Outcomes in Patients with Persistent Dialysis-Dependent Acute Kidney Injury

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Outcomes in Patients with Persistent Dialysis-Dependent Acute Kidney Injury

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Abstract

INTRODUCTION:

According to RIFLE criteria, ESRD is defined as a complete loss of renal function or need for renal replacement therapy for more than 3 months. Patients who develop persistent dialysis-dependent acute kidney injury (AKI-HD) are at a significant risk of developing irreversible renal failure that requires long-term dialysis. While previous studies showed that less than 10% of AKI-HD patients progressed to end-stage renal disease (ESRD)[1,2,3] certain populations of people are at higher risk. The need for chronic dialysis was predicted by pre-existing kidney disease, hypertension and higher comorbidity index scores in a recent study by Harel, et al.[3]

OBJECTIVE:

We sought to describe clinical characteristics and outcomes in patients with persistent dialysis-dependent acute kidney injury at the time of hospital discharge which may aid in more timely identification of patients who progress to ESRD. The results of this study may help generate hypotheses regarding prediction of ESRD from clinical variables in this population.

METHODS:

This was a retrospective, descriptive study of patients enrolled in the Lehigh Valley Health Network Subacute Dialysis Program between the program's inception in October 2012 and July 2014.

RESULTS:

Of 55 patients enrolled in the program, 26 (47.3%) recovered renal function and 29 (52.7%) developed ESRD. Clinical characteristics of these patients are shown in the Figures 1-5. The median duration of dialysis in the renal recovery group was 3.5 weeks. Although 75% of patients who recovered renal function did so by 5.1 weeks, 2 out of 26 (7.7%) recovered more than 3 months after dialysis initiation.

CONCLUSIONS:

This hypothesis-generating study indicates that patients who did not recover renal function were older and had higher serum creatinine at baseline, at hospital admission and at dialysis initiation than those who recovered renal function. While there was a decrease in serum creatinine from week 3 to week 4 in patients with renal recovery, there was an increase for those who did not recover. More patients who did not recover renal function had hypertension, heart failure and CAD. Additionally, more patients who had ATN recovered renal function, while all patients with multiple myeloma did not. Future hypothesis-testing studies would be beneficial in further exploring whether or not these clinical characteristics may be used to predict which patients are likely to recover renal function and which are not.

Figure 1.
Age Distribution by Group

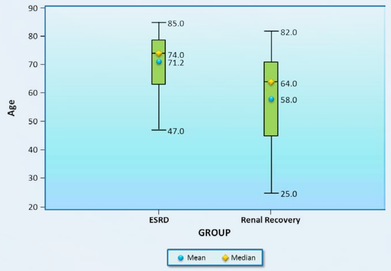


Figure 2.
Baseline Creatinine Distribution by Group

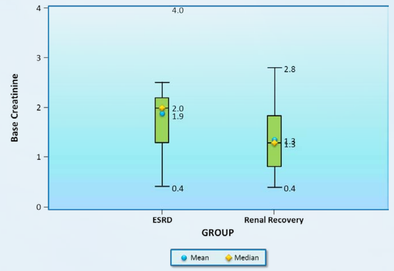


Figure 3.
Distribution of Creatinine at Time of Dialysis Initiation by Group

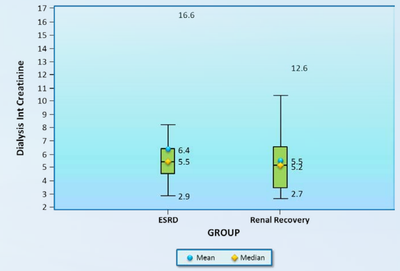


Figure 4.
Distribution of Creatinine 3 Weeks After Dialysis Initiation by Group

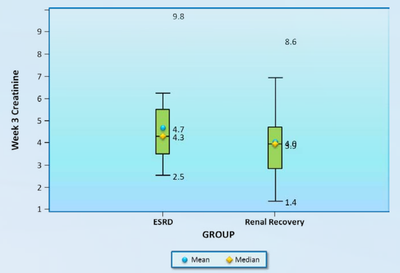


Figure 5.
Average Change in Serum Creatinine Over Time by Group

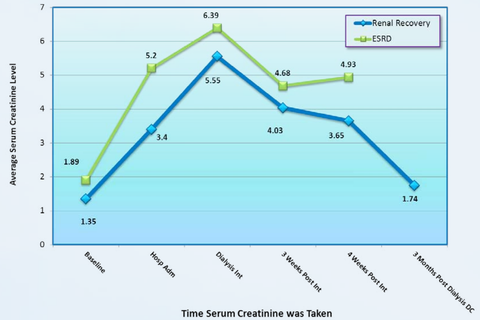


Figure 6.
Percentage of Patients With Each Comorbidity by Group

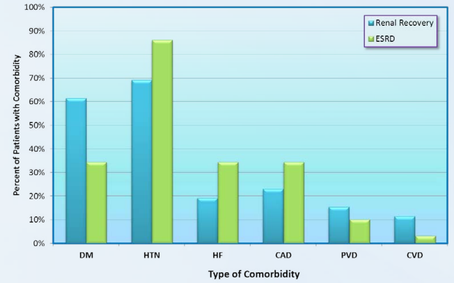
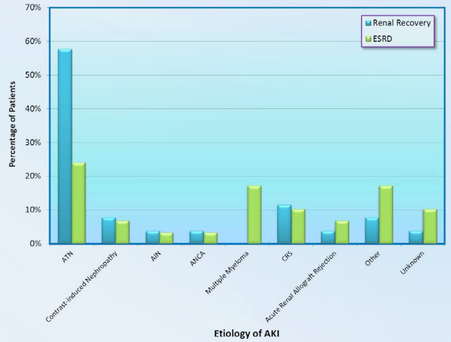


Figure 7.
Etiology of Acute Kidney Infection by Group



References:

1. Schiffl H: Renal recovery from acute tubular necrosis requiring renal replacement therapy: A prospective study in critically ill patients. *Nephrol Dial Transplant* 21: 1248–1252, 2006.
2. Ali T: Incidence & outcome in acute kidney injury; a comprehensive population based study. *JASN* 2007.
3. Harel Z, Bell C, et al. Predictors of progression to chronic dialysis in survivors of severe acute kidney injury: a competing risk study. *BMC Nephrology* 2014, 15:114.
4. Bellomo R, Ronco C, Kellum JA, et al. Acute renal failure - definition, outcome measures, animal models, fluid therapy and information technology needs: the Second International Consensus Conference of the Acute Dialysis Quality Initiative (ADQI) Group.

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