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A report with consensus statements of the International Society of Nephrology 2004 Consensus Workshop on Prevention of Progression of Renal Disease, Hong Kong, June 29, 2004

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A report with consensus statements of the International Society of Nephrology 2004 Consensus Workshop on Prevention of Progression of Renal Disease, Hong Kong, June 29, 2004. This report summarizes the discussions of the International Society of Nephrology (ISN) 2004 Consensus Workshop on Prevention of Progression of Renal Disease, which was held in Hong Kong on June 29, 2004. Three key areas were discussed during the workshop: (*1*) screening for chronic kidney disease; (*2*) evaluation and estimating progression of chronic kidney disease; and (*3*) measures to prevent the progression of chronic kidney disease. Fifteen consensus statements were made in these three areas, as endorsed by the participants of the workshop. The ISN can make use of and take reference to these statements in formulating its policy for tackling chronic kidney disease, a disease with significant global impact.

The International Society of Nephrology (ISN) 2004 Conference on Prevention of Progression of Renal Disease was held in Hong Kong from June 29–July 1, 2004, with 1269 participants from 39 countries.

A Consensus Workshop on the Prevention of Progression of Renal Disease was held with a number of international and Asian nephrologists gathered together in Hong Kong (participant list shown in the Appendix). Presidents and Chairmen of many national, regional, and international societies of nephrology participated in the workshop.

Key words: ISN, consensus statements, prevention, renal disease.

Three key areas were discussed at the workshop: (*1*) screening for chronic kidney disease; (*2*) evaluating and estimating progression of chronic kidney disease; and (*3*) measures to prevent the progression of chronic kidney disease.

The workshop did not attempt to be comprehensive about every facet of the prevention of progression of renal disease. However, these three aspects are known to have a significant impact on the practice of nephrologists, as well as general physicians and primary care physicians, in the day-to-day care of their patients. Implementation of the recommendations in these areas will help to achieve the goal of reducing the burgeoning worldwide epidemic of end-stage kidney disease and improving the care of patients with renal disease.

SCREENING FOR CHRONIC KIDNEY DISEASE

Rationale for screening

In many parts of the world, end-stage renal disease (ESRD) has a profound effect on morbidity, mortality, and quality of life, and imposes a substantial burden on health care expenditure [1]. This has prompted the development of strategies aimed at preventing the development and progression of asymptomatic chronic kidney disease (CKD). Community strategies to reduce the incidence of ESRD integrate methods of screening and early intervention. Issues surrounding the screening of CKD include whom to screen, how to screen, and what to do when screening shows an abnormality.

In view of worldwide data showing variable rates of asymptomatic renal disease [2–7], it is worthwhile to perform screening programs for CKD for two reasons. First, early detection allows the implementation of measures to retard the progression of and even to prevent CKD. Second, the associated complications of CKD, especially cardiovascular morbidities, may be greatly reduced.

Whom to screen?

Population-based screening programs may not be cost-effective in every community [8] due to variations in genetic make-up, dietary, environmental, and economic circumstances, as well as access to screening methods. There have been some screening programs reported, such as in India, which include all members of a population, was demonstrated to be feasible and effective, and which can be cheap depending on the methods that are applied. The scale of screening programs, therefore, should be individualized for a particular region. Regional studies on the cost effectiveness of population-wide versus high-risk group screening should be carried out. **We, the ISN Consensus Workshop participants, recommend establishing a global surveillance center (ISN Kidney Disease Data Center or ISN KDDC) to coordinate worldwide standardized screening studies with standardized screening techniques in appropriate target groups to allow for the collection of clearly comparable data.** In addition, certain ethnic (e.g., African Americans in the United States [9], Australian aborigines) or occupational groups (e.g., taxi drivers in Singapore [10]) have been identified as having a higher prevalence of "silent" CKD than the general population. It is important for individual regions or countries to identify the "at-risk" groups in their population.

We recommend that patients diagnosed with diabetes and hypertension should have regular screening for development of kidney disease. Numerous clinical studies demonstrate the increased likelihood of renal disease in family members of patients with end-stage renal disease [11, 12]. **We also recommend that close relatives of patients with nephropathy caused by diabetes, hypertension, and glomerulonephritis should also be the primary targets for screening to detect clinically silent kidney disease.**

In addition, subjects over the age of 60 to 65 years are also at risk for unrecognized CKD [8]. **There is, however, no consensus on the exact age "cut-off" for initiating CKD screening.**

How to screen?

An important area in screening for CKD is the standardization of the screening tool. The first component is a complete survey that documents demographic data, together with personal and family medical histories. Anthropometric measurements should include body mass index and blood pressure. The simplest screening test for CKD is undoubtedly the detection of proteinuria and microscopic hematuria through standard dipstick testing. Depending on accessibility, the actual tools for screening CKD may include standard urine dipstick test for the detection of protein, red blood cell, specialized dipstick test with sensitivity toward microalbuminuria, quantitation of urine albumin-to-creatinine ratio, and an assay of serum creatinine concentration for glomerular filtration rate estimation, using accepted equations appropriate for the region and race.

Both the American Diabetes Association and the National Kidney Foundation support the use of standard urinary dipsticks for screening of proteinuria, with subsequent quantitation using either a spot or timed urine collection [13, 14]. The ability of these screening tools to detect CKD has not been systematically analyzed for their sensitivity and specificity for predicting eventual ESRD. However, in a study evaluating the relationship between a single random dipstick proteinuria and albumin-to-creatinine ratio, there was a 91% positive predictive value for $\geq 1+$ dipstick proteinuria detecting clinically significant quantitated proteinuria among both diabetic and nondiabetic populations [15]. Furthermore, a single episode of dipstick-positive proteinuria was found to be a significant predictor for all-cause and cardiovascular mortality [16]. The NKF-KDOQI guidelines recommend that individuals be screened for CKD using a spot urine sample for protein and an estimate of GFR based on serum creatinine concentration [17], with a view to risk stratification and the planning of subsequent management steps for the degree of CKD risk. However, it is unclear whether this combination of spot urine and serum creatinine concentration testing is acceptable for large-scale screening because study of the test-retest variability for serum creatinine concentrations revealed substantial variability in the same subject across laboratories and time [18].

To date, a uniform screening strategy has not been identified. **We recommend the development of standardized region- (or nation) specific guidelines. It is envisaged that the "tailor-made" tools for a particular region should provide reproducible and comparable results.**

What to do with an abnormality?

Subjects with abnormal screening results may not necessarily have unrecognized CKD. These subjects should be referred to a nephrologist for further evaluation (discussed below). Longitudinal follow-up of these subjects for the development or progression of CKD will provide invaluable data on the epidemiology of renal disease. Finally, it is important to recognize that population-based CKD screening programs cannot be incorporated as a component of a standard prevention strategy in the absence of a public health policy that acknowledges the need for screening to detect CKD and allocates