

AKI

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1. Proton Pump Inhibitors and Disproportionate Reporting of Acute Kidney Injury and Tubulointerstitial Nephritis: A FAERS Pharmacovigilance Study, 2020-2025.

Authors: Alshammari, Thamir M.;Alshammari, Mohammad Kanan;Alosaimi, Hind M.;Yasmeen, Ayesha and Syed, Mamoon H.

Publication Date: Feb 06 ,2026

Journal: Journal of Clinical Medicine 15(3)

Abstract: Background/Objectives: Proton pump inhibitors (PPIs) are widely used, yet questions persist about kidney-related adverse events. We evaluated disproportional reporting of acute kidney injury (AKI) and tubulointerstitial nephritis (TIN) with PPIs in the FDA Adverse Event Reporting System (FAERS) from 2020 to 2025. Methods: FAERS reports were screened using MedDRA Preferred Terms. Report characteristics and annual counts of AKI and TIN reports were summarized. Reporting Odds Ratio (ROR), Proportional Reporting Ratio (PRR), Empirical Bayes Geometric Mean (EBGM), and Information Content (IC) were used to assess disproportionality. Results: We identified 13,654 PPI-associated AKI reports and 2409 TIN reports in FAERS (2020-2025). Reports were predominantly from the United States, and missing age/sex information was common. Hospitalization was reported in 12.3% of AKI and 22.7% of TIN reports, and death in 9.1% and 5.0%, respectively. Across all years, disproportionality analyses using ROR, PRR, EBGM, and IC consistently met signal thresholds for both outcomes, with stronger signals in 2020-2022 and attenuation thereafter alongside declining report counts. Conclusions: FAERS data show persistent disproportional reporting of AKI and TIN with PPI use. Causality cannot be inferred, but the findings support cautious, indication-based PPI prescribing and highlight the need for robust studies to clarify renal safety.

2. Evaluation of Preoperative Left Ventricular Relative Wall Thickness for Predicting Postoperative Acute Kidney Injury in Elderly Hip Fracture Patients.

Authors: Ceren, Imran;Kalayci, Dilek;Timuroglu, Arif;Gocer, Kemal;Sener, Yusuf Ziya;Acikgoz, Eser;Bozduman Habip, Fadime and Ulucakoy, Coskun

Publication Date: Jan 30 ,2026

Journal: Journal of Clinical Medicine 15(3)

Abstract: Objectives: This study aimed to explore the association between left ventricular relative wall thickness (RWT) and postoperative acute kidney injury (AKI) in elderly patients who underwent hip fracture surgery. Additionally, we evaluated the prognostic value of RWT for postoperative clinical outcomes in this high-risk group. Methods: This prospective study included 131 patients aged ≥ 65 years who underwent surgery for femoral neck or intertrochanteric hip fractures. Preoperative echocardiographic parameters, including RWT, were recorded and their associations with postoperative AKI were analyzed. Postoperative cardiovascular complications and clinical outcomes were assessed. Results: Postoperative AKI occurred in 19.1% of patients and was significantly associated with higher in-hospital mortality (20% vs. 5.6%; $p = 0.036$). Patients who developed AKI had significantly higher RWT (0.54, 0.503, $p = 0.048$, respectively). Receiver operating characteristic (ROC) curve analysis was performed for preoperative echocardiographic parameters, such as interventricular septum (IVS), posterior wall thickness (PWT), left atrium (LA) diameter, and RWT, to evaluate their predictive ability for AKI. The area under the curve (AUC) values were 0.645 for IVS, 0.632 for PWT, 0.713 for LA diameter, and 0.628 for RWT (all $p = 0.435$ showed no significant differences in AKI, mortality, delirium, intensive care unit admission rates, cardiac complications, or ischemic events (all $p > 0.05$). Conclusions: Preoperative RWT demonstrated a modest but statistically significant association with postoperative AKI in elderly hip fracture patients with preserved left ventricular ejection fraction. Although its standalone predictive value is limited, RWT may contribute to perioperative risk stratification when interpreted alongside other echocardiographic, clinical, and biochemical parameters in this vulnerable high-risk patient population

3. Clinical diagnosis and biomarkers of acute kidney injury in liver cirrhosis: a systematic review.

Authors: Chen B.;Zheng L.;He X.;Wu J. and Zheng, M.

Publication Date: 2026

Journal: Therapeutic Advances in Gastroenterology 19(pagination), pp. Date of Publication: 01 Jan 2026

Abstract: Background: Acute kidney injury (AKI) in cirrhotic patients is associated with high morbidity and mortality. Serum creatinine (sCr) has limited utility for early detection and etiological differentiation. Novel biomarkers and predictive models offer potential to address these limitations. Objective(s): To comprehensively evaluate the diagnostic performance of novel biomarkers and predictive models for the early detection and etiological differentiation of AKI in patients with liver cirrhosis. Design(s): Systematic review conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses. Data sources and methods: A comprehensive literature search was performed in PubMed/Medline, EMBASE, and the Cochrane Library from inception to August 31, 2025. Studies evaluating biomarkers or models for AKI prediction or phenotyping in adult cirrhotic patients were included. Study selection, data extraction, and quality assessment (using Quality Assessment of Diagnostic Accuracy Studies-2, QUADAS-2) were performed independently by reviewers. Result(s): A total of 33 studies were included. For the early prediction of AKI, serum cystatin C (Cys C) demonstrated superior performance to sCr, with an area under the receiver operating characteristic curve (AUROC) of up to 0.85. Urinary neutrophil gelatinase-associated lipocalin (NGAL) exhibited strong predictive capability and was most reliable in differentiating acute tubular necrosis from hepatorenal syndrome (HRS), achieving an AUROC up to 0.87. In contrast, kidney injury molecule-1, interleukin-18, and liver-type fatty acid binding protein, showed only moderate or inconsistent performance across most studies. Seven studies developed predictive models by integrating clinical variables with biomarkers, some of which employed machine learning techniques. However, the clinical applicability of these models is currently constrained by significant heterogeneity and limited external validation. Conclusion(s): Serum Cys C and urinary NGAL offer distinct advantages over sCr in the

early diagnosis and phenotypic differentiation of AKI. Although prediction models show promise, their routine clinical application requires further standardization and extensive external validation. Trial registration: PROSPERO (CRD420251126410). Copyright © The Author(s), 2026. This article is distributed under the terms of the Creative Commons Attribution-NonCommercial 4.0 License (<https://creativecommons.org/licenses/by-nc/4.0/>) which permits non-commercial use, reproduction and distribution of the work without further permission provided the original work is attributed as specified on the SAGE and Open Access pages (<https://us.sagepub.com/en-us/nam/open-access-at-sage>).

4. Development and patterns of acute-on-chronic liver failure in patients with cirrhosis and acute kidney injury.

Authors: Fischer, Susan;McCoy, Martin Sebastian;Fiocco, Marta;Kerbert, Annarein;Cervantes-Alvarez, Eduardo;Hahner, Jan;Praktiknjo, Michael;Brol, Maximilian Joseph;Uschner, Frank Erhard;Wolters, Lena;Zeuzem, Stefan;Cabello, Josune;Peiffer, Kai-Henrik;Balak, Jeetindra;Arbous, Sesmu;Nieuwenhuizen, Jeroen;van Westerloo, David;Jan van Zonneveld, Anton;Trebicka, Jonel and Coenraad, Minneke

Publication Date: Mar ,2026

Journal: JHEP Reports : Innovation in Hepatology / EASL 8(3), pp. 101734

Abstract: Background & Aims: The prevalence and evolution of acute-on-chronic liver failure (ACLF), particularly extrarenal organ failures, in patients with cirrhosis and acute kidney injury (AKI) are not well characterized. This study investigated the development and progression of ACLF in patients with cirrhosis who develop AKI, aiming to improve understanding of disease course during the critical period following AKI onset. Methods: We conducted a retrospective cohort study of hospitalized patients with cirrhosis and AKI at two tertiary centers between 2010 and 2023. Data on AKI etiology, treatment, ACLF development and progression, and survival were collected. Multivariable regression models were used to assess associations between baseline and AKI-related characteristics, ACLF outcomes, and mortality. Results: A total of 672 patients (71% male) were included. AKI progression or non-response to therapy occurred in 47% of patients. ACLF was present at the time of AKI diagnosis in 406 patients (60%); among these, 106 (26%) experienced ACLF progression, predominantly involving renal, respiratory, and circulatory failure. Of the 266 patients without ACLF at AKI diagnosis (40%), 101 (38%) subsequently developed ACLF, most commonly with renal, respiratory, and liver failure. In multivariable analysis, patients with hepatorenal syndrome-AKI (HRS-AKI) or other/mixed AKI etiologies had a higher risk of ACLF development compared to those with pre-renal AKI (odds ratio [OR] 9.67, 95% CI 3.96-23.57; OR 4.98, 95% CI 1.78-12.95, respectively). HRS-AKI and AKI stage 2 were independently associated with ACLF progression after adjustment for MELD score and relevant clinical risk factors (OR 2.31, 95% CI 1.08-4.95; OR 2.35, 95% CI 1.03-5.36). The cumulative incidence of death was 47% at 90 days after AKI diagnosis (95% CI 44-51). Conclusions: Patients with cirrhosis who develop AKI are at high risk of ACLF development and mortality. Respiratory failure is the most frequent extrarenal organ failure among patients who develop ACLF or experience ACLF progression. Impact and implications: This study highlights the significant risk of acute-on-chronic liver failure development in patients with cirrhosis and acute kidney injury (AKI), particularly in those with hepatorenal syndrome-AKI or other/mixed types of AKI. Given the high short-term mortality observed, early recognition and risk stratification of AKI in cirrhosis are crucial. These findings are particularly relevant for hepatologists, nephrologists, and intensivists, as they underscore the need for improved therapeutic strategies targeting AKI non-responders. Future prospective studies should not only explore targeted interventions to improve outcomes in this high-risk population but also aim to elucidate the underlying pathophysiology driving AKI progression and acute-on-chronic liver failure development in patients with cirrhosis and AKI. Copyright © 2026 The Author(s)

5. Fish oil supplementation and clinical outcomes in patients with sepsis-associated acute kidney injury: A retrospective cohort study from the MIMIC-IV database.

Authors: Gao, Ya;Tang, Shuo;Liu, Xiangtian;Zeng, Jia;Ma, Caifeng and Tian, Xinghan

Publication Date: Apr ,2026

Journal: Clinical Nutrition ESPEN 72, pp. 102956

Abstract: BACKGROUND & AIMS: Sepsis-associated acute kidney injury (SA-AKI) is associated with high mortality rates and lacks effective interventions. Omega-3 polyunsaturated fatty acids, abundant in fish oil, possess anti-inflammatory and immune-regulatory properties; however, their impact on the prognosis of SA-AKI remains unclear. This study aims to explore the association between fish oil supplementation and clinical outcomes in critically ill patients with SA-AKI. METHOD: A retrospective cohort study was conducted using the MIMIC-IV database. A total of 14,234 patients with SA-AKI were included, with 142 patients in the fish oil supplementation group and 142 in the control group, matched by propensity scores. Cox regression, logistic regression, and linear regression models were employed to evaluate the impact of fish oil supplementation on survival, renal function recovery, and length of hospital stay. Sensitivity analyses were performed to assess the robustness of the results. RESULTS: Survival analysis suggested that the fish oil supplementation group had a higher 21-day survival rate compared to the control group. Cox regression indicated that fish oil supplementation was associated with lower 21-day mortality (HR = 0.74, 95 % CI: 0.59-0.99, P = 0.032). Logistic regression also showed that it was associated with improved renal function recovery (OR = 1.76, 95 % CI: 1.03-3.01, P = 0.040). Subgroup analysis suggested that the effect of fish oil supplementation may vary based on the presence of congestive heart failure and CRRT/RRT treatment status. No significant difference was observed in ICU length of stay between the two groups. CONCLUSION: Fish oil supplementation in critically ill patients with SA-AKI was associated with reduced 21-day mortality and improved renal function recovery. These findings support the need for prospective randomized controlled trials to confirm the therapeutic potential of omega-3 PUFA in sepsis-related organ dysfunction. Copyright © 2026 European Society for Clinical Nutrition and Metabolism. Published by Elsevier Ltd. All rights reserved.

6. Predictive and prognostic performance of urinary albumin-to-creatinine ratio for acute kidney injury: a systematic review and meta-analysis.

Authors: Kitisin, Nuanprae;Ismail, Jordan;Raykateeraroj, Nattaya;Hikasa, Yukiko;Caroli, Alessandro;Nubel, Jonathan;Eastwood, Glenn;Bellomo, Rinaldo and Neto, Ary Serpa

Publication Date: Feb 12 ,2026

Journal: Scientific Reports 16(1)

Abstract: The urine albumin-to-creatinine ratio (UACR) is a well-established marker for chronic kidney disease, but its utility in predicting acute kidney injury remains uncertain. This systematic review and meta-analysis aimed to evaluate predictive performance for AKI development and prognostic performance for AKI progression in hospitalized adults. A comprehensive search of Ovid MEDLINE, Embase, and CENTRAL databases identified 13 studies (n = 10,438) on AKI incidence and three studies (n = 1596) on AKI progression. Elevated UACR was associated with an increased risk of AKI (pooled OR 1.39; 95% CI 1.08-1.79) and AKI progression (pooled OR 3.76; 95% CI 2.59-5.45). The pooled sensitivity and specificity for AKI prediction were 0.71 (95% CI 0.59-0.80) and 0.67 (95% CI 0.56-0.76), respectively, with an area under the curve (AUC) of 0.74. However, there was high heterogeneity across studies, and UACR thresholds for AKI prediction varied widely. Despite these limitations, UACR appears to be a promising, low-cost biomarker for predicting AKI, particularly in high-risk settings such as cardiac surgery. Standardization of thresholds and further validation are needed to support its clinical implementation. Copyright © 2026. The Author(s).

7. Cardiac surgery-associated acute kidney injury requiring haemofiltration: The immediate postoperative phase is critical to achieve equivalent long-term survival.

Authors: Kumar, Sambhavi Sneha;Kumar, Ujjawal;Karunanantham, Jayenthan;Sitaranjan, Daniel and Farid, Shakil

Publication Date: Jun ,2026

Journal: Journal of Critical Care 93, pp. 155474

Abstract: PURPOSE: To evaluate the clinical impact of cardiac surgery-associated acute kidney injury requiring continuous venovenous haemofiltration by assessing its impact on short- and long-term outcomes. METHODS: Data for all adult cardiac surgeries performed between 2015 and 2024 were retrieved from our institutional database. 1:2 propensity-score matching of patients requiring postoperative haemofiltration and those not requiring haemofiltration was performed based on the EuroSCORE II covariates. In-hospital outcomes (mortality, postoperative complications, postoperative hospitalisation duration) and long-term survival were evaluated. RESULTS: After excluding patients requiring renal replacement therapy preoperatively, 16,681 patients were included. Propensity matching yielded Group H (postoperative haemofiltration, n = 510) and Group C (controls, n = 1020). Groups had generally similar demographics and preoperative clinical characteristics. Group H exhibited worse in-hospital outcomes compared to Group C. Hospital mortality was significantly higher in Group H (23.1% vs 6.2%, p : After excluding patients requiring renal replacement therapy preoperatively, 16,681 patients were included. Propensity matching yielded Group H (postoperative haemofiltration, n = 510) and Group C (controls, n = 1020). Groups had generally similar demographics and preoperative clinical characteristics. Group H exhibited worse in-hospital outcomes compared to Group C. Hospital mortality was significantly higher in Group H (23.1% vs 6.2%, p : After excluding patients requiring renal replacement therapy preoperatively, 16,681 patients were included. Propensity matching yielded Group H (postoperative haemofiltration, n = 510) and Group C (controls, n = 1020). Groups had generally similar demographics and preoperative clinical characteristics. Group H exhibited worse in-hospital outcomes compared to Group C. Hospital mortality was significantly higher in Group H (23.1% vs 6.2%, p CONCLUSIONS: Postoperative AKI requiring haemofiltration is associated with poor outcomes following cardiac surgery. However, in patients surviving the acute postoperative phase, there was no significant difference in long-term survival compared to those who did not require haemofiltration. These findings underscore the importance of early recognition and management of acute kidney injury after cardiac surgery whilst offering a more nuanced understanding of long-term prognosis. Copyright © 2026 The Authors. Published by Elsevier Inc. All rights reserved.

8. Kidney-Lung Crosstalk in Acute Nephrologic Involvement: Mechanisms, Complement Activation, and Implications for Multiorgan Dysfunction

Authors: Martino, Giuliana;Tinti, Francesca;Perrone, Marco Alfonso;Condo, Stefano;Castagnola, Veronica;Manca de Villahermosa, Simone;Triggianese, Paola;Olesinska, Marzena;Valentini, Alessandra;Bernardini, Sergio;Della Morte, David;Iellamo, Ferdinando;Salomone, Luca;Lai, Silvia and Mitterhofer, Anna Paola

Publication Date: Feb 05 ,2026

Journal: Life 16(2)

Abstract: Acute kidney injury (AKI) is a systemic syndrome capable of inducing remote organ dysfunction. Kidney-lung crosstalk is a form of interorgan communication in acute nephrology, with the heart acting as a pivotal intermediary. Emerging evidence supports the involvement of a gut-lung-kidney axis. Complement activation in these multiorgan crosstalk has emerged as a central amplifier of multiorgan damage. We reviewed the literature on kidney-lung interactions and complement activation in AKI through a bibliographic search of PubMed, Scopus, and Web of Science. Most available data derive from experimental studies or intensive care unit (ICU) populations, often reported in reviews. We further report our real-world experience in a non-ICU nephrology setting, including 186 consecutive patients with AKI. Pulmonary involvement was present at hospital admission in 118 patients (63%). AKI stage 1 was observed in 20/118 patients (17%) with pulmonary involvement compared with 18/68 patients (27%) without pulmonary involvement ($p < 0.001$). In conclusion, AKI should be regarded as a systemic disease from its earliest stages. Kidney-lung interactions are clinically relevant even in mild AKI and outside critical care settings, underscoring the need for integrated organ assessment in routine nephrology practice. This review integrates complement activation as a central amplifier of kidney-lung

crosstalk and multiorgan dysfunction, bridging experimental evidence with real-world observations from a non-critical care AKI population. By focusing on early AKI stages and the timing of pulmonary involvement, we highlight AKI as an active driver of systemic organ interactions rather than a late consequence of critical illness.

9. Diffusive Versus Convective Continuous Renal Replacement Therapy for Acute Kidney Injury: A Systematic Review and Meta-Analysis.

Authors: Masud F.;Arshad A.R. and Sabir, S.

Publication Date: 2026

Journal: Therapeutic Apheresis and Dialysis (pagination), pp. Date of Publication: 2026

Abstract: Introduction: This review assesses whether the mode of solute clearance in continuous renal replacement therapy influences mortality and renal recovery. Method(s): The protocol was registered with PROSPERO (CRD420251030433). PubMed, Cochrane Library, and LILACS databases were searched until April 24, 2025. Observational studies and randomized controlled trials comparing diffusive and convective strategies of continuous renal replacement therapy in patients with acute kidney injury were included. Risk of bias was assessed using Cochrane ROB 2 and ROBINS-I tools. Result(s): Thirteen studies with 1146 patients were included. Diffusive modality had no advantage over convective modality with regards to mortality in intensive care unit (RR = 1.04; 95% CI: 0.83, 1.30; p = 0.73), 28-day mortality (RR = 1.19, 95% CI: 0.89, 1.59; p = 0.25), renal recovery (RR = 1.07; 95% CI: 0.65, 1.75; p = 0.79), or the length of stay in intensive care unit (SMD = 0.16 days; 95% CI: -0.17, 0.49; p = 0.33). Filter clotting was 31% less frequent in diffusive modality (RR = 0.69; 95% CI: 0.58, 0.81; p = 0.0001). Conclusion(s): Diffusive modalities of continuous renal replacement therapy are not different from convective modalities in terms of mortality and renal recovery. However, they have the advantage of a longer filter lifespan resulting from less frequent clotting. Copyright © 2026 International Society for Apheresis and Japanese Society for Apheresis.

10. Acute respiratory distress syndrome and acute kidney injury in critically ill patients: A scoping review on this lung-kidney crosstalk.

Authors: Mattedi F.Z.;Ribeiro H.S.;Busatto G.F.;Carvalho C.R.R.;Zanetta D.M.T. and Burdmann, E. A.

Publication Date: 2026

Journal: Journal of Critical Care 93(pagination), pp. Article Number: 155445. Date of Publication: 01 Jun 2026

Abstract: Introduction The incidence of acute kidney injury (AKI) in patients with acute respiratory distress syndrome (ARDS) is high; nonetheless, the lung-kidney crosstalk remains unclear. Objective Describe the association between ARDS and AKI in critically ill patients. Methods This scoping review was conducted according to the JBI and PRISM-ScR and included studies that investigated critically ill patients with ARDS (Participants), described AKI-related outcomes (Concept), and were conducted in hospitals (Context). MEDLINE, Embase, and LILACS databases were searched for articles published up to January 2024. Only observational studies were considered. Data on the diagnosis of ARDS-AKI and other kidney-related outcomes were extracted. Results A total of 2943 studies were screened, of which 28 were included in this review. Most studies were prospective and the majority originated from Europe. AKI was diagnosed using the KDIGO criteria in most studies and the pooled overall rate of AKI development across the studies was 46.8% (95% CI: 40.8-52.8). Two reports identified ARDS as an independent risk factor for AKI. Kidney replacement therapy was described in 17 studies. AKI recovery

was described in only three studies. Seventeen studies evaluated hospital mortality, specifically in patients with ARDS-AKI, and found a greater mortality risk as compared to only ARDS. Conclusions This scoping review emphasizes the variability of the evidence, which hinders definitive conclusions about the association between ARDS and AKI, despite their common occurrence in critically ill patients. Therefore, a significant gap remains in our understanding of this lung-kidney interaction. Copyright © 2026 Elsevier Inc.

11. Practical Acute Kidney Injury Care: Embedding the UK Kidney Association Summit Recommendations Across Hospital Settings

Authors: Mello, Heliana Morato Lins E.; James, Benjamin David and Green, Darren

Publication Date: Feb 11 ,2026

Journal: British Journal of Hospital Medicine 87(2), pp. 50919

Abstract: Acute kidney injury (AKI) affects up to 20% of hospitalised patients and is associated with significant morbidity, mortality, and healthcare burden. Despite national guidelines, variability in recognition and management persists. This review bridges the UK Kidney Association (UKKA) AKI Summit recommendations with real-world National Health Service (NHS) clinical practice, summarising 24 key recommendations into core principles and translating them into practical guidance for clinicians across emergency, ward-based, critical care, and geriatric settings. Emphasis is placed on early identification, fluid and medication management, escalation to specialist teams, and discharge planning. We highlight implementation tools, including e-alert systems, care bundles, and standardised referral pathways. Finally, the article discusses barriers to consistent AKI care and proposes system-wide strategies to support education, coordination, and long-term follow-up. This practical review offers a setting-specific roadmap to improve patient outcomes and promote consistent, proactive care across the AKI continuum. © Copyright: © 2026 The Author(s). Published by IMR Press.

12. Early Changes in Renal Function as Predictors of In-Hospital Mortality in COVID-19 Patients.

Authors: Olariu, Nicu; Kundnani, Nilima Rajpal; Dragan, Simona Ruxanda; Marc, Luciana-Elena; Buciu, Victor; Berceanu Vaduva, Delia Mira; Valcovici, Andreas; Ratiu, Ioana Adela; Bucuras, Petru and Mihaescu, Adelina

Publication Date: Feb 14 ,2026

Journal: Life 16(2)

Abstract: BACKGROUND: Acute kidney injury (AKI) is a frequent and prognostically relevant complication of COVID-19. However, reliance on static creatinine values or binary AKI definitions may overlook clinically meaningful early renal dynamics. We evaluated whether early renal function trajectories within the first 24-48 h of hospitalization provide incremental prognostic information. METHODS: We conducted a retrospective, single-center cohort study of adults hospitalized with laboratory-confirmed COVID-19 between December 2020 and December 2021. Early renal function patterns were defined using KDIGO-based changes in serum creatinine between admission and 24-48 h, classifying patients as stable, early improvement, or early deterioration. The primary outcome was in-hospital mortality. Multivariable logistic regression adjusted for age, sex, chronic kidney disease, comorbidities, inflammatory burden (C-reactive protein), nutritional status (albumin), pulmonary involvement, and treatment variables. RESULTS: Among 721 patients, 65.2% had stable renal function, 22.5% had early improvement, and 12.3% had early deterioration. In-hospital mortality differed significantly across dynamic patterns ($p = 0.007$). Mortality was lowest in the stable group (35.1%) and higher in both early improvement (48.1%) and early deterioration (44.9%). After multivariable adjustment, early improvement remained independently associated with higher in-hospital mortality compared with stable renal function (adjusted OR 1.53, 95% CI 1.03-2.28), while early deterioration showed a directionally similar but non-significant association. Early improvement was also associated with higher AKI burden and increased need for acute de novo hemodialysis.

CONCLUSIONS: Early renal function change patterns within the first 24-48 h of hospitalization carry prognostic value beyond static creatinine measures. Apparent early creatinine improvement may reflect recovery from prior injury or systemic instability rather than true renal recovery, identifying a subgroup at heightened risk. Classification based on early renal function assessment may enhance early risk stratification in hospitalized patients with COVID-19.

13. Epidemiology of rehabilitation practices for inpatients with nephrotic syndrome: a retrospective cohort study using an administrative database.

Authors: Shinkawa, Kanna;Yoshida, Satomi;Nakao, Yoko M.;Hayashi, Ayano;Sakoda, Kazunori;Yanagita, Motoko and Kawakami, Koji

Publication Date: Apr ,2026

Journal: Clinical & Experimental Nephrology 30(4), pp. 622–631

Abstract: INTRODUCTION: The clinical characteristics of patients with nephrotic syndrome undergoing in-hospital rehabilitation are not well-understood, and the effects of exercise on acute kidney injury (AKI) or venous thromboembolism (VTE) in this population remain unclear. METHODS: We conducted a retrospective cohort study using a nationwide Japanese administrative claims database. We examined the clinical background of patients aged ≥ 18 years with nephrotic syndrome who underwent in-hospital rehabilitation. In a subgroup analysis of patients with nephrotic syndrome hospitalized for 14-90 days, we assessed the associations between rehabilitation intensity or early initiation and the development of AKI and VTE, as well as changes in activities of daily living (ADL), using multivariate logistic regression. Several sensitivity analyses were performed to confirm the robustness of the results. RESULTS: Among the 6989 patients with nephrotic syndrome who were hospitalized for ≥ 7 days, 1447 (20.7%) received rehabilitation. Factors associated with rehabilitation included older age, female sex, AKI, cerebrovascular disease, use of intravenous corticosteroids, anticoagulants, diuretics, hypoglycemic drugs, and longer hospital stay. In the subgroup analysis, no statistically significant association was detected between rehabilitation intensity or early initiation and the development of VTE, AKI, or improvements in ADL during hospitalization. CONCLUSIONS: We described the clinical characteristics of patients with nephrotic syndrome who received in-hospital rehabilitation. In patients with nephrotic syndrome, no statistically significant association was detected between rehabilitation intensity or early initiation and the risk of VTE or AKI. Further studies are warranted to evaluate the effectiveness and safety of rehabilitation in patients with nephrotic syndrome. Copyright © 2026. The Author(s), under exclusive licence to Japanese Society of Nephrology.

14. A Clinical Prediction Score for Intradialytic Hypotension Among Hospitalized Patients with Acute Kidney Injury.

Authors: Suwanin, Piyanet;Pattharanitima, Pattharawin;Tasanarong, Adis and Anumas, Suthiya

Publication Date: Feb 11 ,2026

Journal: Medical Sciences 14(1)

Abstract: Background: Intradialytic hypotension (IDH) in hospitalized patients with acute kidney injury (AKI) is associated with increased morbidity and mortality. Early identification of high-risk patients may enable preventive strategies. This study aimed to identify risk factors for IDH and develop a prediction model in this setting. Method: We conducted a retrospective cohort study of hospitalized patients with dialysis-requiring AKI who underwent conventional renal replacement therapy (RRT). Univariable and multivariable analyses were performed using generalized estimating equations (GEE) to account for repeated dialysis sessions within patients. IDH was defined as systolic blood pressure We conducted a retrospective cohort study of hospitalized patients with dialysis-requiring AKI who underwent conventional renal replacement therapy (RRT). Univariable and multivariable analyses were performed using generalized estimating equations (GEE) to account for repeated dialysis sessions within patients. IDH was defined as systolic blood pressure Result: A total of 423 hemodialysis sessions from 85

patients were analyzed; the median age was 61 years, and the incidence of IDH session was 35.9%. Multivariable GEE analysis identified residual urine output A total of 423 hemodialysis sessions from 85 patients were analyzed; the median age was 61 years, and the incidence of IDH session was 35.9%. Multivariable GEE analysis identified residual urine output $p = 0.007$), vasopressor use (OR 3.36, $p = 0.002$), and lower pre-dialysis mean arterial pressure (MAP 80-89 mmHg: OR 2.43, $p = 0.002$; MAP = 0.002; MAP $p = 0.08$). A weighted integer-based risk score was derived directly from the coefficients of the final multivariable GEE model, stratifying patients into low-, intermediate-, and high-risk groups with IDH incidences of 11.6%, 33.9%, and 56.7%. The model demonstrated good discrimination, with an AUROC of 0.760 (95% CI, 0.714-0.807). Conclusions: The predictive score for IDH demonstrated good performance and highlights the importance of raising awareness to guide interventions aimed at improving the outcomes of hospitalized AKI patients requiring conventional RRT.

15. SGLT2 Inhibitors and Long-Term Outcomes After AKI.

Authors: Wannakittirat, Anyarin;Nimkietkajorn, Veerapatr;Thanapongsathorn, Peerapat;Chaijamorn, Weerachai;Sorose, Nattira;Leewongworasingh, Akarathep;Yimsangyad, Khanitha;Lumlertgul, Nuttha;Peerapornratana, Sadudee and Srisawat, Nattachai

Publication Date: Mar ,2026

Journal: KI Reports 11(3), pp. 103752

Abstract: Introduction: Currently, there is no specific treatment for post-acute kidney injury (AKI) survivors, one of the highest risk groups of the renal and nonrenal adverse long-term outcomes. This study aimed to determine whether the sodium-glucose cotransporter-2 inhibitor (SGLT2i) can decrease 1-year major adverse kidney events (MAKE365) in post-AKI setting. Methods: Multicenter randomized controlled trial, involving severe AKI survivors from 3 tertiary care hospitals, who were dialysis independent, and had an estimated glomerular filtration rate (eGFR) ≥ 20 ml/min per 1.73 m². The participants were randomized to receive empagliflozin 10 mg/d or matching placebo for 1 year after the incident AKI. The primary outcome was MAKE365, defined as a composite of persistent kidney dysfunction (a sustained decrease in eGFR $\geq 25\%$ or increase in serum creatinine $\geq 200\%$ of baseline), the need for long-term dialysis, or death at 1 year after the incident of AKI. Results: A total of 200 participants were included in this study, 98 patients in empagliflozin group and 102 patients in placebo group; AKI stage 3 was predominant, with renal replacement therapy required for 30% and 23% of patients in each group, respectively. On modified intention-to-treat analysis, MAKE365 occurred in 35% in the empagliflozin group and 36% in the placebo group ($P = 0.82$). The incident rate ratio indicated a significant reduction in recurrent AKI in the empagliflozin group (34 vs. 66 per 100 person-years, respectively; incident rate ratio: 0.51, 95% confidence interval [CI]: 0.31-0.84; $P = 0.008$). Conclusion: Empagliflozin could not show reduction in MAKE365 but showed potential benefits in reducing recurrent AKI. Copyright © 2025 International Society of Nephrology. Published by Elsevier Inc.

16. Distinguishing AKI from CKD: outcomes and characteristics of patients with abnormal serum creatinine and no known baseline.

Authors: Wong E.;Casula A.;Hughes R.;Cornish R.;Tilling K.;Selby N.M. and Medcalf, J.

Publication Date: 2026

Journal: BMC Nephrology 27(1) (pagination), pp. Article Number: 126. Date of Publication: 01 Dec 2026

Abstract: Background: Comparison of a patient's abnormal serum creatinine result to an earlier value is fundamental to differentiating Acute Kidney Injury (AKI) from Chronic Kidney Disease (CKD), and is the first step in electronic AKI detection systems. For those patients in whom a baseline serum creatinine is unavailable, some systems generate a warning message to highlight the elevated serum creatinine but without distinguishing AKI from CKD (a "?AKI?CKD" warning). We aimed to determine

demographic characteristics of this group, the proportion who had a first presentation of AKI, their clinical outcomes, and how these alert messages translate into subsequent biochemical testing and follow-up. Method(s): We performed a retrospective cohort analysis of adult patients with serum creatinine testing at University Hospitals of Leicester during 2019. Using the NHS England AKI detection algorithm, we identified patients with AKI Warning Test Scores (WTS) and "?AKI?CKD" warnings. The "?AKI?CKD" cohort was classified as probable AKI, probable CKD, or no follow-up result, based on subsequent serum creatinine measurements. Survival (90-day and 1-year) was analysed with Kaplan-Meier methods. Result(s): Among 3,464 patients with "?AKI?CKD" warnings, 8.5% were probable AKI, 59.4% probable CKD, and 32.0% had no follow-up test. Probable AKI patients were younger (median age 71 versus 76 years) and more often hospitalised at warning time (56% versus 15%). One-year survival was lower in probable AKI (72%) compared to probable CKD (88%) or no follow-up (89%). Probable AKI survival was similar to AKI WTS stage 1 but better than stages 2-3. Extending baseline serum creatinine look-back to 426 days changed categorisation minimally (Result(s): Among 3,464 patients with "?AKI?CKD" warnings, 8.5% were probable AKI, 59.4% probable CKD, and 32.0% had no follow-up test. Probable AKI patients were younger (median age 71 versus 76 years) and more often hospitalised at warning time (56% versus 15%). One-year survival was lower in probable AKI (72%) compared to probable CKD (88%) or no follow-up (89%). Probable AKI survival was similar to AKI WTS stage 1 but better than stages 2-3. Extending baseline serum creatinine look-back to 426 days changed categorisation minimally (Conclusion(s): These findings highlight that the major feature of the "?AKI?CKD" classification is not simply misclassification between AKI and CKD, but the variability of clinical response, with one-third of patients receiving no subsequent serum creatinine test. Most patients flagged as "?AKI?CKD" likely have CKD rather than AKI, and this, coupled with comparable outcomes of the probable AKI group to early-stage AKI, suggests minimal missed population-level AKI detection. However, one-third lacked follow-up testing, highlighting missed opportunities to identify CKD. Clinical trial number: Not applicable. Copyright © The Author(s) 2026.

17. A population based, regression discontinuity analysis examined the effects of nationwide alerting for acute kidney injury on healthcare and patient outcomes.

Authors: Xie M.;Geldsetzer P.;Blakeman T.;James M.;Scale T.;Tan Z. and Sawhney, S.

Publication Date: 2026

Journal: Kidney International (pagination), pp. Date of Publication: 17 Feb 2026

Abstract: INTRODUCTION: Previous randomized trials and real-world observational studies of electronic alerts for acute kidney injury (AKI) have yielded conflicting results. The applicability of trial findings to routine clinical practice is also contested. Despite this, AKI e-alerts remain widely implemented. Here, we used Regression Discontinuity Design (RDD) to evaluate the real-world causal effect of the nationwide AKI e-alert initiative in Wales. METHOD(S): The study encompassed hospital and community-based systems serving 3.1 million adults (aged 18 years and older) residing in Wales 2016-2020, following implementation of AKI e-alerts across all Welsh health boards; seven using passive alerts and one using interruptive alerts. We assessed outcomes across the e-alert threshold, including mortality, hospital admission/readmission, AKI severity and recovery, documentation of AKI, prescribing, and follow-up monitoring of proteinuria and blood pressure. RESULT(S): Among 861,494 hospital and 354,505 community patient encounters, AKI alerts were triggered in 5.8% and 2.0% of cases respectively (mean age 64 years, 54% female). In both settings, AKI alerts led to no significant changes in mortality [complier average treatment effect +1.31% (95% Confidence Interval -3.07, 4.74); +2.07% (-3.44, 6.65)] or admissions/readmissions [+0.13% (-3.82, 4.21); +4.07% (-1.84, 8.27)]. AKI coding was infrequent across both settings. Alerts modestly increased hospital coding [+5.88% (2.22, 7.58)] but had minimal impact on primary care coding post discharge [+0.72% (-0.67, 1.30)] and led to only small improvements in proteinuria and blood pressure monitoring. Findings were consistent across passive and interruptive alert types, clinical settings and subgroups. CONCLUSION(S): We found no causal evidence that AKI e-alerts (specifically implemented at a 50% creatinine rise threshold) improved or worsened clinical outcomes in this nationwide real-world evaluation. Consistently poor outcomes, limited documentation and follow-up care, even in the presence of e-alerts, underscores the

18. Perioperative dexmedetomidine and renal outcomes in adult cardiac surgery: an updated systematic review and meta-analysis.

Authors: Wen, Jie and Jiang, Fenglin

Publication Date: 2025

Journal: Frontiers in Medicine 12, pp. 1737121

Abstract: Background: Acute kidney injury (AKI) is a common complication following cardiac surgery, associated with increased morbidity and mortality. Dexmedetomidine (DEX), a highly selective alpha-2 adrenoceptor agonist, has shown potential renal protective effects, but evidence remains inconsistent. This study aims to evaluate the efficacy of DEX in preventing AKI and improving renal outcomes in cardiac surgery patients through a systematic review and meta-analysis of randomized controlled trials (RCTs). Methods: A comprehensive search of PubMed, Cochrane Library, Embase, and Web of Science was conducted until April 2025. PICOS criteria were applied to select studies comparing DEX with placebo/normal saline in cardiac surgery patients. Primary outcomes included AKI incidence; secondary outcomes encompassed intraoperative parameters, postoperative recovery, and complications. Results: Bibliometric analysis highlighted China and the USA as leading contributors, with emerging trends in pediatric and mechanistic research. Among 16 RCTs (n=2,882), DEX significantly reduced AKI incidence [RR 0.58; 95% CI 0.37 to 0.91; I² =74%, p=0.02], particularly at 0.6-0.1mcg/kg/h doses [RR 0.43; 95% CI 0.26 to 0.71; I² =0%, p=0.001]. Subgroup analysis revealed 0.4mcg/kg/h doses failed to yield a statistically significant benefit [RR 0.65; 95% CI 0.36 to 1.17; I² =84%; p=0.15]. DEX also shortened ICU stay [MD -1.23; 95% CI -2.17 to -0.30; I² =93%; p=0.01], mechanical ventilation duration [MD -1.24; 95% CI -2.15 to -0.33; I² =97%; p=0.008], and hospital stays [MD -0.33; 95% CI -0.54 to -0.13; I² =86%; p=0.01]. However, it did not affect mortality or intraoperative times. Conclusion: DEX demonstrates significant renal protection and improves postoperative recovery in cardiac surgery patients, though optimal dosing requires further investigation. These findings support its integration into perioperative protocols but underscore the need for standardized dosing regimens. Systematic review registration: Identifier, INPLASY2025120019. Copyright © 2026 Wen and Jiang.

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