

Editorial

Screening for chronic kidney disease

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Early detection and prevention are the cornerstones of public health efforts to reduce the burden of common chronic diseases. Priorities for preventive healthcare programs traditionally involve a number of complex criteria [1]. From a scientific perspective, screening at the level of primary health care is recommended if the disease severity is high, the applied screening test is reliable and easily accessible, and therapeutic intervention is possible, efficient and economical. Additionally, the local epidemiology and characteristics of the affected population can influence screening priorities.

Screening can have many forms, from pragmatic lower cost to an invasive and costly comprehensive combination of serum and urinary biomarkers. Furthermore, the screening can be broad, population-oriented or focused, applying only to specific population groups. A national representative sample of 15.625 adults over 20 years of age from the NHANES III study was analyzed by determining the renal function (glomerular filtration rate - GFR), and renal impairment

marker (albuminuria). On the basis of these indicators, the prevalence of chronic kidney diseases (CKD) was 11% in the USA (19.2 million): 3.3% were in stage 1 (persistent albuminuria with normal GFR), 3.0% in stage 2 (persistent albuminuria with GFR from 60 to 89 mL/min/1.73 m²), 4.3% in stage 3 (GFR 30-59 mL/min/1.73 m²), 0.2% in stage 4 (GFR, 15-29 mL/min/1.73 m²), and 0.2% in stage 5 [1]. Given the frequency of CKD, in October 2013, the American Society of Nephrology (ASN) issued a press release strongly recommending "a regular assessment of kidney disease, regardless of individual risk factors." This release stated that early detection and intervention could prevent and slow down the progression of kidney diseases, saving many lives. On the same day, the American College of Physicians (ACP) published guidelines on clinical practice [2]. These ACP guidelines were in line with the 2012 recommendations set by the US Preventive Services Task Force (USPSTF) and Kidney Disease Improving Global Outcomes (KDIGO) guidelines [3, 4]. Consequently, an early renal screening program is advised in patients with established risk factors for CKD with the use of tests for eGFR and urinary albumin/creatinine ratio. The combination of these two parameters is now an accepted method for better reflecting upon not only the risk of CKD progression but also the risk of mortality.

Balkan countries are specific in many ways, including risk factors for CKD (Balkan endemic nephropathy). Two papers published in this issue are a significant contribution to better understanding of the incidence of CKD in the region, as well as factors for its occurrence. Paper by Krsmano-

vić [5] showed high prevalence of CKD in three populations at high risk in the region of Priboj (patients with hypertension and diabetes and elderly population) using standard screening methods (eGFR and amount of albuminuria). 22.6% of patients with hypertension, 46.7% of them with diabetes and 18.8% over 60 years of age had eGFR under 60 ml/min/1.73 m². At the same time, albuminuria over 20 mg/L was registered in 61% of patients with hypertension, 83.4% of patients with diabetes and 62.5% of elderly patients. In total, over 90% of patients with hypertension and diabetes lasting over 5 years and 75% of elderly patients had an increased albuminuria and/or decreased eGFR. In this population, the appropriate measures can prevent progression of CKD and reduce total and cardiovascular mortality.

In this region, a wide-scale screening for CKD that is initiated by government does not exist, and only individual efforts are likely to improve the awareness of early CKD detection. The studies such as Ležaić et al. [6] and Djukanović et al. [7] detected eGFR less than 60 ml/min/1.73m² in 19.5% and elevated albuminuria in 39.1% of population at high risk. Nowadays, the same authors present follow-up data with the aim of demonstrating consistency in screening and monitoring of CKD patients after detailed initial education [8]. Unfortunately, awareness of primary care physicians has declined, thus indicating that individual screening programs are

rarely maintained without the wide support of responsible institutions.

Albuminuria is the classic marker of early renal dysfunction and the marker of risk for CKD progression. Nevertheless, the strategies decreasing albuminuria do not always prevent the progression of kidney disease. In this regard, there are reports revealing that some earlier biomarkers precede albuminuria [9-11] including beta-2 microglobulin, as well as periostin and discoidin domain receptor 1 [12]. In addition, multi-biomarker approach may provide more precise pieces of information than analysis of individual biomarkers. While these strategies are not available, screening of population at high risk by using eGFR and the level of albuminuria, presented in paper by Krsmanović [5], is the best way for early diagnosis and preventive strategy in elderly, diabetic and hypertensive patients. Paper by Djukanović and Ležaić [8] teaches us that awareness of continuous screening is not easy to build. It demands considerable amount of continuous work from the side of a nephrologist to achieve successful cooperation with primary care physicians. Only joint efforts can be successful in terms of reduction in the number of patients with ESRD, especially if there is support by state institutions.

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