**Supplementary Table 2. Study population and main findings of each study included in analysis**

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| Author, year |  |
| Bucsics, 2015 | Retrospective Cohort study. Consecutive patients with cirrhosis and ascites undergoing paracentesis at a tertiary care center were analyzed. Increased 30 day mortality observed in patients who developed AKI. |
| Angeli, 2014 | Prospective study was performed in 510 patients, with acute decompensation of cirrhosis previously included in the European Association for the Study of the Liver–Chronic Liver Failure consortium CANONIC study. AKI was evaluated at 48 h according to Acute Kidney Injury Network criteria. The study compared AKI classification with acute-on-chronic liver failure for prediction of mortality. CLIF-SOFA score was shown to improve prediction of mortality by acute-on-chronic liver failure classification. |
| Choi, 2014 | Consecutive cirrhotic patients admitted to Konkuk University were reviewed retrospectively. The study described the prevalence and etiology of AKI in this population.  |
| Scott, 2013 | Patients with AKI and cirrhosis were enrolled prospectively and compared with a retrospective group with evidence of cirrhosis and no AKI. Mortality increased in the study population with each progressive AKI stage. AKI was associated with increased length of stay.  |
| Wong, 2013 | Patients with cirrhosis admitted with or developing an infection in hospital were followed prospectively, and data on 30-day mortality, hospital length-of-stay, and organ failure was compared between patients with and without AKI. The 30-day mortality was 10-fold higher among infected hospitalized cirrhotic patients with irreversible AKI than those without AKI. The North American Consortium for the Study of End-Stage Liver Disease's definition of AKI accurately predicted 30-day mortality, length of hospital stay, and organ failure. |
| Fagundes, 2013 | Prospective study of 375 consecutive cirrhotic patients hospitalized for complications of cirrhosis. The study evaluated AKIN criteria and their relationship with the cause of kidney impairment and survival. Etiology of AKI was independently linked to survival. Combining maximum creatinine value with AKIN criteria provided better risk stratification. |
| Piano, 2013 | Consecutive hospitalized patients with cirrhosis and ascites were included in the study and evaluated for the development of AKI. AKIN and conventional criteria were compared for risk stratification. Conventional criteria was more accurate in prediction of in hospital mortality.  |
| Tsien, 2013 | Patients with cirrhosis with ascites and baseline serum creatinine less than 110 mmol/L, and no evidence of structural renal disease, prospectively underwent 4- to 6-week assessments for the development of AKI and other complications. More than half of the patients developed AKI and AKI was linked to decreased survival. |
| Hung, 2012 | Taiwan’s National Health Insurance Database was used to extract data for patients with cirrhosis hospitalized with spontaneous bacterial peritonitis for 1 year. Patients were matched with individuals from a national mortality database. One-month and one-year mortalities were calculated for each group and compared to calculate hazard ratios. Renal impairment was associated with increased mortality. |
| Warner, 2011 | Retrospective cohort study of cirrhotics with creatinine levels >1.5 mg/dL on presentation to the hospital. The overall mortality was 31%, with the highest mortality occurring in those with type 1 Hepatorenal syndrome (79%). Upper gastrointestinal bleed, bacteremia, and Hepatorenal syndrome predicted mortality.  |
| Prakash, 2011 | Consecutive hospitalized patients with cirrhosis were studied for renal dysfunction and its association with mortality. Patients of class C cirrhosis with renal disease had significantly higher mortality than those without renal disease. |
| Chen, 2011 | Retrospective, cross-sectional, single-center study of cirrhotic patients presented to a hospital. Outcomes were compared for survivors and non-survivors and with AKI or no AKI. The blood urea nitrogen/creatinine ratio was a better index than the model for end-stage liver disease score in predicting in-hospital mortality in cirrhotic patients with normal renal function. |
| Cholongitas, 2009 | Prospective study of patients with cirrhosis admitted to an intensive care unit in England. Patients with AKI were compared to those without AKI. Mortality was higher in patients with AKI. Mortality was not significantly different between those with acute renal failure on admission, and those who developed ARF during intensive care unit stay. |
| Cholongitas, 2009 b | Consecutive patients with cirrhosis admitted to an intensive care unit in England were classified according to the RIFLE score. Multivariable logistic regression analysis was used to evaluate the factors associated with mortality. RIFLE score was significantly associated with mortality in this cohort. |
| du Cheyron, 2005 |  A retrospective cohort analysis and two case-control analyses were conducted in a medical intensive care unit. Patients who developed acute renal failure were matched (1:2 ratio) with cirrhotic patients without acute renal failure during their intensive care unit stay. Both mild and severe acute renal failure were associated with mortality (hazard ratio: 2.6 and 4.2). Severe acute renal failure was associated with increase matched risk of death (relative risk: 2.6), and higher risk-adjusted mortality rate (2.1 vs. 0.9). |
| Hampel, 2001 | In a retrospective study at a Veterans Affairs Medical Center, patients with a diagnosis of cirrhosis and normal renal function at the time of hospitalization were followed to identify patients who developed renal dysfunction within 15 days of hospitalization, and were compared with those without AKI. Aminoglycoside antibiotic was identified as an independent risk factor of AKI.  |
| Jindal, 2015 | Consecutive acute-on-chronic liver failure patients with AKI at admission were compared with those without AKI for mortality, presence of hepatic encephalopathy, spontaneous bacterial peritonitis, and acute variceal bleed. Presence of AKI, and not its severity, was found to be a predictor of mortality.  |
| de Araujo, 2014 | Retrospective study conducted in Brazil. Cirrhotic patients with spontaneous bacterial peritonitis were enrolled and renal impairment defined by AKIN criteria was used to study the association between AKI and mortality. Patients with AKI per AKIN criteria had a hazard ratio of 3.41 (1.58-7.3) for mortality compared to those with no AKI. |
| Bıyık, 2016 | Retrospective study of cirrhotic patients admitted to the intensive care unit and gastroenterology service of a tertiary referral hospital in Turkey. AKI was classified according to the KDIGO criteria. Mortality was found to be associated with presence as well as stage of AKI. AKI was an independent factor of mortality (odds ratio: 9.1; 95% confidence interval: 2.89–29.1; *p*<0.001). |
| Jaques, 2018 | Prospective study was conducted in hospitalized patients with decompensated cirrhosis in Switzerland. The study analyzed the value of different biomarkers to determine the presence of AKI, severity of AKI, and composite clinical outcome at 30 days (death, dialysis and intensive care admission). Serum creatinine, CystC, and plasma neutrophil gelatinase-associated lipocalin predicted the development of the composite clinical outcome with the same performance as the model for end-stage liver disease score. |
| Nuthalapati, 2017 | Retrospective study that examined the impact of increments in creatinine on mortality in 339 consecutive patients (636 admissions) who were admitted for complications of cirrhosis. Biochemical parameters were checked at various intervals, and mortality data were recorded. Creatinine increased in 29% patients and they had lower 30-day (78% vs. 91%) and 90-day (73% vs. 82%) survival when compared with those without this creatinine increase. Any increment in serum creatinine within 2 days of presentation was associated with a step-wise increase in mortality, but only if peak creatinine reached above 1.2 mg/dL.  |
| Marciano, 2017 | This retrospective study of all admissions of acutely decompensated patients with cirrhosis in one hospital in Argentina compared the prognostic accuracy for 28- and 90-day transplant-free mortality of a modified CLIF-SOFA score with that of the classic CLIF-SOFA score and KDIGO score for AKI. AKI diagnosis was met in 34% patients. CLIF-SOFA scores were highly effective in predicting 28-day transplant-free mortality (area under the receiver operating characteristic curve 0.93 and 0.92, *p*=0.34) as well as 90-day transplant-free mortality (area under the receiver operating characteristic curve 0.79 and 0.78, *p*=0.78). Presence of AKI had significantly lower accuracy in predicting mortality (28- and 90-day transplant-free mortality area under the receiver operating characteristic curve 0.67 [*p*=0.002] and 0.63 [*p*=0.02])  |
| Zhou, 2017 | Retrospective analysis of 333 hospitalized patients with cirrhosis in China. AKI was defined using two methods: 1) KDIGO AKI criteria; 2) ‘Delta-sCr’ system, defined by the change between the baseline and the peak serum creatinine values during the hospitalization. Both criteria were independent risk factors of death, but the Delta-sCr system offered modest improvement over KDIGO criteria.  |
| Pan, 2016 | Prospectively study comprising 242 cirrhotic patients from a 10-bed specialized hepatogastroenterology intensive care unit. Clinical variables on day of admission were prospectively recorded. Results showed that the KDIGO classification performed better than RIFLE and AKIN criteria in predicting in-hospital mortality. Survival rates at 6 months after discharge differed significantly between patients with AKI on intensive care unit admission day and those with no AKI on presentation to the intensive care unit. |
| Tandon, 2016 | Retrospective population-based cohort study in Canada that studied the prognostic significance of AKI in a population of cirrhotic patients presenting to hospitals in Alberta. The 30-day mortality was higher for participants with AKI (43.9% vs. 8.5%; *p*<0.001) and increased with severity of AKI.  |
| Maiwall, 2015 | Prospective study of consecutive patients presenting to a hospital in India with acute-on-chronic liver failure (*n*=382) and Apparent diffusion coefficient (*n*=451). Serial renal and liver functions were recorded and correlated with the disease course and outcome. |
| Wong, 2017 | Prospective study of non-elective admissions with cirrhosis with different baseline serum creatinine levels (≤0.5, 0.51-1.0, 1.01-1.5, >1.5 mg/dL) were evaluated for AKI, and compared outcomes of AKI and 30-day survival. Patients with higher baseline serum creatinine were more likely to develop AKI and the Delta-sCr system was the strongest factor impacting AKI outcomes and survival |
| Huelin, 2017 | Prospective study enrolled consecutive patients with acute decompensation in two tertiary hospitals (Italy and Spain). AKI stages were determined based on levels of creatinine at diagnosis. Primary outcome was 90-day survival; secondary outcomes were progression and resolution of AKI and association with acute-on-chronic liver failure.Stage 1B disease, but not 1A, independently predicted progression and mortality. Acute-on-chronic liver failure developed in a significantly greater proportion of patients with stage 1B disease compared to 1A. |
| Shi, 2016 | Retrospective cohort study in China of patients with hepatitis B virus-related acute-on-chronic liver failure were enrolled and divided into an AKI group (*n*=308) and a non-AKI group (*n*=859), and followed up to investigate clinical characteristics, overall survival, and risk factors. Significant differences were observed in 1-month, 3-month, and 1-year survival among subgroups with different AKI stages. |
| Hseih, 2017 | Retrospective cohort study in Taipei utilizing a prospective database of cirrhotic patients. Hospitalized patients with acute gastric variceal bleeds were evaluated for the development of AKI. The 6-week mortality was higher in patients with AKI than in patients without AKI (37% vs. 3%, *p*<0.001), and AKI stages independently predicted 3-month survival. |

Abbreviations: AKI, acute kidney injury; AKIN, AKI Network; KDIGO, Kidney Disease Improving Global Outcomes; RIFLE, Risk Injury and Failure.