

World kidney day; from hypothesis to actual activities through 12 years experiences

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Abstract

World kidney day is a combined program of the International Federation of Kidney Foundations and the International Society of Nephrology (ISN). This festival was planned to enforce the appreciation regarding the troubles on the management of kidney diseases; while some of them may be treatable, however they are great medical concerns in many populations. This day purposes to emphasize the risk factors that may reach to chronic renal failure. Accordingly one of the primary aims of the world kidney day is to train the general population regarding the controlling of chronic renal failure and to reassure the high risk individuals to regular checkup for renal failure.

Introduction

Each year on March 14, we celebrate the world kidney day (WKD). WKD, begun firstly in 2006 and then continued to grow every year (1). In these years, the campaign high pointed a noteworthy focus. WKD is a worldwide alertness campaign intended at developing alertness of the significance of the kidneys, to our whole health and to lessen the incidence and influence of renal disease and its related health problems globally. WKD is a combined program of the international federation of Kidney Foundations and the International Society of Nephrology (ISN) (2). This festival was planned to enforce the appreciation regarding the troubles on the management of kidney diseases; while some of them may be treatable, however they are great medical concerns in many populations (3). This day purposes to emphasize the risk factors that may reach to chronic renal failure. Accordingly one of the primary aims of the WKD is to train the general population regarding the controlling of chronic renal failure and to reassure the high risk individuals to regular checkup for renal failure. In this paper we intended to take a look at previous themes of WKD through the previous publications on this subject in our institute and other relevant publications to present a new perspective for future activities of WKD. This year, on Thursday, 8

Core tip

Women with CKD need to special consideration due to various physical and physiological differences like menstruation period, hormonal difference, pregnancy and finally menopause. Chronic renal failure disturbs nearly 195 million women throughout the world and it is presently the eighth conducting cause of mortality in women gender, with near to 600000 deaths every year. The relatively higher rates of diabetes mellitus, overweight, hypertension and obesity/overweight among women could make them susceptible to develop chronic renal failure more than men. Furthermore, pregnant women and their fetuses with chronic renal failure are indeed prone to higher morbidity and mortality.

March 2018, the WKD, will be held with the theme of 'renal disease and women's health' (4,5).

Materials and Methods

For this review, we used a variety of sources including PubMed/Medline, EBSCO, EMBASE, Scopus, directory of open access journals (DOAJ) and also through a search in journals related to Nickan Research Institute. The search was conducted by using combinations of the following key words and/or their equivalents; World kidney day, chronic renal failure, chronic kidney disease, chronic renal failure, glomerular filtration rate, diabetes mellitus, hypertension, obesity, Vitamin D, Diabetic kidney

disease, autoimmune immune disease, lupus nephritis, 1,25-dihydroxyvitamin D₃, end-stage kidney failure, osteoporosis, bone pain, high blood pressure and acute kidney injury.

History of WKD

Each year, the campaign of WKD emphasizes a specific theme. Here we briefly describe the themes of WKD during these years from 2018 back to 2006 when the first item of WKD was presented.

2018 Kidneys and women's health

Chronic kidney disease (CKD) or chronic renal failure, as an irreversible renal dysfunction with diminished glomerular filtration rate (GFR) is a global public health hindrance. Additionally its incidence and occurrence are gradually rising. In this year particular attention has been paid to renal disease in women. Women with CKD need to special consideration due to various physical and physiological differences like menstruation period, hormonal difference, pregnancy and finally menopause (6). Chronic renal failure disturbs nearly 195 million women throughout the world and it is presently the eighth conducting cause of mortality in women gender, with near to 600 000 deaths every year (7). The relatively higher rates of diabetes mellitus, overweight, hypertension and obesity/overweight among women could make them susceptible to develop chronic renal failure more than men. Furthermore, pregnant women and their fetuses with chronic renal failure are indeed prone to higher morbidity and mortality. In general hypertension and diabetic kidney disease, are the main common sources of renal disease. Diabetic kidney disease has been detected as the cause of approximately one-third of all cases of end-stage kidney failure and is the widespread cause of chronic renal failure in most developed countries. Likewise, hypertension is responsible for a quarter of all cases of renal insufficiencies. One of the best modalities to prevent adverse maternal and fetal consequences in women who are prone to renal disease is pre-pregnancy supporting in women with hypertension or autoimmune immune disease such as lupus nephritis to aware them regarding the risks of their potential pregnancy and associated risk factors such as increasing quantity of proteinuria, out of control hypertension and teratogenic impact of medications (8). A concert co-operation of nephrologist, gynecologists and pediatricians would be necessary for these conditions to save the women with kidney disease. One of the mostly important entities in women is vitamin D deficiency which is usually neglected in this group of subjects. Vitamin D is identified as a particular hormone created in the skin from exposure to sunshine. Accordingly, 1,25-dihydroxyvitamin D₃ [1,25(OH)₂D₃], can provoke the absorption of intestinal calcium by 30%–40% and also phosphorus by 80%. Likewise, it increases the absorption of calcium from bones (9). Therefore, vitamin D deficiency decreases

the absorption of dietary phosphorus and calcium from the intestine and therefore, results in osteoporosis and bone pain. Moreover, it will be accompanied by poorly control diabetes or high blood pressure and emerges from various cancers mostly important breast cancer (10,11). Again it should be remembered that the risk of chronic renal failure is at least similar for women as the men, and even may be higher. In women affected by chronic renal failure, in its early stages of CKD, no signs or symptoms may be presented. Importantly, renal disease can be treated or controlled. However, the earlier find the chronic renal failure will accompany the better chances to make an effective treatment. In this regards, urine analysis or evaluation of renal function tests can detect kidney disease, its stages and finally its extension to renal insufficiency. The mostly important problem with an undetected chronic renal failure, is its development to end-stage kidney failure, a condition that requires renal replacement therapy either dialysis or renal transplantation to survive. Another important consequence of chronic renal failure is its association heart and vessels disease particularly in chronic renal failure patients due to diabetic kidney disease (12-15). In fact, premature atherosclerosis accompanies the renal failure and is one of the main causes of mortality and morbidity. However, modalities lead to control, treat or manage the CKD will, slow the process of premature atherosclerosis and also, heart attacks or strokes (16).

2017 Kidney disease and obesity – healthy lifestyle for healthy kidneys

Numerous studies have reported the impact of obesity on the incidence of CKD. Some studies have suggested the direct role of obesity in the incidence of chronic renal failure, while some other studies suggest an indirect effect caused by the effects of obesity on blood pressure and diabetes (17,18). Such an additional effect arises from the impact of obesity on the incidence of some conditions and diseases such as cardiovascular disease, hypertension, and diabetes, which in turn are involved in the incidence of chronic renal failure and are considered as its risk factors (19). Additionally administration of herbal drugs to treat obesity should be under close observation (20).

2016 Kidney disease and children; act early to prevent it

Kidney diseases are characterized by a noteworthy cause of morbidity and mortality in pediatric medicine. In fact, kidney diseases in children are diverse from those of adults in various features comprising the etiologies of chronic renal insufficiency that are somewhat dissimilar in different age groups. For example, reflux nephropathy, urinary infections and other genetic disorders lead to kidney failure (21,22).

2015 Chronic renal failure in debilitated people

Renal diseases are usually silently progressing which

can extensively disturb population's habits and lifestyle. In the year 2015 the WKD steering committee focused on renal disease in debilitated patients. To diminish the risk of renal disease, control of high blood pressure and diabetes, regular physical activity, weight control, healthy diet with appropriate antioxidants and suitable fluid intake, stop smoking, avoiding overzealous drug therapy, and evaluation renal function for any risk factors such as diabetes, hyperuricemia, family history of kidney disease and checking of body mass index for obesity evaluation (23-25). The aim of these suggestions is to increase the attentiveness of persons about kidney and urinary tract diseases, highlighting on the significant role of diabetes mellitus and high blood pressure in developing countries. Absence of concentration on prevention and treatment of renal disease in debilitated people enforces a heavy cost on the health care systems. The incidence of end-stage kidney failure is also higher among the less advantaged indigenous individuals in various regions (26,27).

2014 Chronic renal failure and aging

The older persons are the more susceptible to renal disturbance (28). While chronic renal failure is popular in elderly, thus regular age-based screening for chronic renal failure is crucial (29). Additionally various drugs such as analgesics which are nephrotoxic such as nonsteroidal anti-inflammatory drugs (NSAIDs), or other drugs, herbal drugs (30) or proton-pump inhibitors (31) may administer for older people, particularly when given in large amounts and long-duration in susceptible elderly population. In 2014, the WKD focused on chronic renal failure and aging. Currently, nephrologists, throughout the world, are slowly progressing toward more handling elderly subjects (32). This is due to the problem of various chronic diseases in the elderly population particularly chronic renal failure. Risk factors affecting the elderly with chronic renal failure is multifactorial. Heart and vessel diseases are also prevalent in the elderly population with chronic renal failure (33).

2013 Kidneys for life; stop kidney attack

Recent investigation has detected that acute kidney injury (AKI) is more common than previous which is accompanying with substantial morbidity and mortality (34). Conversely the proportion of individuals remaining after acute renal failure has also been growing over the time (35). Importantly acute renal failure increases the risk for CKD and finally end-stage kidney failure. The reasons why acute renal failure would increase the risk of CKD and end-stage kidney failure may be due continuing inflammatory process and fibrosis and also glomerulosclerosis after an insult of acute kidney injury (36-38).

2012 Donate – kidneys for life – receive

WKD on 8 March 2012 delivered a fortuitous to reflect of renal transplantation as a good choice treatment for end-

stage kidney failure that surpasses dialysis modalities for the quantity and quality of life in end-stage kidney failure. The theme 'Donate - Kidneys for Life – Receive, spotlighted on the positive consequence of renal transplantation and the life-saving feature of organ donation (39).

2011 Protect your kidneys; save your heart

The presence of chronic renal failure considerably increases the risk of a heart and vessel disease in both diabetics and hypertensives. The development of heart and vessel disease is augmented notably by the presence of proteinuria while proteinuria is associated with endothelial dysfunction and stress oxidative (40,41). In fact modalities intended to diminish proteinuria and slow progression of chronic kidney failure can lower heart and vessel disease. Accordingly biomarkers of chronic kidney failure like proteinuria or GFR are simple and reasonably low-cost to identify these group of patients (42,43).

2010 Protect your kidneys; control diabetes mellitus

Numerous diabetic patients are presently not alert that their kidneys are damaged through diabetic kidney disease. Thus, educating alertness regarding that diabetes mellitus and hypertension are main risk factors for chronic renal failure. Hence, promoting a systematic screening of all individuals with diabetes and high blood pressure for chronic renal failure is highly necessary (44-46). Therefore, encouraging preventive activities, educating all medical professionals regarding their crucial role in identifying and diminishing the risk of chronic renal failure, predominantly in high risk people. Diabetic nephropathy is a reduction of renal function that follows in some patients who have diabetes. Around 1 out of 4 individuals with diabetes mellitus have renal disease (46). Chronic high blood sugar values, frequently in association with hypertension, damage the glomeruli and tubulointerstitial area and gradually reduce renal function and destruct kidney function. It should remember that hypertension solely is the second-leading cause of renal damage after diabetes. This kind of renal dysfunction is recognized as diabetic kidney disease. In its initial stages, it has no indicators. However, the "silent" injury going to progress to reach to renal failure (47-51).

2009 Protect your kidneys; keep your pressure down

Cardiac disease is the main cause of mortality for all patients with chronic renal failure. In fact, high blood pressure causes chronic renal failure and CKD causes high blood pressure. Hypertension happens when the pressure in the blood against the walls of the blood vessels increases. If it is not controlled well then it can result in cardiac attacks or strokes, or chronic renal failure (51-53).

2008 Your amazing kidneys

Kidneys need more notice regarding regular laboratory exam, control of urinary tract infections and regular control of blood pressure and checkup for kidney or

prostatic cancers. Additionally some antioxidants protects kidney from various damages (46,54).

2007 CKD common, harmful and treatable

In this year the steering committee on WKD dedicated the theme to CKD as a commune and harmful, however, it is treatable when we detect it in its earlier stages. In addition to various mentioned modalities described above, we should also emphasize on the role of antioxidants to improve kidney function and structure (55).

2006 Are your kidneys OK?

Finally, we describe here, the first theme of WKD in 2016 as "are your kidneys OK?" Physicians and health care providers and also governors should have a regular program for routine check renal function test particularly in high risk groups as mentioned above (56).

Conclusion

WKD is an international alertness movement intended to grow our consciousness of the significance of our kidney function and structure.

Author's contribution

HN is the single author of the paper.

Conflicts of interest

The author declared no competing interests.

Ethical considerations

Ethical issues (including plagiarism, data fabrication, double publication) have been completely observed by the author.

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