CONGRESUL CONSACRAT ANIVERSĂRII A 75-A DE LA FONDAREA USMF „NICOLAE TESTEMIȚANU”
20 23 octombrie 2020

PROGNOSTIC VALUE OF RENAL FUNCTION ESTIMATING FORMULAS IN TYPE 2 CARDIORENAL SYNDROME

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Introduction

Renal function worsening is often observed in chronic heart failure (CHF). Glomerular filtration rate (GFR) is widely accepted as a marker for renal function evaluation, and usually, is estimated with the use of creatinine-based formulas.

Keywords

Glomerular filtration rate, heart failure, prognosis.

Purpose

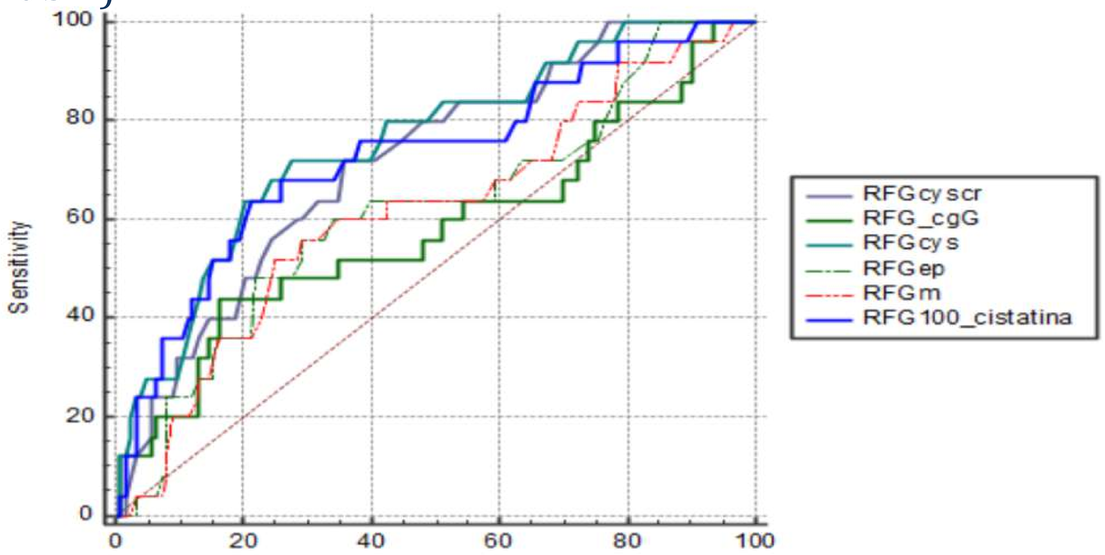
To compare the prognostic value of estimating glomerular filtration rate formulas in type 2 cardiorenal syndrome.

Material and methods

A total of 170 consecutive hospitalized CHF patients with intermediate or reduced ejection fraction and renal changes (51.8 % men, age 68.33 ± 1.06 years) were studied. Renal function and GFR) was assessed using the most popular formulas for GFR estimation: the Cockcroft-Gault (CG), the four-variable Simplified Modification of Diet in Renal Disease (sMDRD), CKD-EpidemiologyDiet in Renal Disease (sMDRD), CKD-Epidemiology Collaboration (CKD-EPI) based on serum cystatin-C, creatinine and their combination, and the simple cystatin-C formula.

Results

During 6 months follow-up, 29 (16.2%) deaths were recorded. Renal biomarkers and estimated GFR showed different prognostic value. AUC was 0.58 (95% CI:0.47-0.69, P = 0.05) for creatinine, 0.67 (95% CI: 0.56-0.79, P< 0.05) for cystatin-C (Tab.1)



Tab.1 ROC curve for different GFR estimating formulas

Conclusions

GFR is an independent predictor for type 2 cardiorenal syndrome short term mortality. Cystatin-C based formulas for offer improved prognostication in this population, while CG formula, serum cystatin-C and serum creatinine fail to predict short term mortality.