INFORMATION ON CHRONIC KIDNEY DISEASE

Original source: From ISN / IFKF World Kidney Day Website

KEY FACTS

1. What is Chronic Kidney Disease (CKD)?

- FACT: CKD is present when individuals have an increase in excretion of albumin in the urine or a major decrease in kidney function or glomerular filtration rate (GFR). This may lead to complications such as high blood pressure, anaemia, and heart and blood vessel disease.

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2. How common is chronic kidney disease?

- FACT: Globally more than 500 million individuals, or about one adult in ten in the general population, have some form of chronic kidney disease.

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3. What causes chronic kidney disease?

- FACT: Globally the most common causes of CKD have been nephrotic or inflammatory diseases of the kidney, infections, obstruction in the urinary tract and inherited disorders like polycystic kidney disease. This is changing in both developed and developing nations towards diabetes and hypertension, which are also the most common causes of cardiovascular disease (CVD).

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4. How is chronic kidney disease detected?

- FACT: Simple laboratory tests are done on small samples of blood and urine to measure creatinine content and calculated GFR and albumin excretion.

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5. What are the consequences of undetected chronic kidney disease?

- FACT: The first consequence is the risk of developing progressive loss of kidney function leading to kidney failure and the need for dialysis or transplantation. The second is premature death from associated cardiovascular disease.
- FACT: Individuals who appear to be healthy who are then found to have CKD have at least a tenfold risk of dying prematurely from CVD (coronary disease, cerebrovascular disease, peripheral artery disease, and heart failure) regardless of whether they develop kidney failure. CKD contributes towards morbidity from CVD in over 12 million individuals worldwide each year. These numbers are rapidly rising due to the global epidemic of type 2 diabetes.

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6. What are the costs and consequences to society of the growing epidemic of CKD?

- FACT: The costs of end-stage renal disease are escalating. Worldwide, over 1.5 million people are currently alive through either hemo or peritoneal dialysis or transplantation. The number is forecasted to double within the next decade. The cumulative global cost for dialysis and transplantation over the next decade is predicted to exceed US$ 1 trillion. This economic burden could strain healthcare budgets in developed countries. For lower income countries it is impossible to meet such costs.
- FACT: More than 80% of individuals receiving renal replacement therapy (RRT) live in the developed world because in developing countries it is largely unaffordable. In countries such as India and Pakistan less than 10% of all patients who need it receive any kind of renal replacement therapy. In many African countries there is little or no access to RRT, meaning many people simply die.
- FACT: The economic burden for developing countries is particularly severe, partly because CKD generally occurs at a younger age. For example, in Guatemala, 40% of patients on RRT are under 40. In China, the economy will lose US$558 billion over the next decade due to effects on death and disability attributable to chronic cardiovascular and renal disease.

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7. What can be done to detect, prevent and treat chronic kidney and cardiovascular disease?

Detection

- FACT: Simple tests are now available for serum creatinine, calculated GFR and urine albumin that allow early detection of CKD.
- FACT: The majority of individuals with early stages of CKD go undiagnosed, particularly in the developing world. The early detection of kidney impairment is essential and allows suitable treatment before kidney damage or deterioration manifests itself through other complications.

Prevention and delay

- FACT: Screening must be high priority in subjects considered to be at high risk of kidney disease, namely:
    - Patients with diabetes mellitus and hypertension.

    - Individuals who are obese or smoke.
    - Individuals over 50 years of age.
    - Individuals with a family history diabetes mellitus, hypertension and kidney disease.
    - Patients with a presence of other kidney diseases.
- FACT: Current kidney protective treatments should now be extended to those with early stages of renal failure.
- FACT: Key preventative measures have been defined and proven successful in protecting against both renal and cardiovascular disease, such as:
    - ACEs/ARBs for proteinuria and decreased GFR.
    - Reduction of high blood pressure -the lower the blood pressure, the lower the GFR decline.
    - Control of glucose, blood lipids and anemia.
    - Smoking cessation.
    - Increased physical activity.
    - Control of body weight.

Treatment

- FACT: Clinical research over the last decade has shown the potential of blockade of the renin-angiotensin system by ACEs and ARBs to reduce the burden of disease from CVD, diabetes, hypertension and CKD significantly and at relatively low cost. ACE inhibitors are effective in preventing progressive renal function decline.
  Angiotensin-II-antagonists lower albuminuria and prevent progressive renal failure.

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