Renal Failure as a Prognostic Marker for Mortality in Heart Failure Patients – Are We Barking Up at the Wrong Tree?

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Background: Deteriorating renal function is an important risk factor for morbidity and mortality in chronic heart failure (CHF). There are several formulas for estimating renal function and glomerular filtration rate.
In this study we compared the predictive value of mortality of four renal function tests; serum urea, serum creatinine, Cockcroft-Gault (CCT) and estimated Modification of Diet in Renal Disease (eMDRD).

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Methods and Results: Our analysis included **366** CHF patients (267 Men, 99 women; age 66±13.5 years).Mean BMI was 27±5.4 kg/m², LVF was 30±0.14 and mean NYHA class was 2.8. Baseline creatinine, urea, CCT and eMDRD were calculated.
During mean follow-up time of 4 years, 85 patients died (23.2%). We compared the different renal function tests models between these two groups of patients, the patients who survived and the patients who died (Table-1).All four parameters were found to be significantly associated with mortality. However, in a stepwise logistic regression analysis adjusted for age, sex, LVF and ischemic etiology, eMDRD was the single and the most important parameter in predicting mortality.

Table-1

Renal function test model	Alive	Dead	P value
Creatinine	1.28±0.3	1.53±0.6	0.003
Urea	64	79.9	0.003
GFRcg	69	54.4	0.004
eMDRD	65.5	50.9	<0.0001

Conclusions: Our data suggests that among the different renal function tests models, the eMDRD is the strongest parameter in prediction of mortality in heart failure_patients. Accordingly, we suggest that eMDRD should be assessed routinely in heart failure patients.