

Renal Dysfunction in Patients with Heart Failure

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Summary:

Background: The coexistence of renal and heart failure carries an extremely bad prognosis. The exact cause of deterioration of kidney function and the mechanism underlying this interaction are complex, multifactorial in nature, and still not completely understood. Both the heart and the kidney act in tandem to regulate blood pressure, vascular tone, diuresis, natriuresis, etc.

Patients and methods: Sixty patients mean age 65.5 year were complaining heart failure duo to different causes assessed for renal function (blood urea & creatinine) and cardiac function by echocardiography in day 0 and 10 day after treatment of heart failure.

Results: The mean value (\pm S.D) of blood urea and serum creatinine on day 0 were 64.17mg/dL (\pm 30.72) and 1.75mg/dL(\pm 0.68) respectively. There is significant correlation between the severity of heart failure and the degree of renal impairment (P.value <0.05). after 10 days of treatment there was improvement in symptoms of heart failure but no significant correlation was found between the improvement of cardiac function and renal failure after 10 days treatment(51% patients has high blood urea>43mg/dL after 10 days&58% patients has high creatinine after 10 days although improvements in ejection fraction)(P.value >0.05).

Conclusion: Renal dysfunction is common in heart failure and has strong prognostic value. the classical treatment of heart failure dose not improve renal dysfunction duo to intrinsic renal disease, renal vascular disease , nephron loss (age, renal disease), inadequate renal perfusion, hypovolemia, inadequate cardiac output (vasoconstriction/pump failure), hypotension , abnormally high central venous pressure and by drug induced e.g.(ACEI, ARB). So patients were advice to take adenosine, A₁receptor blocker, vasopressin antagonists, other intervention include earlier use of dialysis and ultrafiltration and left ventricular assist devices.

Keywords: Renal impairment, heart failure, ejection fraction, urea, creatinine.

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