

Risk of progression to end stage renal disease among geriatric patients with acute kidney injury

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Background

The incidence of acute kidney injury (AKI) in the elderly (≥ 65 years old) has been steadily growing worldwide.

Functional renal aging along with multiple comorbidities increase susceptibility of renal cells to exogenous and endogenous stimuli that can compromise renal perfusion, result in severe damage and reduced ability to recover.

Goals: We aimed to determine the risk of becoming dialysis dependent upon discharge in geriatric hospitalized patients with AKI.

Population and Methods

We retrospectively enrolled 257 patients aged ≥ 65 years old who were admitted with AKI (measured as an increase of at least ≥ 0.3 mg/dL or 1.5-2x their baseline creatinine).

Baseline variables, Charlson score index (CSI) and laboratory data were collected at admission and upon discharge.

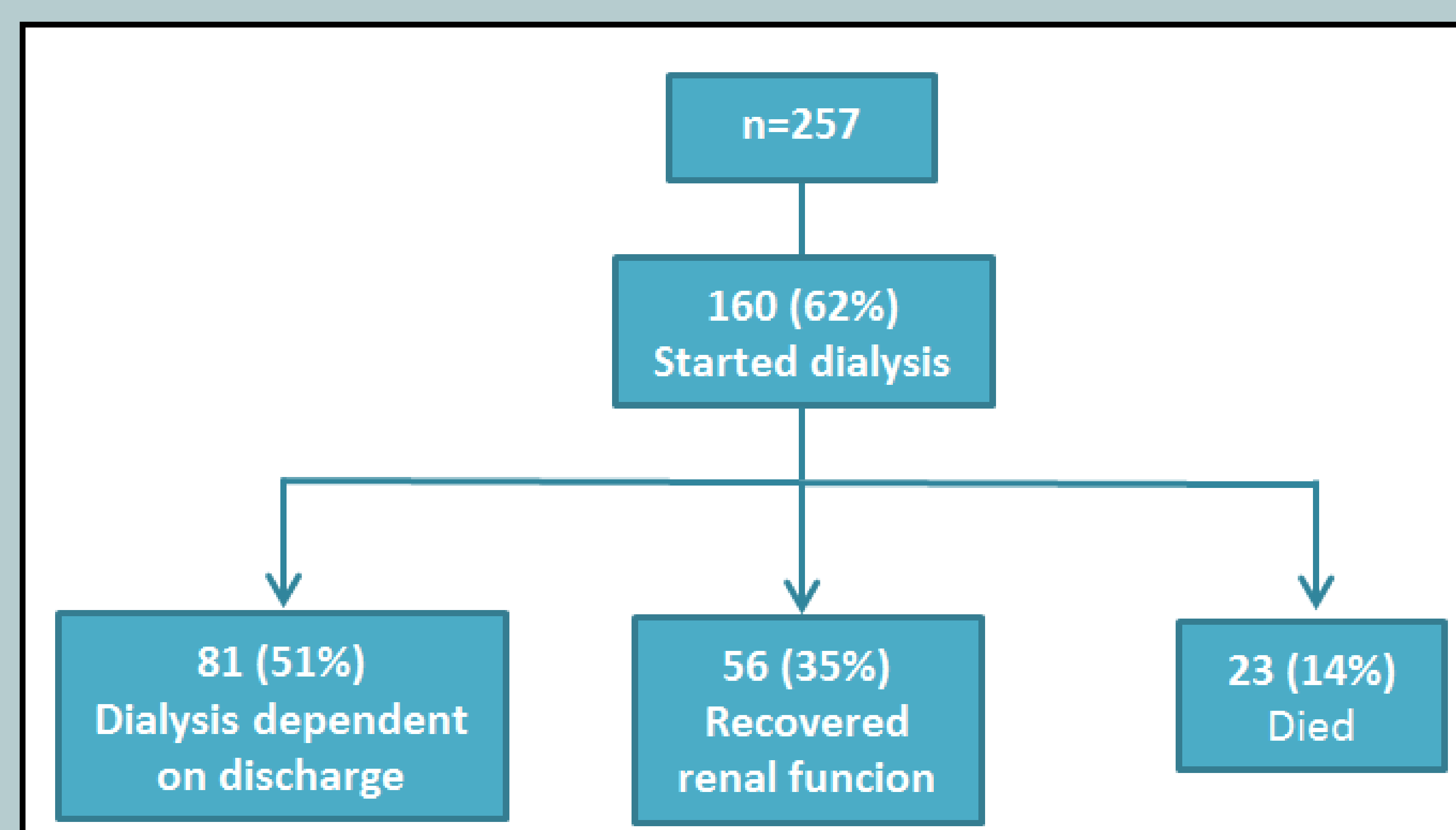
CKD stage 5 patients were excluded.

Results

Demographic data

257 patients

Female gender (n; %)	135 ; 53
Age (years; mean ± SD; min-max)	80 ± 7 years (65-98)
Living in nursing homes (n; %)	96; 37
Charlson score index ≥8 (n; %)	135 ; 53
Diabetes <i>mellitus</i> (n; %)	109 ; 42
Previous CKD (n; %)	162; 63
Hypertension (n; %)	65; 23
Hospitalization days (median; IQR)	12 [IQR: 1-14]



Independent predictors of dialysis dependency upon discharge

Logistical Regression Model (Adjusted for age and gender)

Living in nursing homes	OR 2.638	IC 95%: 1.375 – 5.075	p = 0.004
Serum creatinine at admission	OR 1,547	IC 95%: 1.178 – 2.033	p = 0.002
Hospitalization days	OR 1.053	IC 95%: 1.024-1.081	p ≤ 0.001
Time to dialysis (days)	OR 1.000	IC 95%: 1.000-1.900	p ≤ 0.001

Variables	RRT- dependent	Recovered renal function	P
Male gender (%)	57	43	0.042
Living in nursing homes (%)	51	31	0.003
CSI ≥8 (%)	63	23	0.023
Multiple myeloma (%)	12	1	≤0.001
Previous CKD (%)	74	58	0.013
Admission creatinine (mean ± SD, mg/dL)	2.3 ± 1.2	1.9 ± 1.1	0.007
Admission albumin (mean ± SD, g/dL)	2.7 ± 0.6	3 ± 1.7	0.029
Sepsis	74	61	0.046
Infectious process	26	39	0.038
Hospitalization days (mean ± SD, days)	19.3 ± 14	13 ± 10	≤0.001
Dialysis days (mean ± SD, days)	7.4 ± 7	1.6 ± 3	≤0.001

Conclusion

Elderly individuals with AKI, particularly those living in nursing homes, with higher baseline serum creatinine (previous CKD), longer inpatient stays and delayed start of hemodialysis, were at significantly increased risk for ESRD, suggesting that AKI episodes may accelerate the progression of renal disease. Therefore, delaying the initiation of dialysis may not be beneficial for recovery of renal function.

References

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