

Prevalence of decreased GFR in Croatian population aged ≥ 80 years-“oldest old”- using Cockcroft-Gault, MDRD and CKD-EPI formula

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INTRODUCTION

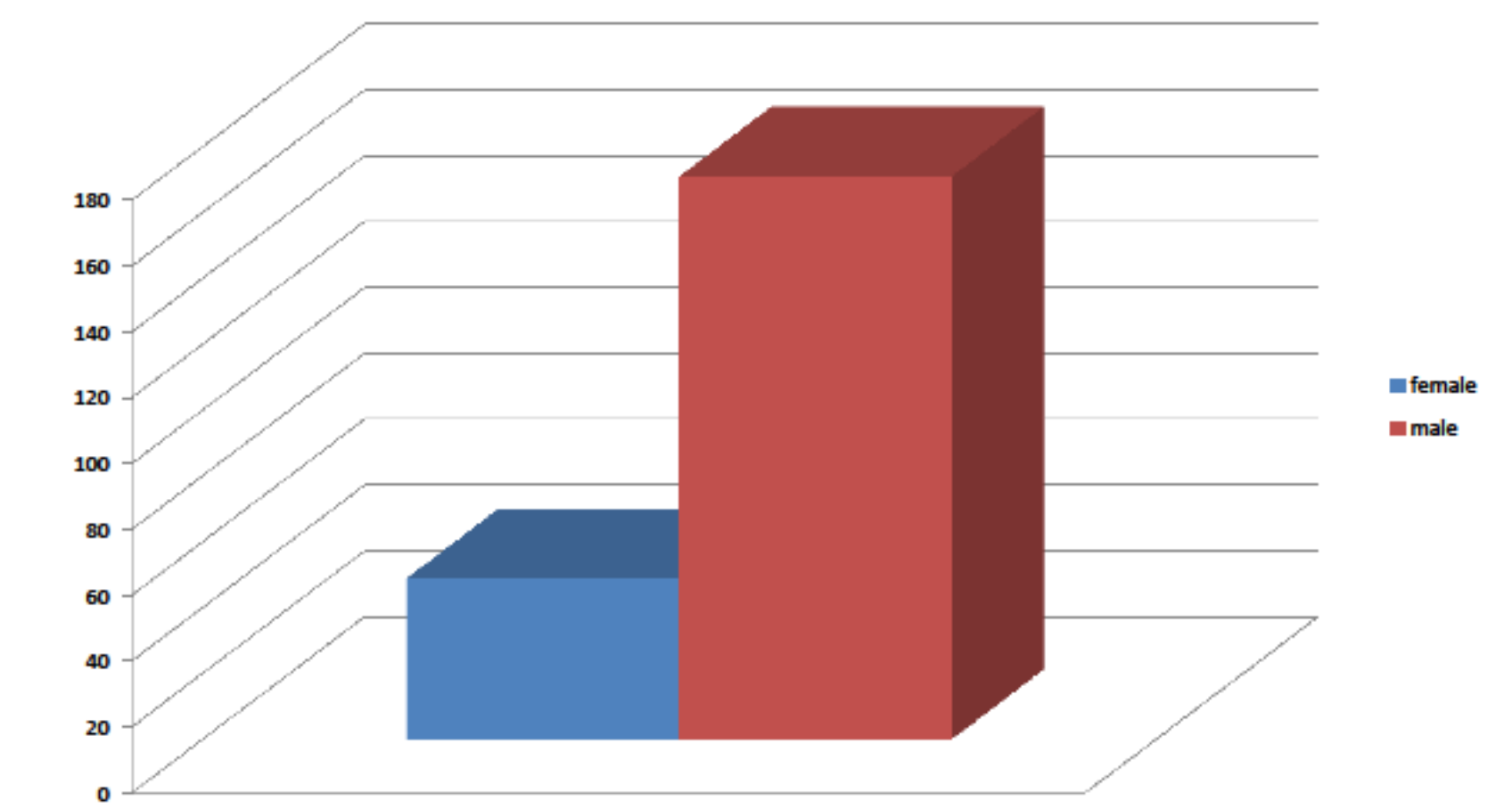
With 17.7% of inhabitants aged ≥ 65 years Croatian population is old. There is significant increase in number of people aged ≥ 80 years, with proportion of 22.2% in total number of patients aged ≥ 65 years. Functional capacity of the kidney decreases with age, but it is sufficient for homeostasis maintenance in elderly. There is still no unique definition which GFR level in „oldest old“ should be considered kidney disease, and when it can be attributed to physiological changes of ageing process. To date there is no data for prevalence of decreased GFR in Croatian population aged ≥ 80 years.

AIM

The aim of this study was to estimate prevalence of decreased GFR in „oldest old“ population in Croatia.

PATIENTS AND METHODS

220 of patients aged ≥ 80 years were included in this epidemiological study. Blood samples for serum creatinine were taken. GFR was calculated using Cockcroft-Gault, MDRD and CKD-EPI formula.



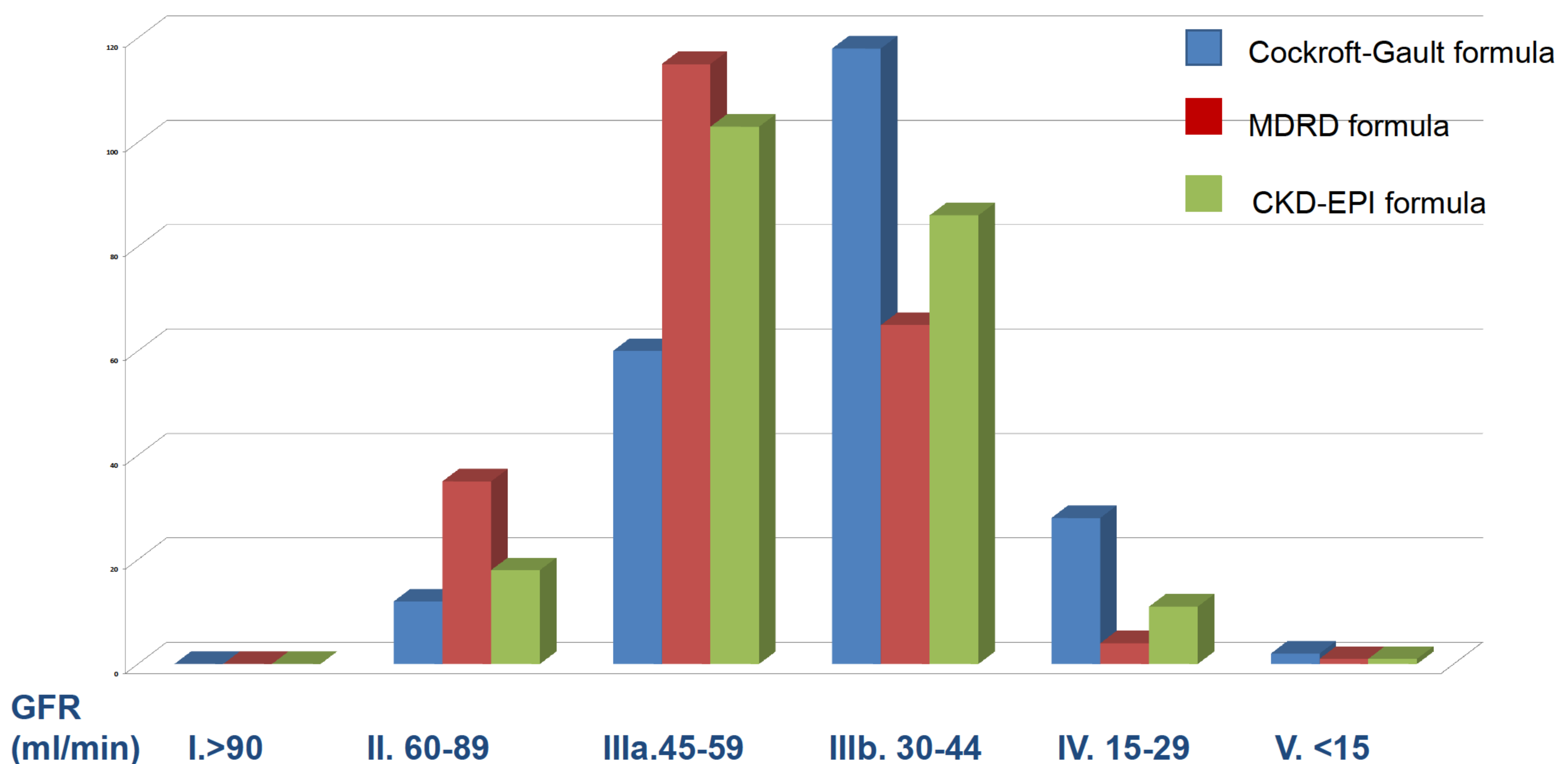
Characteristics of the patients

Total No of patients	Male/Female	Average age	No of patients aged ≥ 90 y
220	49/171	84.7	24 (10.9%)

	Cockcroft-Gault formula	MDRD formula	CKD-EPI formula
% of patients with GFR < 60 ml/min/1.73 m ²	94.5%	84.1%	91.6%

RESULTS

There were no patients with GFR > 90 mL/min/1.73 m² using neither one of the formulas, and there was less than 1% of patients with GFR < 15 mL/min/1.73 m². Decreased GFR (< 60 ml/min/1.73 m²) was found in a great majority of patients: 94.5% (208) using Cockcroft-Gault formula, 84.1% (202) using MDRD formula and 91.8% using CKD-EPI formula. Most of them had GFR 30-59 ml/min/1.73 m², with slight differences between formulas (80.9% using Cockcroft-Gault formula, 81.8% using MDRD formula and 85.9% using CKD-EPI formula). GFR < 45 mL/min/1.73 m² was found in 67.2% of patients (148) using Cockcroft-Gault formula, 31.8% of patients (70) using MDRD formula and 45% of patients (99) using CKD-EPI formula.



CONCLUSION

Prevalence of reduced GFR in patients aged ≥ 80 years is great using all three formulas. Majority of patients have GFR 30-59 mL/min/1.73 m² which would be by definition stage 3A and 3B of CKD. Cockcroft-Gault formula estimates significantly lowest GFR when compared to MDRD and CKD-EPI formula in this group of patients. Normal serum creatinine level does not necessarily mean normal GFR in this population. Reduced GFR in „oldest old“ should not be by default considered as kidney disease, but significantly decreased functional capacity of the kidney should not be forgotten in everyday clinical practice, especially when dosing nephrotoxic drugs.