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World kidney day 2018; chronic kidney disease and women's health

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ABSTRACT

In the 13th anniversary of World Kidney Day campaign in 2018, the focus is on kidney diseases and chronic kidney disease (CKD) among women. The relatively higher rates of hypertension, diabetes, overweight and obesity among women could make them vulnerable to progress CKD more than men. In addition, pregnant women and their fetuses with CKD are indeed prone to higher morbidity and mortality. One of the best methods to prevent adverse maternal and fetal outcomes would be pre-pregnancy counselling for women with CKD to aware them about the risks of their potential pregnancy and related factors such as proteinuria, hypertension and teratogenic medication. The control of hypertension might also be the best intervention for these patients.

Implication for health policy/practice/research/medical education:

Primary prevention of chronic kidney disease (CKD) in women, especially during pregnancy, results in the control of obesity, type 2 diabetes and hypertension as well as lifestyle corrections like reduction of weight, sporting and a healthy diet. In fact, the control of hypertension, proteinuria, hyperlipidemia and smoking are the most important current interventions. Early case finding of CKD among women, especially pregnant ones, is also very important. One of the best methods to prevent adverse maternal and fetal outcomes would be pre-pregnancy counselling for women with CKD to aware them about the risks of their potential pregnancy and related factors such as proteinuria, hypertension and teratogenic medication. For secondary prevention, it seems that the control of hypertension is the best intervention. There are also some methods to predict CKD among people such as algorithms that have been designed to predict the individual's five-year risk of being diagnosed.

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Introduction

The proportion of patients having chronic kidney disease (CKD) and further end-stage renal disease (ESRD) are increasing worldwide with an important burden on global resources of health care (1,2). Their future continuous increasing might be due to the ageing of population (3) as well as increasing burden of type 2 diabetes (4) all over the world. Epidemiological studies have reported several factors that may affect on the starting and progress of CKD which can be divided into two main categories including risk factors (causal) and risk markers (related to CKD in the absence of proven causal relationships) (2). In addition, there are some susceptibility factors such as: genetic (5), race (6), infant malnutrition and low birth weight (7) and

elderly (3). Moreover, it has been found that diabetes, hypertension, smoking, obesity and hyperlipidemia can be considered as risk factors of progressing of CKD in the general population (8,9). Type 2 diabetes is one of the most important leading causes of CKD (10). Moreover, anemia is prevalent among diabetic patients with CKD due to deficiency of iron and erythropoietin (11). Among CKD patients, the most prevalent causes of death would be cancer, cardiovascular diseases and infections (12).

Materials and Methods

For this mini-review, we used a variety of sources including Web of Science, PubMed, Embase, Scopus and directory of open access journals (DOAJ). The search

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was performed by using combinations of the following keywords and or their equivalents; chronic kidney disease, diabetes mellitus, hypertension, acute kidney injury, type 2 diabetes, end-stage renal disease, kidney, pregnancy, pre-pregnancy counselling, nutritional status, Chronic renal failure, women's health and malnutrition

World kidney day 2018

World kidney day will emphasis on the kidney and women's health in 2018. As a global health campaign, world kidney day, the second Thursday of March each year, is focusing on one special topic related to kidney, to increase the awareness of world people about the kidney diseases (especially CKD). In the 13th anniversary of this campaign in 2018, this day will focus on kidney diseases and CKD among women. The relatively higher rates of hypertension (13), diabetes (14), overweight and obesity (15) among women could make them vulnerable to progress CKD more than men. In addition, women with CKD may have sexual dysfunction such as menstrual abnormalities and decreasing fertility (16). In fact, CKD in women is usually followed by fertility and menstrual disorders because of kidney dysfunction (17,18). There is also some evidence that the female gender could be considered as a risk factor for dialysis access failure (19). In addition, diabetic women may have a higher risk of obtaining CKD compared to men which cannot be completely explained by considering different CKD risk factors, diabetes self-care or depression (20). Type 2 diabetes, as a leading cause of CKD is very important; thus, conducting some strategies for preventing of CKD in these patients may include optimization of glycemic level, blood pressure control and appropriate medications (20).

Each pregnant woman has a substantial hormonal and hemodynamic changes which can affect kidney function, especially in preeclampsia (21). Almost 4% of women at childbearing age may have CKD (22). Pregnant women with CKD and their fetuses are indeed prone to higher morbidity and mortality (23). In addition, the substantial influence of pregnancy in women with CKD is referred to the degree of kidney impairment and having hypertension (24). Moreover, the pregnancy complications for these patients might be prematurity, spontaneous abortion, intrauterine growth retardation, kidney disease flare and preeclampsia (25). The adverse effects of CKD on pregnant women, and related risk of adverse outcomes for mother and fetus, has confirmed in a systematic review study in 2011 (26). It could be better that all pregnant women with CKD will be considered as high-risk pregnancies. Therefore, the measurement of proteinuria during pregnancy should be applied (27). In addition, it has been proved that pregnant women with mild renal impairment, normal blood pressure and no (or little) proteinuria may have good childbearing (28). It has also been reported that pregnancy after transplantation has no special complication, as long as kidney function is fine (29). Moreover, kidney biopsy in pregnant women is an

appropriate method for early detection of asymptomatic patients (30).

It is worth to be an emphasis that the importance of CKD among women should not result in neglecting CKD among men. Moreover, although CKD is more common among women. However, it is more severe among men (31). In addition, although CKD is more prevalent among women, the incidence of ESRD is higher among men which indicates that the progression rate of renal dysfunction may be faster among men than women (31).

Conclusion

As a conclusion, primary prevention of CKD in women, especially during pregnancy, would be the control of obesity and type 2 diabetes and hypertension as well as lifestyle corrections like reduction of weight, sporting and a healthy diet. In fact, the control of hypertension, proteinuria, hyperlipidemia and smoking are the most important current interventions. Early case finding of CKD among women, especially pregnant ones, is also very important. One of the best methods to prevent adverse maternal and fetal outcomes would be pre-pregnancy counselling for women with CKD to aware them about the risks of their potential pregnancy and related factors such as proteinuria, hypertension and teratogenic medication (32). For secondary prevention, it seems that the control of hypertension is the best intervention (33). There are also some methods to predict CKD among people such as algorithms that have been designed to predict the individual's five-year risk of being diagnosed (34). A laboratory measurement is not necessary by these algorithms which will result in their ability to be suitable to use in the time that the information is not provided.

Author's contribution

MA is the single author of the paper.

Conflicts of interest

The author declares no conflict of interest.

Ethical considerations

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

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