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Prevention of Chronic Kidney Diseases

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ABSTRACT

Chronic kidney disease (CKD) is a serious public health problem in developed countries both because of the large number of patients and because of the high cost of treatment when prevention strategies are not implemented effectively. Primary prevention of CKD can be achieved by taking measures to ensure healthy kidney development. Public health strategies to prevent diabetes, hypertension and obesity as risk factors for CKD are important. These approaches are cost-effective and reduce the overall burden of noncommunicable diseases. Strategies for the prevention of non-traditional CKD risk factors, including exposure to nephrotoxins, kidney stones, infections, environmental exposure and acute renal failure (AKI) should be adapted to local needs and epidemiology. Early diagnosis and treatment of CKD risk factors, such as diabetes, obesity and hypertension, are the key to primary prevention of CKD. CKD tends to occur more often and progress faster among the indigenous population, minorities and socio-economically disadvantaged segments of the population. Special attention is required to meet the needs of these population groups in the prevention of CKD. Effective secondary prevention of CKD depends on screening at-risk individuals for early detection and treatment of CKD using established and new strategies.

KEYWORDS: *chronic kidney disease, multisectoral approach, prevention, public health, risk factors*

INTRODUCTION

Significant progress has been made over the past decades, which has deepened our understanding of the burden and consequences of chronic kidney disease (CKD) worldwide. Since its official definition in 2002 and subsequent classification by the US National Kidney Foundation, the term "CKD" has been widely used in clinical practice and policy. In 2016, CKD was the ninth leading cause of death in high-income countries. Although mortality rates from coronary heart disease, stroke and lower respiratory tract infections are expected to decrease, by 2040 it is predicted that the number of years of life lost due to CKD will more than double worldwide. These facts are alarming if we take into account demographic trends of aging and lifestyle in developed countries, which are associated with an increased risk of CKD. Thus, large-scale investments in public health should be made in the healthcare system to support the prevention and treatment of CKD. It is estimated that the prevalence of CKD in high-income countries is about 8.6% for men and 9.6% for women over 20 years of age. In individuals with CKD, life expectancy is lower than in the general population, starting with an estimated glomerular filtration rate (eGFR) <60 ml/min per 1.73 m2, largely due to the associated increased risk of cardiovascular diseases. (CVD). CKD and related diseases are also an important factor in health care costs. Traditional and non-traditional CKD risk factors cover a wide range; they include developmental factors, physical, social, cultural, structural, environmental, and genetic factors. It is likely that a significant part of CKD can be prevented at various levels with the help of primary (early, previous), primary and secondary interventions. Effective interventions to prevent and slow the progression of CKD are well known, but there are many barriers that limit their widespread use, including cost, gender, age, race, and socioeconomic status, even in high-income settings. Diabetes, hypertension and obesity are important factors in the global burden of disease and are the most common traditional risk factors for CKD. Non-traditional CKD risk factors include developmental and pregnancy factors; kidney stones; exposure to nephrotoxic drugs, climate change and air pollution; infections; and AKI. The burden of CKD associated with these risk factors is probably significant, given that many of them coexist with more traditional risk factors. A comprehensive approach to CKD prevention begins with understanding the breadth of CKD risk factors, their frequency and distribution, identifying risk groups and then implementing mitigation strategies. Screening for kidney disease has been shown to be cost-effective in high-income countries. It is extremely important that such activities include vulnerable and disenfranchised groups of the population in these conditions. This article discusses the main strategies for combating traditional and non-traditional CKD risk factors and implementing CKD prevention in high-income countries where health system barriers must be overcome.

Primary prevention of CKD in developed countries

The decline in the main traditional risk factors for CKD and CKD has increased since 1990 in high-income countries, despite generally good access to primary health care in most developed countries, which is associated with continued exposure to risk factors, aging and population growth. In developed countries, the burden of CKD varies, as does the distribution of predisposing risk factors, which tend to be more common among more socially disadvantaged groups of the population. The distribution of risk factors may also differ between men and women and tends to increase with age; thus, local epidemiology is relevant when developing strategies to overcome the burden of local risk factors. In many regions, metabolic risk factors are the main risk factors for CKD, and indeed, diabetes remains the most common cause of CKD worldwide. The contribution of hypertension to the burden of CKD in developed countries is more variable, but remains significant. The contribution of environmental and other non-traditional causes of CKD, including air

pollution, smoking, kidney stones, infections, AKI and other factors, is increasingly recognized.

Conclusion: Prevention of CKD is possible, but requires a broad and holistic approach — from proper management and achievement of Sustainable Development Goals to ensuring healthy pregnancies for a good start in life — and access to appropriate screening for early detection and treatment of risk factors for CKD, as well as early CKD. In some countries, the management of traditional risk factors has improved, but even in developed countries, significant gaps remain in the provision of assistance, especially with regard to early detection of risk (for example, detection and monitoring of albuminuria) and the elimination of these risks, especially in disadvantaged health sectors. population size. Non-traditional risk factors remain undervalued in many settings. Addressing these gaps will require multifaceted engagement with stakeholders, including the development and implementation of strong public health measures to prevent CKD risk factors, especially diabetes, hypertension and obesity; patient rights protection and awareness-raising tools; and the promotion of self-management programs. It is also necessary to develop a strong primary health care capacity to implement targeted screening, early diagnosis and early treatment strategies.

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