL)	
Serum Creatinin	2,12 ± 0,79	1,28 ± 0,63	0,012

Poster Presentation：AKI
Poster No.：C0054
Abstract Submission No.：APCN20250769

Machine Learning-Based Prediction of Hidden Acute Kidney Disease in Outpatient Settings

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Abstract

Introduction: Outpatient acute kidney disease (AKDOPT) often goes undiagnosed due to fragmented kidney function data. In 2017, we launched the Acute Kidney Injury Detection System (AKIDS) to automatically integrate national and local electronic medical records to screen for AKDOPT. However, up to 40% of outpatients lack prior kidney function data, limiting AKIDS's detection capability. This study aims to develop a machine learning (ML) model to predict AKDOPT and evaluate its clinical impact.

Methods: From the AKIDS-screened outpatient visits during 2017-2022, we kept the first visits and excluded patients aged <18 or >90 years and those with end-stage kidney disease (ESKD) or cancer. Patients with ≥2 serum creatinine (SCr) measurements in the 180 days before the index visit, sufficient to assess AKDOPT (>50% SCr or >35% eGFR change), were used to develop the model (cohort 1; train/test/validate=6:2:2). Patients without sufficient SCr data formed cohort 2 for evaluating clinical impact. An XGBoost model was built using clinical features--excluding SCr and eGFR. Baseline SCr was imputed using the population-based median stratified by age, sex, and chronic kidney disease (CKD), developed from 3 million SCr records in CMUH. Model performance was assessed by AUC and B statistic. Logistic regression was used to estimate the 1-year risk of composite kidney outcome (CKO: ESKD, SCr doubling, or >40% eGFR decline) and all-cause mortality for true and predicted AKDOPT.

Results: About 16% of 94,733 patients in cohort 1 had AKDOPT. ML model achieved an AUC of 0.82 and B statistic of 0.71 in the validation set. Top predictors included comorbidities (diabetes, hypertension, hyperlipidemia), medications (diuretics, insulin, statin, nephrotoxic antibiotics), frequency of inpatient or emergency visit, labs (hemoglobin, red blood cell count), and prior ECG record (yes vs no). In cohort 1, predicted AKDOPT and true AKDOPT had similar 1-year risks of CKO (odds ratio [OR] 4.3 vs 5.0) and mortality (OR 5.8 vs 5.5)(Table 1). For 331,998 patients in cohort 2, predicted AKDOPT consistently showed clinical significance, with associations to 1-year CKO (OR 3.3) and mortality (OR 6.4).

Conclusion: Our findings support the role of ML model in predicting AKDOPT for patients without prior kidney function data, enabling proactive AKDOPT risk assessment. Further replication is needed to validate generalizability.

Keywords：Acute kidney disease; Outpatient; Machine learning; Composite kidney outcome

Table 1. Clinical impact of the true and predicted AKD_{OPT}.

Population/ AKD_{OPT} status	1-year CKO		1-year mortality	
Cohort 1 (Validation)	**Outcome (%)**	**OR (95% CI)**	**Outcome (%)**	**OR (95% CI)**
True non-AKD_{OPT}	2.2%	Ref	2.0%	Ref
True AKD_{OPT}	10.3%	5.0 (4.3, 5.9)	11.0%	5.5 (4.7, 6.5)
Predicted non-AKD_{OPT}	1.9%	Ref	1.7%	Ref
Predicted AKD_{OPT}	7.9%	4.3 (3.7, 5.1)	9.1%	5.8 (5.0, 6.8)
Cohort 2				
Predicted non-AKD_{OPT}	0.4%	Ref	0.7%	Ref
Predicted AKD_{OPT}	1.2%	3.3 (2.8, 3.8)	4.4%	6.4 (5.8, 7.0)

Poster Presentation：AKI
Poster No.：C0055
Abstract Submission No.：APCN20250785

Early Prediction of Acute Kidney Injury (AKI) in ICU Patients by Multi-Aspect Physiological and Laboratory Evaluation (MAPLE)-AKI model

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Abstract

Introduction: Acute kidney injury (AKI) is a common complication in intensive care unit (ICU) patients and is strongly associated with increased morbidity and mortality. Despite its clinical significance, early prediction of AKI remains challenging. This is primarily due to the reliance on serum creatinine, a widely used biomarker that typically rises only after substantial kidney injury has occurred—thus limiting the window for timely intervention. To address this issue, we aimed to develop a predictive model for early AKI detection by leveraging routinely collected ICU data and temporal trends in physiological and laboratory variables.

Methods: We used the MIMIC-IV database, which includes data from 11,440 adult ICU patients. Information from the first 3 days of ICU admission was analyzed. Demographics, medication records, laboratory values, and vital signs were incorporated into model development. Both initial values and features derived from the day prior to prediction were used. For each vital sign, time-series statistical features—including maximum, minimum, mean, variance, and slope—were extracted to capture temporal dynamics. A feature selection process inspired by an Exposure-Wide Association Study (EWAS) was employed to identify relevant predictors. Forty significant features were selected to train four machine learning models: logistic regression, random forest, XGBoost, and support vector machine (SVM). SHAP (SHapley Additive exPlanations) analysis was used to interpret model outputs. DeLong's test was applied to compare the area under the receiver operating characteristic curve (AUROC) between models with and without temporal features.

Results: Of the included patients, 2,664 (23.3%) developed AKI within the first 3 days. Among 73 candidate features, 40 were significantly associated with AKI risk and used for model training. XGBoost demonstrated the best predictive performance (AUC = 0.890), followed by random forest (AUC = 0.820), SVM (AUC = 0.761), and logistic regression (AUC = 0.716). Models incorporating temporal statistical features consistently outperformed those using static data only, highlighting the added value of dynamic physiological information in early AKI risk prediction.

Conclusion: The MAPLE-AKI (Multi-Aspect Physiological and Laboratory Evaluation for AKI) model accurately predicts AKI onset up to 24 hours in advance, demonstrating excellent classification performance. By incorporating temporal features derived from 13 routinely collected ICU variables, including laboratory results, medication use, and vital signs, the model leverages clinically interpretable data to identify high-risk patients early and support timely interventions in critical care settings.

Keywords：Acute Kidney Injury (AKI), Machine Learning, prediction model, Multi-Timepoint Physiological Data

Population & Feature selection

MIMIC-IV
11,440 ICU patients

Feature extraction
(Total features = 73)
Demographics
Vital signs (w/ temporal features)
Medication information
Laboratory parameters

Feature selection
EWAS (Exposure-Wide Association Study)
Pearson correlation < 0.9

Final features (N = 40)
7 Laboratory parameters
(Hematocrit, Platelet, WBC, MCHC, RBC, RDW, Creatinine)
3 Medication (Antihypertensive, Vasopressors, NTG)
3 Vital signs (MBP, Heart Rate, Body Temp)
Total required collected variables: 13

Algorithm Development

11,440 ICU patients
40 Predict features

80% Train data
20% Test data

Cross-validation

Machine learning classifier

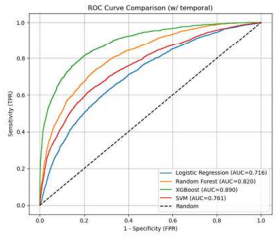
Model evaluation

Final Model

Algorithm Performance

Ensemble Learning
Have the best AUROC
XGBoost (AUROC = 0.890)
Random Forest (AUROC = 0.820)

Temporal features
significantly improved prediction
(all four models p-value < 0.001)



Using readily available clinical data for predictions and increases the usability of the model.

Poster Presentation：AKI
Poster No.：C0056
Abstract Submission No.：APCN20250813

Prognostic Value of Hematological Parameter in Predicting Need for Dialysis in Leptospirosis Associated Acute Kidney Injury

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Abstract

Introduction: Leptospirosis is a zoonotic disease commonly found in countries with tropical climates. It presents with symptoms that resemble those of other tropical diseases, which often leads to cases being identified in severe conditions (AKI). According to the Indonesian Ministry of Health, there were 1,170 cases in 2020 with a case fatality rate of 9.1%, and 734 cases in 2021 with a case fatality rate of 11.4%. Recent studies have revealed that biomarkers such as the neutrophil-to-lymphocyte ratio (NLR), platelet-to-lymphocyte ratio (PLR), and systemic immune-inflammation index (SII) can reflect the immune system's response within the body. Assessing these biomarkers can provide insights into determining disease severity, thereby aiding in the decision-making process regarding the need for dialysis.

Methods: In this retrospective cohort study, we included leptospirosis patients admitted to Moewardi Hospital, Indonesia, between January 2022 and May 2025. Patients with elevated creatinine levels meeting AKIN criteria for Acute Kidney Injury (AKI) were included in this study. Patients with missing data or pre-existing kidney dysfunction were excluded. The Hematological Parameters was calculated using NLR, PLR, SII. Mann Whitney test was used in the analysis.

Results: Among 56 leptospirosis patients who met the study criteria, the mean age was 51.70 13.42 with 48 patients (85.71%) were man and 6 patients (10.71%) were woman. In this study we found 38 patients (70.37%) received dialysis therapy and 16 patients (29.63%) had conservative management. There were no difference of NLR and SII between patients received dialysis therapy or conservative management (median 10.90 [min 1.30 – max 45.5] vs median 10.50 [min 3.40 – max 49.1], p = 0.828, median 758.96 [min 140.11 – max 7920.66] vs median 1127.77 [min 136 – max 6531], p = 0.256, respectively), but PLR level was significantly lower in patients with dialysis therapy (median 0.05 [min 0.01 – max 0.79] vs median 0.16 [min 0.01 – max 0.39], p = 0.034).

Conclusions: PLR level was valuable in predicting dialysis in Leptospirosis Associated AKI

Keywords：NLR, PLR, SII, Leptospirosis, AKI, Dialysis

Poster Presentation：AKI
Poster No.：C0057
Abstract Submission No.：APCN20250816

Factor Xa Inhibitors and Direct Thrombin Inhibitor are Equally Effective and Superior to Vitamin K Antagonist in Acute Kidney Disease Patients with Incident Atrial Fibrillation

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Abstract

Background：

Acute kidney disease (AKD) is a serious, potentially life-threatening condition, and links to higher chance of atrial fibrillation (Af). Novel oral anticoagulants (NOAC), including factor Xa inhibitors and direct thrombin inhibitors, are promising treatment to decrease morbidity and mortality in Af patients without kidney disease. Nonetheless, the efficacy of NOAC in AKD patients with incident Af remains obscure.

Methods：

We analyzed a longitudinal cohort of 11,704 AKD patients from a tertiary medical center between 2011 and 2021. The definition of AKD was based on the Kidney Disease: Improving Global Outcomes guidelines. Afterwards, 3371 AKD patients with incident Af were enrolled and categorized into three groups: factor Xa inhibitor (FXaI)-based NOACs (apixaban, edoxaban, rivaroxaban), direct thrombin inhibitor-based NOAC (dabigatran), and vitamin K antagonist (warfarin). Cox regression was used to estimate the hazard of factor Xa inhibitors, dabigatran and warfarin on study outcomes (cardiovascular death, major adverse cardiovascular events [MACE: cardiovascular death, myocardial infarction, ischemic stroke, acute coronary syndrome], and major adverse cardiovascular events [MARE: end-stage renal disease, renal death, renal function decline]).

Results：

During a median follow-up of 894 days, 294 patients experienced cardiovascular death, 401 patients developed MACE, and 350 patients progressed to MARE. Kaplan-Meier survival analysis revealed that both the FXaI and dabigatran groups had a significantly lower risk of CV death compared to the warfarin group (adjusted hazard ratio [aHR]: 0.70; 95% confidence interval [CI]: 0.530–0.924, $p = 0.011$ for FXaI; aHR: 0.53; CI: 0.349–0.796, $p = 0.002$ for dabigatran). Furthermore, the risk of MARE was also lower in FXaI and dabigatran users compared to warfarin users (aHR: 0.56; CI: 0.433–0.720, $p < 0.001$ for FXaI; aHR: 0.51; 95% CI: 0.355–0.743, $p < 0.001$ for dabigatran). These results remained consistent in subgroup and sensitivity analyses.

Conclusions：

Among AKD patients with incident atrial fibrillation, FXa inhibitors and dabigatran showed comparable and lower risks of cardiorenal events compared to warfarin.

Keywords：Acute kidney disease; Atrial fibrillation; Cardiorenal Events; Novel oral anticoagulants

Poster Presentation：AKI
Poster No.：C0058
Abstract Submission No.：APCN20250821

A Machine Learning Approach to Predict Chronic Kidney Disease after Hospital-Acquired Acute Kidney Injury and their eGFR over 60 at discharge

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Abstract

Purpose: Hospital-acquired acute kidney injury (AKI) results in chronic kidney disease and ends up with end-stage kidney disease after discharge. Follow-up by a nephrologist might attenuate the progress of chronic kidney disease. However, when their glomerular filtrating rate is over 60 mL/min/1.73 m^2, clinicians usually neglect to refer them to nephrologists. Our objective is to identify the patients who experienced AKI in the hospital and whose eGFR was higher than 60 mL/min/1.73 m^2 at discharge but deteriorated to lower than 60 within two years.

Methods: From 2001 to 2019, patients were indemnified with hospital-acquired AKI. By using the characteristics of in-patient data with baseline eGFR greater than 60 mL/min/1.73 m^2. We build an early CKD predictor, ECP, using four advanced machine learning techniques and compared the performance of the model with and without the serum creatinine feature.

Results: 100234 patients were enrolled in the study and analyzed. XGBoost is the best model in the datasets with the creatinine feature reached AUROC 81.6% (95% CI 81.3 to 81.9%) and 0.812 at independent testing (external validation); the XGBoost model also yields the best performance in the datasets without the creatinine feature, reached AUROC 76.9% (76.3 to 77.2%), and 77.8% at independent testing. In the model without the creatinine feature, we found the model can discriminate different departments of patients by the features and give different feature importances, which can prevent the model from data drifting.

Conclusion: Using machine learning, we identified an ECP model to identify patients whose eGFR will be lower than 60 mL/min/1.73 m^2 within two years after AKI.

Keywords：Acute kidney injury, Chronic kidney disease, Nephrologist, Machine learning

Poster Presentation：AKI
Poster No.：C0059
Abstract Submission No.：APCN20250839

Acute Interstitial Nephritis – An Observational Study of 50 Patients

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Abstract

Introduction:

Acute interstitial nephritis (AIN) is an important cause of acute kidney injury (AKI), accounting for 10-15% of AKI cases, with immuno-allergic mechanisms playing a central role in its pathogenesis. Despite its clinical significance, data on etiological trends, treatment responses, and long-term renal outcomes remain limited. This study aimed to characterize the clinical and histopathological features, identify predominant etiologies, assess treatment responses, and determine prognostic factors in biopsy-proven AIN.

Method:

We conducted a retrospective observational study of 50 consecutive patients with histologically confirmed AIN diagnosed between January 2021 and December 2024 at a tertiary care center. Demographic, clinical, laboratory, and histopathological data were collected from medical records and analyzed. Continuous variables were expressed as mean ± standard deviation, and categorical variables as percentages. Statistical analysis was performed using chi-square and t-tests, with $p<0.05$ considered significant.

Results:

The cohort had a mean age of 50.3±15.2 years (range: 22-78) with significant male predominance (63.3%, n=32). Drug-induced AIN was the leading etiology (55%, n=28), primarily due to NSAIDs (58.3% of drug cases) and antibiotics (33.3%). Autoimmune diseases accounted for 22% (n=11), while 23% (n=11) were idiopathic. At presentation, 68% (n=34) had AKI stage 2 or 3. Corticosteroid therapy was administered to 65% (n=33), with 65.2% (n=30) achieving complete renal recovery (serum creatinine returning to baseline). Chronic kidney disease (CKD) developed in 31.6% (n=16), with 12% (n=6) progressing to end-stage renal disease. Multivariate analysis identified age >50 years (OR 3.2, 95% CI 1.4-7.1, p=0.006), oliguria at presentation (OR 4.1, 95% CI 1.8-9.3, p=0.001), delayed steroid initiation >7 days (OR 2.9, 95% CI 1.3-6.5, p=0.009), and significant interstitial fibrosis (>25% on biopsy, OR 5.6, 95% CI 2.4-13.1, $p<0.001$) as independent predictors of poor renal outcome.

Conclusion:

This study confirms drug-induced AIN as the predominant etiology and demonstrates that timely steroid intervention correlates with better renal recovery. The high rate (31.6%) of CKD progression underscores the need for early diagnosis and prompt treatment. Histopathological assessment remains crucial for both diagnosis and prognostication, with interstitial fibrosis emerging as a key predictor of long-term renal dysfunction.

Keywords：Acute interstitial nephritis (AIN), Acute kidney injury (AKI), Chronic kidney disease (CKD)

Poster Presentation：AKI
Poster No.：C0060
Abstract Submission No.：APCN20250848

Diagnostic Patterns Associated with Intensive Care Unit–Acquired Acute Kidney Injury: A Comprehensive Analysis and Phenome-Wide Association Study

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Abstract

Purpose

Acute kidney injury (AKI) in the critically ill patients imposes a huge burden in healthcare systems and remains an area of investigation. This study aims to examine the association between AKI and various diagnoses with a phenome-wide approach

Methods

Using the multi-institutional database, we included adult patients admitted to the intensive care unit (ICU) between 2007 and 2019. AKI was identified according to the Kidney Disease: Improving Global Outcomes criteria. To investigate diagnostic patterns of ICU-acquired AKI, we tested the association between AKI and designated International Classification of Diseases, Tenth Revision (ICD-10) codes. We performed a hierarchical cluster analysis to identify how AKI-associated diagnoses present concurrently.

Results

In this ICU population, the diagnoses associated with respiratory failure, sepsis, and shock were strongly related to ICU-acquired AKI. Eight clusters of diagnoses identified through the ICD-10 codes were closely linked to sepsis, respiratory failure, fungal infection, hematologic malignancy, surgical or postprocedural complications, and cardiac and liver diseases. ICD-10 code N17 for AKI had a sensitivity of only 18.4% for AKI of any severity but had a specificity of 97.3%.

Conclusion

This study identified diagnostic clusters associated with ICU-acquired AKI representing several different ICU populations. The low sensitivity of ICD-10 code N17 among patients with a creatinine-based AKI diagnosis during their ICU stay indicates under-coding of AKI.

Keywords：acute kidney injury; critical care; cluster analysis; phenome-wide association study

Poster Presentation：AKI
Poster No.：C0061
Abstract Submission No.：APCN20250867

Evaluation of Electronic Acute Kidney Injury Alerts and Pharmaceutical Care in a Trauma Intensive Care Unit

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Abstract

Introduction

Trauma patients are at a high risk of developing acute kidney injury (AKI), which is associated with increased morbidity and mortality. Early detection of AKI is essential for identifying potentially inappropriate medications that may cause adverse effects and contribute to drug-related problems (DRPs). In response, an automated AKI alert system was implemented to facilitate timely medication adjustments.

Methods

This study aimed to evaluate the implementation of AKI care bundles following the introduction of an automated AKI alert system in an 18-bed trauma intensive care unit. We retrospectively reviewed pharmacist interventions triggered by AKI alerts between February 1, 2024, and May 30, 2025. AKI was defined according to the Kidney Disease: Improving Global Outcomes (KDIGO) guidelines.

Results

A total of 91 AKI alerts were recorded. Among these, 53.85% were classified as KDIGO stage III, 41.76% as stage II, and 4.4% as stage I. Nephrology consultations were required in 36 cases (39.5%), and renal replacement therapy was initiated in 29 patients (31.9%). Pharmacists identified DRPs in 47.2% of cases, including inappropriate dose selection (79%), inappropriate drug selection (13.95%), and issues requiring therapeutic drug monitoring (4.56%). The acceptance rate of pharmacist interventions was 95%, with all medication adjustments completed within 8 hours. Most recommendations (90.7%) were related to antimicrobial agents. No adverse drug events were reported.

Conclusion

Electronic AKI alerts integrated into medical record systems serve as an effective strategy for the early detection of AKI. When combined with care bundles, these alerts can enhance pharmaceutical care and optimize outcomes in patients with AKI.

Keywords：Acute kidney injury, AKI alert system, Pharmaceutical Care, Intensive Care Unit

Poster Presentation：AKI
Poster No.：C0062
Abstract Submission No.：APCN20250885

Psychotropic Medications Use and the Risk of Acute Kidney Injury, Advanced Chronic Kidney Disease, and Fall-Related Injuries: A Propensity Score–Matched Cohort Study

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Abstract

Importance: Although psychotropic medications, especially antidepressants, are widely prescribed for both psychiatric and somatic conditions, their long-term renal and neurologic safety profiles remain inadequately characterized in large-scale, real-world populations.

Objective: To evaluate the association between psychotropic medications use and the 1- and 5-year risks of acute kidney injury (AKI), progression to advanced chronic kidney disease (CKD), and fall-related adverse events.

Design, Setting, and Participants: This retrospective, propensity score–matched cohort study used data from the TriNetX global federated health research network. Adults aged ≥18 years who received ≥3 outpatient or ≥1 inpatient antidepressant prescription and ≥3 months of continuous use were matched 1:1 to nonusers. A total of 122,089 matched pairs were analyzed.

Exposure: Use of psychotropic medications therapy for ≥3 months.

Main Outcomes and Measures: The primary outcomes were 1- and 5-year incidences of AKI and advanced CKD. Secondary outcomes included CKD stages 4–6, falls, fractures, head injury, rhabdomyolysis, dizziness or vertigo, and nonsteroidal anti-inflammatory drug (NSAID) use. Risk ratios (RRs) and absolute risk differences were estimated with 95% confidence intervals (CIs).

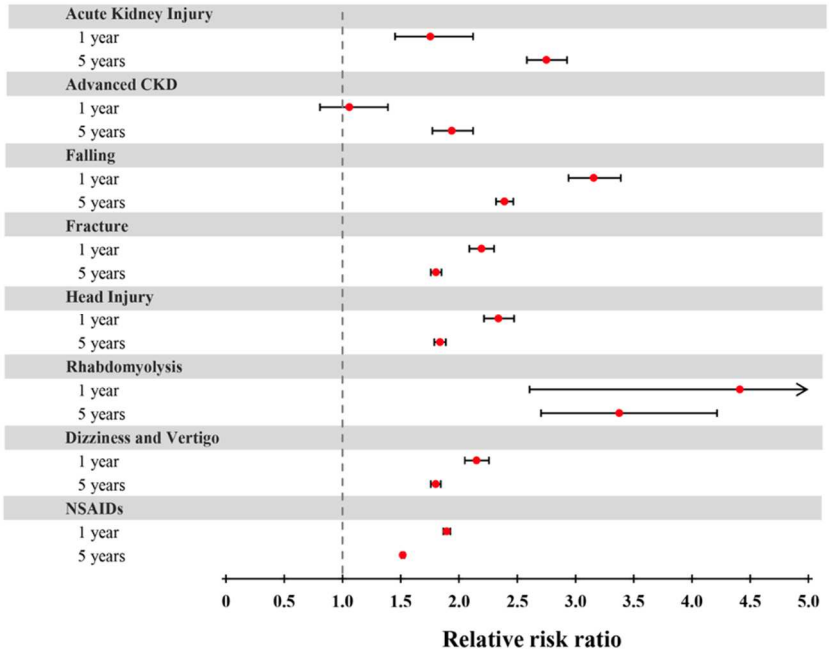
Results: Among 122,089 matched pairs (mean age, 47 years; 68% female), psychotropic medications use was associated with significantly higher 5-year risks of AKI (3.0% vs 1.0%; RR, 3.02; 95% CI, 2.85–3.19; P < .001) and advanced CKD (1.1% vs 0.6%; RR, 1.96; 95% CI, 1.83–2.10; P < .001). Psychotropic medications also exhibited increased risks of falls (10.4% vs 4.4%; RR, 2.36), fractures (12.3% vs 6.8%; RR, 1.82), head injuries (11.2% vs 6.2%; RR, 1.82), dizziness or vertigo (14.0% vs 7.8%; RR, 1.80), rhabdomyolysis (0.3% vs 0.1%; RR, 3.31), and NSAID use (57.7% vs 38.2%; RR, 1.51) (all P < .001). These associations were consistent across drug classes, age groups, and sensitivity analyses.

Conclusions and Relevance: In this large, real-world cohort, psychotropic medications use was associated with increased risks of renal function decline and fall-related complications. These findings underscore the importance of renal monitoring and fall prevention in patients receiving long-term antidepressant therapy. They support implementation of enhanced monitoring protocols for high-risk individuals prescribed psychotropic medications in clinical care.

Keywords：psychotropic medications, acute kidney injury, advanced chronic kidney disease, falls, fracture, TriNetX

Figure 1. Forest Plot of 1-Year and 5-Year Relative Risk Ratios for Adverse Clinical Outcomes Among Psychotropic Medications Users Versus Nonusers

Forest plot showing relative risk ratios (RRRs) with 95% confidence intervals for adverse clinical outcomes at 1 and 5 years in psychotropic medications users versus matched nonusers. Outcomes: Acute kidney injury, advanced chronic kidney disease (CKD), falls, fractures, head injury, rhabdomyolysis, dizziness/vertigo, and nonsteroidal anti-inflammatory drug (NSAID) use. The dashed vertical line indicates RRR = 1.0. All comparisons were statistically significant ($p < 0.001$), except for 1-year advanced CKD ($p = 0.677$).



Poster Presentation：AKI
Poster No.：C0063
Abstract Submission No.：APCN20250891

Machine Learning Model for Acute Kidney Injury Diagnosis Based on Point-of-Care Clinical Features in Absence of Baseline Serum Creatinine

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Abstract

Background

Computerized diagnostic algorithms can achieve early detection of acute kidney injury (AKI) using only available baseline serum creatinine (SCr) levels. To address this weakness, we constructed a machine learning model for AKI diagnosis based on point-of-care clinical features, regardless of the baseline SCr.

Methods

Hospitalized patients with SCr > 1.3 mg/dL were recruited retrospectively from Wan Fang Hospital, Taipei. Dataset A (n = 2,846) was used as the training dataset and Dataset B (n = 1,331) was used as the testing dataset. Point-of-care features, including laboratory data and physical readings, were input into the machine-learning models. The repeated machine learning models randomly used 70% and 30% of Dataset A as the training and testing datasets for 1,000 rounds, respectively. The single machine learning models used Dataset A training dataset and Dataset B as the testing dataset. A computerized algorithm for AKI diagnosis was based on a 1.5x increase in SCr and clinicians' AKI diagnosis compared with machine learning models.

Results

Repeated machine learning models showed an accuracy of 0.65 0.69 (Table 1). Single machine learning models showed an accuracy of 0.53 to 0.74, while the computerized algorithm exhibited an accuracy of 0.86 0.95. The clinician's diagnosis had an accuracy of 0.52 0.57. (Table 2 & 3) The clinical features with a leading impact on model output included blood lymphocytes, white blood cells, platelets, SCr, aspartate aminotransferase, systolic blood pressure, and pulse rate.

Conclusions

The machine learning models were able to diagnose AKI in the context of absent baseline SCr and showed superior accuracy compared with clinicians.

Keywords：Acute kidney injury (AKI), artificial intelligence (AI), chronic kidney disease (CKD), creatinine, electronic alerts, intensive care units (ICU), hospitalization, machine learning.

Table 1. Repeated machine learning models based on Dataset A (n = 1,423 in each group).

Model	Accuracy	Precision	Recall	Specificity	F1 score	AUROC
SVM	0.69±0.01	0.70±0.01	0.67±0.02	0.71±0.02	0.68±0.01	0.76±0.01
LR	0.67±0.01	0.68±0.01	0.64±0.02	0.70±0.02	0.66±0.01	0.73±0.01
GB	0.69±0.01	0.70±0.01	0.67±0.02	0.70±0.02	0.68±0.01	0.76±0.01
XGB	0.69±0.01	0.70±0.01	0.68±0.02	0.70±0.02	0.69±0.01	0.76±0.01
RF	0.69±0.01	0.69±0.01	0.68±0.02	0.70±0.02	0.69±0.01	0.76±0.01
NB	0.65±0.01	0.76±0.02	0.44±0.05	0.86±0.02	0.55±0.04	0.73±0.01
NN	0.67±0.01	0.68±0.02	0.65±0.02	0.70±0.03	0.67±0.01	0.74±0.01

Table 2. Single machine learning models based on Dataset A (n = 1,423 in each group) and unbalanced Dataset B as the testing dataset (n = 1,331).

Model	Accuracy	Precision	Recall	Specificity	F1 score	AUROC
SVM	0.68	0.41	0.69	0.67	0.52	0.74
LR	0.63	0.37	0.70	0.60	0.49	0.70
GB	0.56	0.34	0.80	0.48	0.48	0.72
XGB	0.53	0.32	0.80	0.44	0.46	0.72
RF	0.56	0.34	0.80	0.49	0.48	0.72
NB	0.74	0.48	0.50	0.82	0.49	0.72
NN	0.67	0.41	0.70	0.67	0.52	0.74
Traditional methods						
Computerized algorithm	0.95	0.95	0.85	0.98	0.90	n/a
Clinician's diagnosis	0.57	0.28	0.45	0.61	0.34	n/a

Table 3. Single machine learning models based on Dataset A (n = 1,423 in each group) and balanced Dataset B as the testing dataset (n = 334 in each group).

Model	Accuracy	Precision	Recall	Specificity	F1 score	AUROC
SVM	0.69	0.72	0.64	0.74	0.68	0.75
LR	0.67	0.68	0.65	0.69	0.66	0.71
GB	0.69	0.68	0.71	0.67	0.70	0.74
XGB	0.68	0.67	0.72	0.65	0.69	0.74
RF	0.72	0.71	0.73	0.70	0.72	0.74
NB	0.63	0.74	0.41	0.85	0.53	0.73
NN	0.69	0.71	0.64	0.74	0.67	0.75
Traditional methods						
Computerized algorithm	0.92	0.98	0.85	0.98	0.91	n/a
Clinician's diagnosis	0.53	0.54	0.45	0.61	0.49	n/a

Dataset A was used for machine learning and the Dataset B balanced for equal number of AKI and non-AKI patients was used as the testing dataset. In the procedure of machine learning, the presence or absence of AKI was defined by a validated computerized algorithm. In the procedure of result performance evaluation, the diagnoses of AKI were made by the researcher nephrologists of the present study. SVM, Support Vector Machine; LR, Logistic Regression; GB, Gradient Boosting; XGBoost, Extreme Gradient Boosting; RF, Random Forest; NB, Naive Bayes classifiers; NN, Neural Network.

Poster Presentation：AKI
Poster No.：C0064
Abstract Submission No.：APCN20250908

Hypercalcemia-Associated Kidney Injury as the Presenting Manifestation of Abdominal Tuberculosis

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Background: Tuberculosis remains highly prevalent in East Asia, with pulmonary tuberculosis accounting for the majority of cases. However, extrapulmonary tuberculosis, including tuberculous peritonitis, often poses significant diagnostic challenges due to its nonspecific symptoms and clinical presentations. Herein, we present an atypical extrapulmonary tuberculosis case accompanying hypercalcemia associated kidney injury as initial presentation.

Case presentation: A 63-year-old female with the medical history of hypertension, diabetes mellitus, and dyslipidemia presented with rapid deterioration of renal function, identified through routine monitoring at an endocrine outpatient clinic. Over three months, her estimated glomerular filtration rate (eGFR) sharply decreased from 72 to 20 mL/min/1.73m² and bilateral preserved kidney size without chronic change was demonstrated in kidney ultrasonography. She reported poor appetite and general weakness but denied fever, upper airway symptoms, abdominal pain or body weight change. Laboratory evaluation revealed mild proteinuria (urine protein-creatinine ratio: 809 mg/g) without hematuria. Serum testing indicated hypercalcemia (serum ionized calcium: 6.57 mg/dL) accompanied by suppressed intact parathyroid hormone levels (10.20 pg/mL). Tumor markers, esophago-gastro-duodenoscopy, and colonoscopy were negative for malignancy. Immunofixation electrophoresis showed polyclonal gammopathy, and comprehensive screening for glomerulonephritis was negative. However, a serum interferon-gamma release assay (IGRA) was positive, but no pulmonary lesion from chest radiography. Due to an unexplained hypercalcemia associated kidney injury, and positive IGRA, whole-body PET (positron Emission Tomography) was examined and revealed thickened peritoneum with multiple nodules demonstrating increased FDG uptake in the peritoneal and mesenteric regions, suggestive of carcinomatosis or granulomatous disease. The patient underwent laparoscopic exploration, and biopsy of intra-abdominal lymph nodes revealed caseating granulomas with central necrosis and acid-fast bacilli, consistent with tuberculous peritonitis. Immunohistochemical staining excluded malignancy. The patient was subsequently started on standard anti-tuberculosis therapy.

Discussion: Extrapulmonary tuberculosis, including tuberculous peritonitis, comprises approximately 15–20% of all TB cases and can involve any organ system, often presenting with nonspecific symptoms. Although abdominal tenderness, ascites, and fever are common in tuberculous peritonitis, atypical presentations, such as hypercalcemia-induced acute kidney injury, may complicate diagnosis. Hypercalcemia in granulomatous diseases like tuberculosis results from extrarenal production of active vitamin D (1,25-dihydroxyvitamin D3) by immune cells (macrophages and T lymphocytes). Prompt recognition and initiation of anti-TB treatment typically resolve hypercalcemia and restore renal function.

Conclusion: Clinicians should consider extrapulmonary tuberculosis in patients with unexplained hypercalcemia and kidney injury to enable timely diagnosis and effective treatment.

Keywords：hypercalcemia, extrapulmonary tuberculosis

Poster Presentation：AKI
Poster No.：C0065
Abstract Submission No.：APCN20250927

Plasma Presepsin as a Predictor of Mortality in Patients with Sepsis Due to Urinary Tract Infection

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Abstract

Background: Presepsin has recently been recognized as a reliable sepsis biomarker; however, its predictive value for mortality in patients with urinary tract infection (UTI) sepsis is unclear. This study aimed to evaluate whether plasma presepsin levels are a more reliable predictor of mortality than traditional infection biomarkers in patients with UTI sepsis.

Methods: This single-center retrospective study evaluated 75 patients with UTI sepsis who were admitted to the emergency department between May 2022 and August 2023. Data on vital signs, plasma presepsin, procalcitonin (PCT), C-reactive protein (CRP) levels, white blood cell (WBC) count, and other laboratory values at admission were also collected. The values of presepsin, PCT, CRP, and WBC count for predicting 28-day mortality were analyzed. Survivors and nonsurvivors were propensity score-matched in a 1:2 ratio based on age, sex, and estimated glomerular filtration rate.

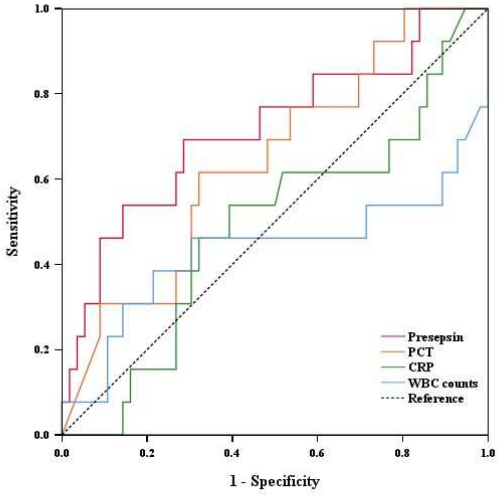
Results: In the overall cohort, presepsin showed the highest area under the receiver operating characteristic (ROC) curve (AUROC) of 0.716 for predicting 28-day mortality, surpassing that of PCT (0.645), CRP (0.471), and WBC count (0.421). Presepsin levels (per 100pg/mL) were independently associated with an increased risk of 28-day mortality (hazard ratio, 1.002; P=0.008). In the propensity score-matched cohort, the presepsin levels also showed the highest AUROC (0.651), followed by PCT (0.559), CRP (0.451), and WBC count (0.383). presepsin levels (per 100pg/mL) were independently associated with an increased risk of 28-day mortality.

Conclusions: Plasma presepsin levels are significantly associated with mortality and may be valuable biomarker for identifying high-risk patients with UTI sepsis.

Keywords：presepsin, sepsis, urinary tract infection, mortality

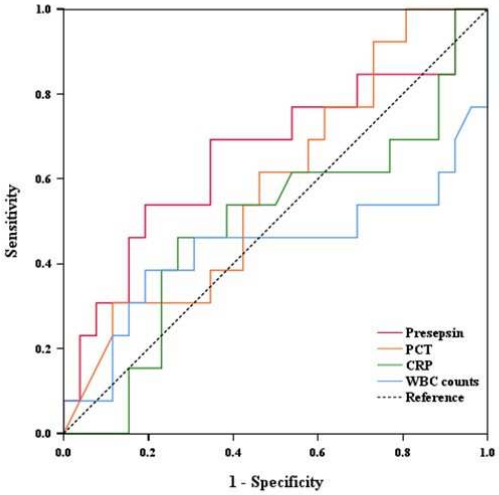
Figure 2

(a)



	AuROC value	Cutoff	Sensitivity	Specificity
Presepsin	0.716	1,318	0.692	0.714
PCT	0.641	16.6	0.615	0.679
CRP	0.488	16.6	0.538	0.607
WBC counts	0.433	16.1×10^3	0.385	0.786

(b)



	AuROC value	Cutoff	Sensitivity	Specificity
Presepsin	0.660	1,310	0.692	0.654
PCT	0.584	14.9	0.615	0.538
CRP	0.496	21.7	0.462	0.731
WBC counts	0.436	16.0×10^3	0.385	0.808

Poster Presentation：AKI
Poster No.：C0066
Abstract Submission No.：APCN20250932

Application of Care Strategies and Prognostic Outcomes in ICU Patients with Acute Kidney Injury

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Abstract
Purpose: Acute Kidney Injury (AKI) is a common and serious complication in intensive care units (ICUs), frequently observed in patients with sepsis, respiratory failure, hemodynamic instability, or those who have undergone major surgery. AKI not only increases mortality but may also progress to long-term renal impairment or require Continuous Renal Replacement Therapy (CRRT), significantly affecting patients' quality of life.This project aims to evaluate the effectiveness of implementing a multidimensional care strategy to improve early identification, integrated care, and clinical outcomes for ICU patients with AKI.
Methods: This project targeted ICU patients diagnosed with AKI and established an "AKI Early Warning System" to detect abnormal changes such as decreased urine output and rising serum creatinine levels. The system was complemented by hemodynamic monitoring parameters including Mean Arterial Pressure (MAP), Central Venous Pressure (CVP), and central venous oxygen saturation ($ScvO_2$).
A multidisciplinary care team—comprising intensivists, nephrologists, nurses, pharmacists, dietitians, and physical therapists—collaborated to implement care strategies, which included:Actively maintaining renal perfusion pressure and fluid balance, while avoiding fluid overload and pulmonary edema.
Timely initiation of Continuous Renal Replacement Therapy (CRRT) when necessary.Early rehabilitation and nutritional support tailored for high-risk patients to enhance cardiopulmonary endurance and muscle strength, preventing complications and functional decline.
Daily evaluations were conducted jointly by intensivists, nurses, and physical therapists to assess hemodynamic status and adjust treatment plans accordingly. Post-discharge, patients were followed up regularly to monitor kidney function and cardiopulmonary fitness, aiming to prevent the progression to chronic kidney disease (CKD).
Results: During the project period, patients experienced a reduction in both average hospital stay and ICU length of stay. The duration of AKI was shortened, and some high-risk patients successfully avoided long-term dialysis. Early rehabilitation interventions led to improved muscle strength and cardiopulmonary capacity, reducing the rates of readmission and CKD progression. The integrated care approach operated smoothly, with high satisfaction reported by patients and families. A sustainable interdisciplinary follow-up mechanism was established, improving overall care quality and patient prognosis.
Conclusion: AKI in ICU patients is associated with high incidence and mortality. The implementation of an integrated care model—combining early warning systems, hemodynamic monitoring, renal replacement therapy, early rehabilitation, and multidisciplinary collaboration—can effectively enhance early recognition and care comprehensiveness, thereby improving patient outcomes and quality of life.
This multilayered, team-based approach is worthy of broader clinical application in intensive care settings.

Keywords：Acute Kidney Injury (AKI) ,ICU

Poster Presentation：AKI
Poster No.：C0067
Abstract Submission No.：APCN20250933

The Appropriate Intravenous Saline Administration Moderates the Adverse Effect of Advanced Age and Chronic Kidney Disease on Contrast-induced Acute Kidney Injury

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Abstract

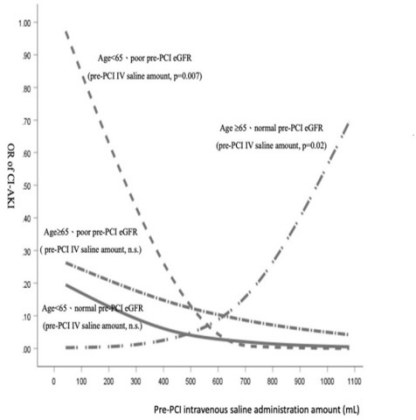
Objective: Advanced age and chronic kidney disease(CKD) are at risk of contrast-induced acute kidney injury(CI-AKI) after percutaneous coronary intervention (PCI). We aim to provide practical preventive recommendations for clinicians. Improving Global Outcomes in Kidney Disease(KDIGO) defined CI-AKI as a 1.5-fold or at least 0.3 mg/dL (26.5 μmol per liter) increase in serum creatinine within three days after contrast media.

Methods: We enrolled 143 patients who received contrast media (CM) during PCI, and follow-up renal function measurement within 72 hours at this regional teaching hospital in two years.

Results: The incidence of CI-AKI was 11.2%. The Johnson-Neyman technique was utilized and a region when an interval independent variable and a binary independent variable had a significant interaction effect on a dependent variable was identified. Pre-PCI intravenous saline administration amount and CI-AKI had a significant positive association in advanced-age normal renal function patients, and younger CKD patients, (p=0.02 and 0.007, respectively). The risk of CI-AKI is higher in the advanced age under an intravenous saline administration of more than 644.2 mL and higher in CKD patients under an intravenous saline administration of less than 358.3 mL.

Conclusions: We found that pre-PCI intravenous saline administration has moderating effects on the risk factors of CI-AKI, for advanced age, and CKD respectively, and also provided the recommended amount of preventive intravenous saline administration for clinical physicians.

Keywords：contrast-induced acute kidney injury, percutaneous coronary intervention, Johnson-Neyman



Poster Presentation：AKI
Poster No.：C0069
Abstract Submission No.：APCN20250981

Acute Kidney Injury due to Severe Leptospirosis: Diagnostic and Therapeutic Insights from a Case Series

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Abstract

Introduction:

Leptospirosis is a zoonotic disease with highly variable clinical manifestations, ranging from flu-like symptoms to life-threatening complications. We present a comprehensive approach aimed at identifying and managing acute kidney injury due to severe leptospirosis.

Case Illustration:

Three patients with confirmed leptospirosis presented with varying degrees of multiorgan involvement. Case 1: A 62-year-old woman was admitted with fever, jaundice, bilateral leg edema, and calf tenderness. Laboratory findings showed leukocytosis (21,490/mm³), thrombocytopenia (75,000/mm³), elevated bilirubin levels (total/direct/indirect: 17.06/11.39/5.67 mg/dL), and renal dysfunction (urea: 259 mg/dL, creatinine: 5.5 mg/dL, eGFR: 8 mL/min/1.73 m²). IgM anti-Leptospira was positive. Chest X-ray revealed bilateral pulmonary infiltrates and cardiomegaly. The patient received carbapenem and hemodialysis with subsequent clinical improvement. Case 2: A 28-year-old man presented with fever and abdominal pain. Labs showed leukocytosis (17,000/mm³), declining kidney function (urea: 218 mg/dl, creatinine: 9.2 mg/dL, eGFR: 7 mL/min/1.73 m²), and hyponatremia (sodium: 117 mEq/L). IgM anti-Leptospira was positive. Chest X-ray showed bilateral infiltrates. He received ceftriaxone and supportive therapy, but self-discharged on day 7. Case 3: A 66-year-old man presented with fever, jaundice, mild leg edema, and gastrocnemius tenderness. During hospitalization, he developed altered consciousness and oliguria. RT-PCR confirmed leptospirosis. Labs revealed acute kidney injury (urea: 263.2 mg/dl, creatinine: 10.6 mg/dl, eGFR: 4.9 mL/min/1.73 m²) and pancytopenia (Hb: 5.7 g/dL, Hct: 16.1%, leukocyte: 300/mm³, thrombocyte: 18,000/mm³). Chest X-ray showed bilateral infiltrates. The patient received broad-spectrum antibiotics (ceftriaxone) and hydration therapy and was scheduled for hemodialysis. His condition deteriorated, and he passed away on day 9 of hospitalization.

Discussion:

AKI is a frequent and serious complication of severe leptospirosis, resulting from direct tubular injury, dehydration, rhabdomyolysis, and hypoxia. Interstitial nephritis represents the predominant renal pathology. Hyponatremia may arise due to inappropriate ADH secretion, renal sodium loss, and inhibition of the Na^+-K^+-$2Cl^-$ transporter. Prognosis is worse in older patients or those with pulmonary involvement, cytopenias, or need for dialysis. In this series, one patient recovered after early renal replacement therapy, while another succumbed with multi-organ failure and pancytopenia prior to hemodialysis.

Conclusion:

Acute kidney injury due to severe leptospirosis is a common and serious complication. This case series underscores the importance of early recognition and timely intervention. Early initiation of

renal replacement therapy, in combination with broad-spectrum antibiotic therapy, appears to improve clinical outcomes and help preserve renal function.

Keywords：Leptospirosis, Acute Kidney Injury, Renal Replacement Therapy

Table 1. Patient Clinical Profile, Laboratory, Imaging, and Therapy

No	Symptoms	Laboratory	Chest X-Ray	Commorbid	Therapy	Outcome
1	Female, 62 years old Fever, icteric, and gastrocnemius pain.	Leukocyte:21.490, Thrombocyte:75.000), Bilirubin T/D/I: 17.06/11.39/5.67 IgM Leptospira: Positive, Ur/Cr/eGFR: 259/5.5/8	Pulmonary Infiltrate ,cardiomegaly, aortic elongation and calcification.	-CAP	-Hemodialysis - Carbapenem (Meropenem 1 gr every 8 hours	Recovery
2.	Male, 28 years old, Fever and abdominal pain	Leukocyte: 17,000) IgM Leptospira Positive Ur/Cr/eGFR: 218/9.2/7) Sodium: 117 mEq/L).	Pulmonary Infiltrate	-CAP -Atypical chest pain	-Ceftriaxone 2gr every 24 hours.	Discharge over medical recommendations (on the 7th day of hospitalization)
3.	Male,66 years old Fever, and jaundice Throughout treatment, the patient displayed symptoms of confusion and oliguria.	The RT-PCR result was positive Ur/Cr/eGFR: 263.2/10.6/4.9 CBC: pancytopenia (Hb: 5.7, Hct: 16.1, leucocyte: 300, thrombocyte: 18,000).	Pulmonary Infiltrate	-Hypertension -Diabetes Mellitus Type 2 -Psoriatic arthritis moderate disease activity (DAPS 17)	-Ceftriaxone 2gr every 24 hours.	Died

Poster Presentation：AKI
Poster No.：C0070
Abstract Submission No.：APCN20251003

Early Nephrology Consultation in Patient with Acute Kidney Injury: Impact on Clinical Outcomes

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Abstract
The electronic alert systems for acute kidney injury (AKI) have been introduced in Kaohsiung Chang Gung Memorial Hospital. However, the clinical benefits was unknown. This study aims to evaluate the impact of early nephrology involvement on the patient with acute kidney Injury, KIDGO stage 2.
In this study, we investigated patients who triggered an acute kidney injury (AKI) electronic alert (e-alert). Those who received an early nephrology consultation were assigned to the intervention group, while those who did not receive a consultation comprised the control group. A total of 186 patients were enrolled between July 2024 and June 2025. Statistical analyses, including Chi-square tests and independent t-tests, were performed to evaluate the associations between early nephrology consultation and clinical outcomes such as length of hospital stay, in-hospital mortality, and long-term dialysis dependence.
Result: A total of 186 patients were included in the analysis. Among patients who received early nephrology consultation, the rate of overlooked AKI was significantly lower compared to those without early consultation (11.1% vs. 31.3%, P = 0.003). However, no statistically significant differences were observed between the two groups in other clinical outcomes, including long-term renal replacement therapy (RRT) after discharge, RRT usage within one month, hyperkalemia recovery, all-cause mortality, and major adverse cardiovascular events (MACE).
Interestingly, the AKI recovery rate was lower in the early consultation group (44.4%) compared to the non-consultation group (78.6%). Subgroup analysis revealed that among patients with early nephrology consultation, those admitted to the SICU or surgical wards had a higher AKI recovery rate (50.0%) compared to those in the MICU (30.8%).
Conclusions: Early nephrology consultation was not associated with significant differences in long-term renal replacement therapy after discharge, RRT use within one month, hyperkalemia recovery, all-cause mortality, major adverse cardiovascular events (MACE), or length of hospital stay. However, it may help reduce the risk of overlooked AKI and appears to be beneficial in promoting AKI recovery within two weeks in surgical patients

Keywords：Early nephrology consultation

Poster Presentation：AKI
Poster No.：C0071
Abstract Submission No.：APCN20251005

Evaluating the Effectiveness of Comprehensive Integrated Care for Post-Discharge Patients with Acute Kidney Injury

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Abstract

Acute Kidney Injury (AKI) can progress to Acute Kidney Disease (AKD) within 7 to 90 days, with recovery time varying significantly based on individual renal damage and ongoing injurious factors. To enhance post-discharge care for these patients, our institution developed the AKI Intelligent Clinical Decision Support System. This system facilitates AKI bundle care upon enrollment and ensures continued outpatient follow-up for those with persistent kidney dysfunction.

Our patient-centered, interdisciplinary care model involves:

• Case managers for care coordination.
• Dietitians for personalized nutritional counseling.
• Pharmacists for medication review and adjustments.

Methods

Beginning August 2022, our AKI Intelligent Alert and Care System identified an in-hospital mortality rate of 21.9% among AKI patients. To improve outcomes for the AKD population, we initiated enrollment based on the following criteria: hospitalized for AKI, discharged, followed up in an outpatient clinic within one month, and with an eGFR below 45 ml/min/1.73m2.

The enrollment process is two-fold:

1. During hospitalization: The AKI alert system notifies nephrologists to assess eligibility for AKD follow-up.
2. After discharge: Case managers use the OneTeam Interdisciplinary Proactive Care System to review outpatient appointments, flag patients with specific diagnostic codes (N17.0–N17.9), and assess their lab and renal ultrasound results.

Once enrolled, case managers coordinate with dietitians and pharmacists to evaluate the patient's condition, provide education on home care, diet, and medication, and help prevent AKI recurrence.

Results

After 90 days of interdisciplinary care:

• 46.6% transitioned to Pre-End-Stage Renal Disease (Pre-ESRD) management.
• 37.7% transitioned to early-stage Chronic Kidney Disease (CKD) care.
• 16.7% showed recovery of renal function, including five patients who discontinued dialysis.

Conclusion

By utilizing the AKI Intelligent Alert System and the OneTeam Interdisciplinary Proactive Care System, our team successfully identified and managed AKD patients post-discharge. This interdisciplinary and continuous care significantly improved eGFR and albumin levels. While urinary protein-to-creatinine ratio (UPCR) showed no significant change and requires further improvement, continuous nephrology follow-up remains crucial for ensuring optimal, high-quality care, promoting renal recovery, and preventing deterioration in AKI patients.

Keywords：Acute Kidney Injury (AKI)、 interdisciplinary care model 、 OneTeam Interdisciplinary Proactive Care System

Poster Presentation：AKI
Poster No.：C0072
Abstract Submission No.：APCN20251031

A Case of Exercise-Induced Acute Kidney Injury in a High School Student with Hypouricemia

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Abstract

Introduction:

Exercise-induced acute kidney injury (AKI) is classified into two types: AKI with rhabdomyolysis and AKI with severe loin pain following anaerobic exercise (ALPE). ALPE is a rare form of AKI characterized by the sudden onset of bilateral loin pain, typically occurring in healthy young males after physical exertion. It is often associated with renal hypouricemia and has been predominantly reported in East Asian populations. We present a classic case of ALPE triggered by aerobic exercise, with complete renal recovery achieved through conservative management.

Case:

A 16-year-old previously healthy male presented with the sudden onset of loin pain and gross hematuria following a school's long-distance running event. He was found to have severe renal dysfunction and was transferred to our hospital the same day. Laboratory data revealed a serum creatinine (Cr) level of 10.63 mg/dL, blood urea nitrogen (BUN) 69 mg/dL, uric acid (UA) 7.1 mg/dL, urinary red blood cells 150/μL, and urinary protein 1 g/gCr. Hemodialysis was not required. A kidney biopsy was performed, and the patient was managed conservatively. Serum creatinine decreased spontaneously from 10.63 to 1.47 mg/dL by day 10. UA levels gradually declined to 1.3 mg/dL by day 10. Renal histology revealed no glomerular abnormalities but showed prominent tubular injury. The fractional excretion of uric acid (FEUA) was elevated at 40%, suggesting underlying renal hypouricemia. A diagnosis of ALPE was made, and the patient was discharged on day 11. He continues to be followed as an outpatient with persistent hypouricemia and has been advised to avoid intense anaerobic exercise.

Discussion:

This case underscores the importance of recognizing ALPE as a distinct cause of exertional AKI, particularly in East Asian adolescent males. Renal hypouricemia may be a key predisposing factor, and assessment of uric acid dynamics can aid in early diagnosis and understanding of the disease mechanism. The absence of glomerular involvement and the spontaneous improvement with conservative therapy are hallmark features of ALPE. Early recognition and appropriate management can prevent unnecessary interventions such as dialysis. Long-term follow-up is essential due to the potential for recurrence. Genetic testing for mutations in URAT1 or GLUT9 may provide further insight into the hereditary nature of renal hypouricemia associated with ALPE.

Keywords：Acute kidney injury, Renal hypouricemia, Exercise-induced nephropathy, Adolescent, ALPE

Poster Presentation：AKI
Poster No.：C0073
Abstract Submission No.：APCN20251038

Acute kidney injury in programmed cell death protein 1 / programmed death-ligand 1 inhibitor- treated locally advanced /metastatic renal cell carcinoma: the risk factors and the influence on the clinical outcome.

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Abstract

Backgrounds:

PD-1/PDL1 inhibitors benefit patients with locally advanced/metastatic renal cell carcinoma (RCC), but their use is associated with acute kidney injury (AKI). This study investigates AKI risk factors and their impact on clinical outcomes.

Materials and methods:

In a retrospective cohort analysis using the TriNetX database (2010–2024), we evaluated AKI incidence and overall mortality among patients with stage 3 or 4 RCC treated with PD-1/PD-L1 inhibitors versus non-users. Outcomes were assessed over a two-year follow-up period.

Results:

There were 523 PD-1/PD-1L1i users and 4099 PD-1/PD-L1 nonusers during the study period and 463 patients (63.3 ± 11.3 year-old, male percentage: 34%) were matched by propensity score. After a mean followed up of 2 years, AKI occurred more frequently in PD-1/PD-L1 inhibitor users than non-users (16% vs. 11%; p=0.013). Baseline GFR >60 ml/min was protective (OR: 0.43), while prior nephrectomy (OR: 2.01), aminoglycoside exposure (OR: 2.32), and capsular invasion (OR: 2.14) increased AKI risk. Sepsis incidence (18/115 and 11/153 with and without AKI respectively) was significantly higher in patients who developed AKI (p=0.0114).

Conclusions:

PD-1/PD-L1 inhibitor use is associated with an elevated risk of AKI and subsequent sepsis in advanced RCC. Risk is influenced by renal function, surgical history, and tumor characteristics, highlighting the need for close monitoring.

Keywords：renal cell carcinoma, PD-1/PD-L1 inhibitor, acute kidney injury, mortality, sepsis

Poster Presentation：AKI
Poster No.：C0074
Abstract Submission No.：APCN20251050

Using Fractional Excretion of Sodium and Uric Acid to Distinguish NSAID-Induced Acute Kidney Injury With or Without Acute Renocardiac Syndrome

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Abstract
Background：
Non-steroidal anti-inflammatory drugs (NSAIDs) are widely prescribed medications known to cause nephrotoxic complications, notably acute kidney injury (AKI). NSAID-induced AKI typically manifests as prerenal injury due to impaired renal perfusion associated with reduced prostaglandin synthesis. In certain conditions, NSAID-induced AKI may progress further, leading to fluid overload and acute heart failure, clinically recognized as type 3 acute renocardiac syndrome (ARCS). Traditional clinical markers often do not reliably distinguish between NSAID-induced AKI with and without concurrent ARCS. Fractional excretion of sodium (FENa) and fractional excretion of uric acid (FEUa) might serve as useful biomarkers in differentiating these clinical entities.
Methods：
We reviewed clinical and laboratory data from 11 patients diagnosed with NSAID-induced AKI in our nephrology department. Among these, 8 patients presented with NSAID-induced AKI alone, and 3 developed NSAID-induced ARCS. We compared clinical features, urinary biochemical profiles, FENa, and FEUa between the two groups to assess the potential role of these biomarkers in distinguishing ARCS from simple NSAID-induced AKI.
Results：
Patients with NSAID-induced ARCS demonstrated notably higher FENa (> 1%) and FEUa (> 12%), compared to patients with NSAID-induced AKI not complicated with ARCS. Clinically, patients diagnosed with ARCS required more aggressive fluid management, intensive diuretic therapy, and cardiovascular support, resulting in a more complicated clinical course. In contrast, those without ARCS typically recovered renal function more rapidly after NSAID discontinuation and appropriate fluid resuscitation.
Conclusions：
Our study reveals that among patients with NSAID-induced AKI, those who developed type 3 ARCS had significantly elevated FENa and FEUa compared to patients with simple NSAID-induced AKI. These findings highlight the potential utility of FENa and FEUa in clinical differentiation, risk stratification, and guiding therapeutic decisions. Future larger-scale studies are required to validate these observations and explore their implications for routine clinical practice.

Keywords：Non-steroidal anti-inflammatory drugs, acute kidney injury, acute renocardiac syndrome, fractional excretion of sodium, fractional excretion of uric acid.

Poster Presentation：AKI
Poster No.：C0075
Abstract Submission No.：APCN20251063

Effects of different blood purification devices on the lifetime of blood circuits in continuous renal replacement therapy

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Abstract
[Introduction]
In the field of acute blood purification, many patients present with hemodynamic instability. Because prolonged and gradual solute removal and fluid management are required, continuous renal replacement therapy (CRRT) is often selected. However, blood clotting within the circuit during CRRT is not rare, requiring circuit replacements, and there is concern over downtime and effects on coagulation factors. Our institution uses three blood purification devices different in circuit characteristics. In this study, we retrospectively examined their effects on the lifetime of blood circuits in CRRT.
[Subjects and Methods]
A total of 523 CRRT sessions from 147 patients at Kagoshima University Hospital, conducted between April 2023 and March 2024, were analyzed.
The blood purification devices analyzed in this study were ACH-Σ (Σ), manufactured by Asahi Kasei Medical Co., Ltd., TR-2020 (2020), manufactured by Toray Medical Co., Ltd., and AcuFil Multi 55X-II (55X), manufactured by JMS Co., Ltd. The conditions of CRRT were: blood flow rate of 60–100 mL/min, dialysate flow rate of 0.5–1.0 L/h, replacement fluid flow rate of 0.5 L/h, and filtration flow rate of 0.5–1.5 L/h. Nafamostat mesylate was administered at 0–0.6 mg/kg/h as an anticoagulant. The patient background characteristics, including SOFA score, DIC score, and various blood test results, lifetime, reasons for circuit replacement or recovery , and 24-hour treatment completion rate were analyzed. After returning the blood, the conditions at A chamber , V chamber, and the hemofilter were compared visually using coagulation scores (0–3).
[Results]
Concerning the patient background were no significant. The lifetime (h) did not show significant differences. There were also no significant differences in the reasons for circuit replacement or recovery among the three groups. The coagulation score was significantly lower in Σ than in 55X or 2020 at A chamber but in 55X and 2020 than in Σ at V chamber.
[Discussion]
The A chamber in Σ is an air-free pressure chamber, which may have reduced/prevented coagulation by restricting contact of blood with air, improving blood fluidity, and reducing stagnation compared with 55X or 2020. Additionally, while 55X and Σ have vertical-inflow type V chambers, 2020 has a horizontal-inflow type V chamber, which may have reduced the blood retention time in the chamber and contributed to the prevention of coagulation at this site.
[Conclusion]
A comparison of three blood purification devices varying in circuit configurations showed no significant differences in lifetime or reasons for circuit replacement or recovery. However, hydrodynamic differences in chamber configuration were suggested to influence clot formation.

Keywords： blood purification devices　lifetime

Poster Presentation：AKI
Poster No.：C0076
Abstract Submission No.：APCN20251101

Critical Care Nursing Experience for a Post-Heart Transplant Patient with Acute Kidney Injury Supported by ECMO and CRRT

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Abstract
Objective
This report describes the critical care nursing experience of managing a post-heart transplant patient who developed acute kidney injury (AKI) and required extracorporeal membrane oxygenation (ECMO) and continuous renal replacement therapy (CRRT). The aim was to stabilize hemodynamics, support renal function, and prevent complications through multi-disciplinary collaboration, evidence-based interventions, and individualized care strategies to optimize clinical outcomes.
Methods
The patient developed AKI after heart transplantation due to hypotension, immunosuppressive therapy, and reduced cardiac output. Laboratory tests showed creatinine rising from 1.2 mg/dL to 4.1 mg/dL, BUN reaching 62 mg/dL, and elevated lactate, indicating metabolic acidosis. ECMO was initiated at 3200 rpm with a blood flow of 3.5 L/min to stabilize hemodynamics and maintain organ perfusion, while CRRT was applied to correct fluid overload, acid-base imbalance, and clear metabolic waste. Nursing interventions included close monitoring of MAP, $ScvO_2$, CVP, urine output, CRRT ultrafiltration rate, and serum lactate. Medication adjustments involved careful titration of tacrolimus, meropenem, dopamine, and norepinephrine based on renal function, liver function, and hemodynamic parameters. ECMO speed and flow were gradually reduced to 2800 rpm and 2.8 L/min as the patient stabilized. The nursing team collaborated with cardiac surgeons, nephrologists, pharmacists, and rehabilitation specialists to create an individualized care plan. Preventive strategies such as pressure injury prevention, early mobilization, nutritional support, and psychological counseling were implemented to enhance overall recovery.
Results
Following multi-organ support, the patient's creatinine decreased to 1.7 mg/dL, lactate levels normalized, and urine output steadily improved. Hemodynamic status remained stable (MAP > 70 mmHg), and the patient was successfully weaned off ECMO and CRRT without major complications. The patient gradually regained mobility, improved cardiopulmonary function, and demonstrated positive psychological adjustment. Family involvement and interdisciplinary communication further enhanced care quality and patient satisfaction.
Conclusion
For post-heart transplant patients with AKI, early detection and intervention using ECMO and CRRT, combined with dynamic hemodynamic management and medication optimization, are essential for improving renal perfusion and clinical outcomes. Critical care nurses play a pivotal role in continuous assessment, individualized care planning, and interdisciplinary coordination, ensuring timely responses to physiological changes. This experience highlights the importance of comprehensive multi-organ support, evidence-based practice, and team-based care in optimizing the prognosis and quality of life for critically ill patients.

Keywords：Heart transplantation, acute kidney injury, ECMO, CRRT, critical care nursing

Poster Presentation：AKI
Poster No.：C0077
Abstract Submission No.：APCN20251166

Sarcopenia as a Clinical predictor of Adverse Kidney Outcomes in ICU patients with Acute Kidney Injury

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Abstract

Background: Sarcopenia is highly prevalent in critically ill patients and is associated with adverse outcomes, particularly in those with acute kidney injury. Despite its clinically significance, dynamic changes in sarcopenia and their impact on renal recovery and mortality in AKI patients remain under-investigated. Our aim is to assess changes in sarcopenia among critically ill patients with acute kidney injury and evaluate its association
with clinical outcomes, including mortality and major adverse kidney events.

Methods: It is a single center, prospective study, the patients who admitted to the intensive care unit with AKI were assessed for sarcopenia using the SARC-F questionnaire at the time of ICU admission. SARC-F score ≥ 4 was used to identify patients risk of sarcopenia. Quadriceps femoris muscle mass was assessed using ultrasound in patients with AKI on day 1 and day 8. Frailty was assessed using the Clinical Frailty Scale ≥ 5 points. The primary outcome, MAKE, was defined as a composite of all-cause mortality, need for renal replacement therapy, or persistent renal dysfunction within 30 days. Both MAKE and mortality outcomes were observed for up to 30 days. Associations between sarcopenia, QFMT, and other covariates with outcomes were explored using univariate logistic regression. To determine independent factors, multivariate logistic models adjusted for age, sex, APACHE II score, frailty, week 1 QFMT and sarcopenia was performed.

Results: We enrolled 58 critically ill patients (median age 78 [IQR 66–86]; 62% male), in-hospital mortality occurred in 29%, and MAKE was observed in 45% of patients. In multivariable-adjusted regression models, each additional year of age was found to increase the odds of in-hospital mortality by 2.5% (adjusted for OR 1.025, 95% CI 1.001–1.050; $p = 0.04$). Male patients had more than double the risk of death compare to females (adjusted for OR 2.33, 95% CI 1.33–4.09; $p < 0.01$). Additionally, increased quadriceps muscle thickness at day 8 had a protective effect from death (adjusted OR 0.52 per cm, 95% CI 0.33–0.81; $p < 0.01$). Patients with sarcopenia had three-fold higher odds of MAKE (adjusted OR 3.20; 95% CI: 1.52–6.76; $p < 0.01$).
However, sarcopenia was not significantly associated with in-hospital mortality in the adjusted model (adjusted OR 1.99; 95% CI: 0.95–4.21; $p= 0.07$).

Conclusion: Assessment of sarcopenia using tools like SARC-F, and QFMT in critically ill AKI patients provide valuable prognostic information and potential early risk stratification and guiding interventions to prevent MAKE.

Keywords：ICU, sarcopenia, frailty, major adverse kidney events, mortality

Poster Presentation：AKI
Poster No.：C0078
Abstract Submission No.：APCN20251190

A Novel Strategy for Discontinuation Based on Kidney Function Assessment During Continuous Kidney Replacement Therapy: A Multicenter Prospective Observational Study (Interim Analysis)

Sua Lee[1]; Seokjin Hwang[3]; Soyoung Lee[1]; Jong Ho Shin[1]; Daun Song[2]; Ji Won Lee[2]; Se-Hee Yoon[2]; Won Min Hwang[2]; Sung-Ro Yun[2]; Yohan Park[2]

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Abstract

Background: Discontinuing continuous kidney replacement therapy (CKRT) remains challenging due to the lack of reliable biomarkers for kidney function recovery. This study proposes a novel assessment protocol during ongoing CKRT and evaluates its predictive utility.

Methods: In this multicenter prospective observational study, an interim analysis was conducted on 43 patients with complete data. CKRT modality was switched from continuous veno-venous hemodiafiltration (CVVHDF) to continuous veno-venous hemodialysis (CVVHD). Serum creatinine (Cr) and cystatin C (CysC) levels were measured at 0, 6, 12, and 24 hours after the switch. Kidney non-recovery was defined as the need to restart kidney replacement therapy (KRT) within seven days after CKRT discontinuation. Temporal changes in serum Cr and CysC were compared between the recovery (n=25) and non-recovery (n=18) groups. Receiver operating characteristic (ROC) curve analyses were performed to evaluate the predictive value of CysC and non-indexed eGFRCysC.

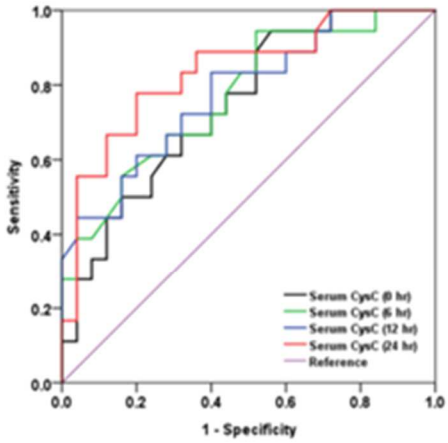
Results: Serum Cr levels did not significantly differ between groups post-switch (P=0.290). In contrast, while serum CysC remained stable in the recovery group, it exhibited a prominently increasing trend in the non-recovery group (P = 0.009). For non-recovery prediction, the area under the ROC values of serum CysC progressively improved over time after the mode change to CVVHD, reaching a notable 0.810 at 24 hours; similarly, non-indexed eGFRCysC showed an improving trend and demonstrated outstanding performance with a value of 0.876 at 24 hours.

Conclusion: Switching CKRT from CVVHDF to CVVHD allows for accurate assessment of kidney function without discontinuing therapy. Serum CysC and particularly non-indexed eGFRCysC at 24 hours demonstrated strong predictive value for kidney non-recovery. This strategy offers a practical, biomarker-based approach to guide CKRT weaning decisions and may improve clinical outcomes.

Keywords：Continuous kidney replacement therapy; Acute kidney injury; Weaning; Kidney function recovery

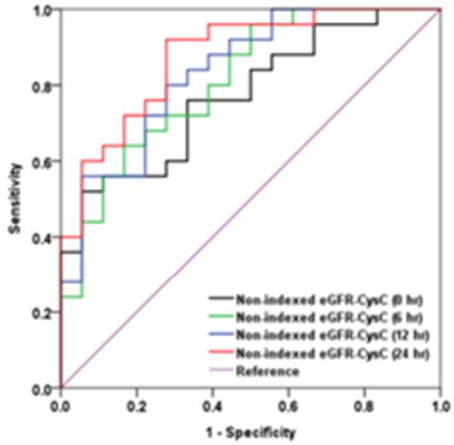
Figure 1.

(A)



	AUROC value	*P*-value	Cutoff	Sensitivity	Specificity
Serum CysC (0 hr)	0.747	0.006	>1.13	94.4%	44.0%
Serum CysC (6 hr)	0.770	0.003	>1.21	94.4%	48.0%
Serum CysC (12 hr)	0.779	0.002	>1.42	83.3%	60.0%
Serum CysC (24 hr)	0.834	<0.001	>1.80	77.8%	80.0%

(B)



	AUROC value	*P*-value	Cutoff	Sensitivity	Specificity
Non-indexed eGFR-CysC (0 hr)	0.773	0.002	<47.8	52.0%	94.4%
Non-indexed eGFR-CysC (6 hr)	0.811	0.001	<42.6	64.0%	83.3%
Non-indexed eGFR-CysC (12 hr)	0.836	<0.001	<38.7	80.0%	72.2%
Non-indexed eGFR-CysC (24 hr)	0.876	<0.001	<27.7	92.0%	72.2%

Poster Presentation：AKI
Poster No.：C0079
Abstract Submission No.：APCN20251192

Impact of Cognitive Impairment on Renal and Mortality Outcomes in Patients with Type 2 Diabetes and Acute Kidney Injury: A Propensity-Matched Cohort Study

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Abstract

Background:

Cognitive impairment (CI) frequently coexists with type 2 diabetes (T2D) and may influence outcomes following acute kidney injury (AKI). This study evaluated the long-term impact of CI on renal and mortality outcomes in T2D patients with AKI.

Methods:

Using the TriNetX global research network (2010–2020), we identified adults (≥18 years) with concurrent AKI and T2D, with or without CI. After exclusions and 1:1 propensity score matching, 4,369 pairs were analyzed. Outcomes were assessed using Cox models and Kaplan-Meier curves over 3, 5, and 10 years.

Results:

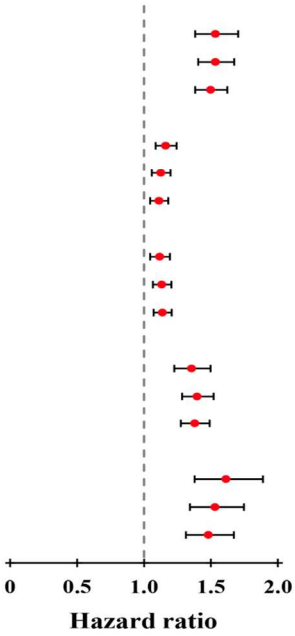
Among 4,369 matched pairs, patients with CI had significantly higher risks of all-cause mortality at 3, 5, and 10 years (HR 1.53, 95% CI 1.41–1.66; HR 1.53, 95% CI 1.42–1.65; HR 1.50, 95% CI 1.39–1.61, respectively). MAKE incidence was also elevated (HR 1.36 at 3y, HR 1.38 at 5y, HR 1.35 at 10y; all $p < 0.001$), driven by increased mortality rather than renal progression. CI patients had higher risks of hospitalization (HR 1.16 at 3y, HR 1.11 at 10y) and hospice care (HR 1.61 at 3y, HR 1.48 at 10y). MACE risk was mildly increased (HR 1.14 at 3y). Subgroup analyses showed higher mortality risk across all strata, especially in males (HR 1.62), patients with eGFR <60 (HR 1.67), and BMI ≥30 (HR 1.60). In contrast, the CI group had lower incidence of CKD stage 4/5 (10y HR 0.564), ESRD (HR 0.464), and dialysis initiation (HR 0.382), suggesting competing risks or care limitation. All survival outcomes differed significantly by log-rank test ($p < 0.001$).

Conclusions:

Among patients with AKI and T2D, CI was associated with consistently worse long-term survival, hospitalization, and renal outcomes. These findings highlight the need for proactive multidisciplinary management in this cognitively vulnerable population.

Keywords：Cognitive impairment, Acute kidney injury, Type 2 diabetes mellitus , Renal outcomes, Mortality

Outcome	Event/N		HR (95%CI)	
	AKI+T2D+CI	AKI+T2D+Non-CI		
All-cause mortality				
3yr	836/4369	607/4369	1.53	(1.38- 1.70)
5yr	1151/4369	884/4369	1.53	(1.41- 1.67)
10yr	1334/4369	1092/4369	1.50	(1.38- 1.62)
All-cause hospitalization				
3yr	1761/4369	1686/4369	1.16	(1.09- 1.24)
5yr	1962/4369	2009/4369	1.13	(1.06- 1.20)
10yr	2047/4369	2159/4369	1.11	(1.05- 1.18)
MACE				
3yr	1801/4369	1735/4369	1.12	(1.05- 1.19)
5yr	2091/4369	2059/4369	1.13	(1.07- 1.20)
10yr	2232/4369	2250/4369	1.14	(1.07- 1.21)
MAKE				
3yr	864/4369	701/4369	1.36	(1.23- 1.50)
5yr	1187/4369	984/4369	1.40	(1.28- 1.52)
10yr	1370/4369	1195/4369	1.38	(1.28- 1.49)
Hospice				
3yr	379/4369	262/4369	1.61	(1.38- 1.89)
5yr	514/4369	398/4369	1.53	(1.34- 1.75)
10yr	588/4369	488/4369	1.48	(1.31- 1.67)



Poster Presentation：AKI
Poster No.：C0080
Abstract Submission No.：APCN20251202

Systemic Immune Inflammatory Index for Acute Kidney Injury Prediction in Non-Cardiac Patients: A Diagnostic Test Accuracy Meta-Analysis

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Abstract

Background: Acute kidney injury (AKI) is a major health concern linked to high morbidity and mortality. Inflammation significantly contributes to AKI development and various markers such as neutrophil, platelet, and procalcitonin have been associated with it. Evidence supports the role of SII as a useful predictor of outcomes in patients with cardiovascular disease, particularly for predicting contrast-induced AKI. Although SII has demonstrated potential, its predictive value in non-cardiac AKI patients remains limited. Thus, we aim to assess available evidence of SII for AKI prediction in non-cardiac cases.

Methods: Literatures from PubMed, PMC, Google Scholars and Science Direct were searched with keywords associated with “Acute Kidney Injury” and “Systemic Immune-Inflammation Index”. We use the Quality Assessment of Diagnostic Accuracy Studies (QUADAS-2) to assess the risk of bias in each study and Grading of Recommendation, Assessment, Development and Evaluation (GRADE) to appraise each outcome. Pooled analysis of univariate and multivariate logistic regression of odds ratio (OR) were done using the generic inverse variance method. A diagnostic test accuracy analysis of SII in predicting AKI was also done.

Results: A total of 7 studies, encompassing 5708 patients were included in the analysis. 3 studies showed low risk of bias and the rest have some concerns of bias. Higher SII showed an increased risk of patients having AKI based on pooled analysis of univariate OR (OR = 2.03 ; 95% CI 1.18-3.48), but not multivariate OR (OR = 1.01 ; 95% CI, 0.99-1.02, P = 0.44). Pooled sensitivity of SII in predicting AKI is 80.5% (95% CI, 69.1%-88.4%) with specificity to be 55.3% (95% CI, 35%-73.95). The area under curve value is 0.761 with the Q index of 0.63, indicating limited clinical utility with moderate diagnostic accuracy.

Conclusion: Current evidence shows SII only has limited clinical use for predicting AKI in non-cardiac patients. Studies included in this review are retrospective, more high-quality prospective studies such as randomized clinical trials are needed to confirm this finding.

Keywords：Acute Kidney Injury, Systemic Immune Inflammation Index

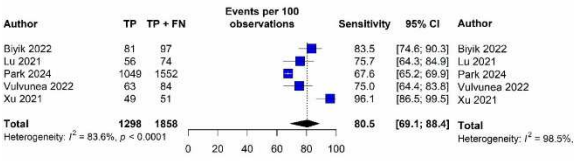

Figure 1. Pooled Sensitivity

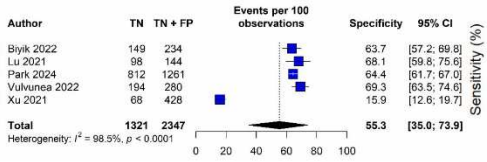

Figure 2. Pooled Specificity

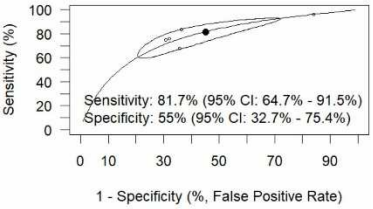

Figure 3. ROC Curve

Table 1. GRADE Assessment

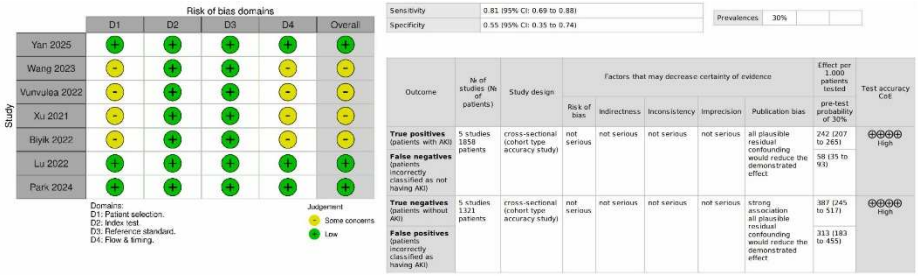

Figure 4. QUADAS-2 Risk of Bias Assessment

Sensitivity	0.81 (95% CI: 0.69 to 0.88)
Specificity	0.55 (95% CI: 0.35 to 0.74)

Prevalence: 30%

Outcome	№ of studies (№ of patients)	Study design	Factors that may decrease certainty of evidence					Effect per 1,000 patients tested	Test accuracy CoE
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	pre-test probability of 30%	
True positives (patients with AKI)	5 studies 1858 patients	cross-sectional (cohort type accuracy study)	not serious	not serious	not serious	not serious	all plausible residual confounding would reduce the demonstrated effect	242 (207 to 265)	⨁⨁⨁⨁ High
False negatives (patients incorrectly classified as not having AKI)								58 (35 to 93)	
True negatives (patients without AKI)	5 studies 1321 patients	cross-sectional (cohort type accuracy study)	not serious	not serious	not serious	not serious	strong association all plausible residual confounding would reduce the demonstrated effect	387 (245 to 517)	⨁⨁⨁⨁ High
False positives (patients incorrectly classified as having AKI)								313 (183 to 455)	

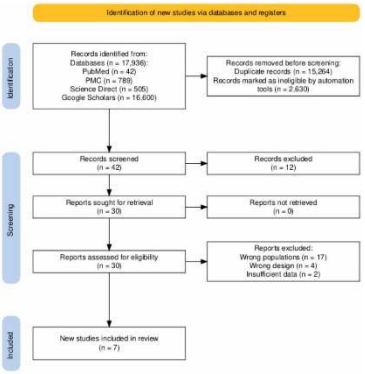

Figure 5. PRISMA Flow of this Review

Poster Presentation：AKI
Poster No.：C0083
Abstract Submission No.：APCN20251247

Trajectories of serum creatinine and associations with mortality among patients with acute kidney injury: a multicenter retrospective analysis

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Abstract

Background: Acute kidney injury (AKI) is a heterogeneous syndrome, and identifying clinically relevant classes through serum creatinine (SCr) trajectories is crucial for individualized treatment.

Methods: In the development cohort, adult patients who developed AKI during hospitalization were included using the Medical Information Mart for Intensive Care-IV database. A latent class mixed model was utilized to generate SCr trajectories, using SCr values from 48 hours before to 7 days after the onset of AKI. The primary outcome was 14-day mortality, and the secondary outcome was one-year mortality. A multivariable Cox regression analysis was performed to assess the relationship between trajectory classes and the outcomes. The model was subsequently externally validated in two independent databases.

Results: In the development cohort of 7,797 AKI patients, we identified five trajectory classes: low-stable, fast resolver; high-stable, fast resolver; high-slow convex changing, partial recovery; low-fast convex changing, recovery; and high-increasing, nonrecovery. Using the mildest class, "low-stable, fast resolver," as a reference, the "high-increasing, nonrecovery" class demonstrated the highest risks for 14-day mortality (aHR 6.42, 95% CI 4.32-9.53) and one-year mortality (aHR 2.51, 95% CI 2.13-2.96). The "low-fast convex changing, recovery" class, which had the most significant proportion of AKI stage 3, showed only a mild to moderate increase in 14-day mortality (aHR 2.90, 95% CI 1.31-6.42) and one-year mortality (aHR 1.19, 95% CI 0.83-1.71). Similar trajectories were observed in the validation cohorts.

Conclusions: Based on SCr trajectories, we identified and validated five classes of AKI patients with considerable variation in mortality risk.

Keywords：Keywords: Acute kidney injury, trajectory, latent class mixed model, heterogeneity

Poster Presentation：AKI
Poster No.：C0084
Abstract Submission No.：APCN20251256

Renal tubular necrosis induced by ovarian cyst in 24 years old women- A case study

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Abstract
Background
Renal parenchymal disease pertains to condition that damages the functional tissue (parenchyma) of the kidneys, affecting their efficiency to filter waste and manage bodily fluids. Various conditions, such as diabetes, hypertension, and other illnesses, can cause this damage, which can trigger the variety of symptoms and eventually lead to chronic kidney disease. In most of the cases different comorbid conditions like diabetes, hypertension, IgA nephropathy, lupus glomerulonephritis, acquired cystic kidney disease, Anderson-Fabry disease, and genetic predisposition can affect the renal parenchyma. But in rare cases conditions like ovarian cyst can induce this type of condition.
Case presentation
24 year old lady from Rajkot region of India having history of right ovarian cyst for 10 years and later developed with decreased urine output having complaint of burning micturition, and irregular menses. Despite being present for longer duration, the cyst was attributed to conventional issues. Diagnostic test suggested renal tubular necrosis, acute kidney injury with hypernatremia.
Conclusion
This case underscores the insidious nature of renal parenchyma injury, stressing the necessity of early detection and the risks of delayed diagnosis influenced by cultural beliefs and restricted healthcare access. It also enlightens the significance of future various steps in the prognostic manner.

Keywords：Renal parenchymal injury, ovarian cyst, acute kidney injury, hypernatremia

Poster Presentation：AKI
Poster No.：C0085
Abstract Submission No.：E_APCN20251285

Vitamin C Supplementation and Kidney Stone Risk: A Systematic Review and Dose Response Meta-Analysis

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School of Medicine, Indonesia University, Salemba, Jakarta, Indonesia[2]

Introduction :
Vitamin C is commonly taken for its antioxidant properties and the health benefits it is believed to offer. Nonetheless, its conversion to oxalate brings up worries about a possible link to the development of kidney stones. Earlier studies have shown mixed results, and the relationship between dosage and response is still uncertain.
Methods :
Systematic search was done by ten author in several database such as PubMed, Science Direct, EBSCO, and Cochrane. We used *Risk of Bias 2* (ROB2) to evaluate the quality of each study. Eligible studies will be extracted and compiled in tables to be analysed. Statistical analysis was performed using R Studio 2024.09.0+375 with "doseresmeta" code. This systematic and meta-analysis followed a PICO framework. The outcomes of interest comprised the frequency of kidney stones and associated risk factors.
Results :
Six RCT's studies examining the relationship between Vitamin C supplements and the risk of kidney stones were analyzed together. The incidence of kidney stones was notably higher in men compared to women taking Vitamin C supplements (OR= 1.72; 95% CI: 1.09 to 2.42; P=0.02). Vitamin C supplements (250-499mg/d, 1000-1499mg/d) showed a significant association with the risk of renal stones in men (OR= 1.05, 95% CI: 1.00 to 1.28, P=0.04; OR= 1.09, 95% CI: 1.10 to 1.13, P<0.00001; respectively). However, there was no significant association between Vitamin C supplements (500-999 mg/d, >1500 mg/d) and the risk of renal stones in men (OR= 1.30, 95% CI: 0.99 to 1.46, P=0.07; OR= 1.24, 95% CI: 1.00 to 1.63, P= 0.05; respectively). Furthermore, Vitamin C supplements (250-499mg/d, 500-999mg/d, 1000-1499mg/d, >1500mg/d) did not demonstrate a significant association with the risk of renal stones among women (OR= 1.00, 95% CI: 0.82 to 1.22, P=0.98; OR= 1.08, 95% CI: 0.99 to 1.18, P=0.09; OR= 0.99, 95% CI: 0.90 to 1.08, P=0.77; OR= 0.99, 95% CI: 0.99 to 1.09, P=0.88; respectively).
Conclusion :
Vitamin C supplements showed a significant association with an increased risk of kidney stone occurrence in men, but this was not observed in women. Additional multicenter, prospective, and long-term follow-up randomized controlled trials (RCTs) are necessary to confirm these results.