

### Global challenge of early detection and management of Chronic Kidney Disease

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#### EDITORIAL

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**C**hronic Kidney Disease (CKD) is a global health burden with a high economic cost to the health system and is an independent risk factor for cardiovascular disease (CVD), not only in the developed country but also in developing country like Indonesia.<sup>1,2</sup> The incidence and prevalence of CKD are increasing every year. The global prevalence of CKD is about 11-13% with the majority in stage III.<sup>1</sup> CKD stage V or End Stage Renal Disease (ESRD) needs a complicated management including renal replacement treatment such as hemodialysis, continuous ambulatory peritoneal dialysis (CAPD) or renal transplantation that are very high cost and limited in some centers.<sup>1-3</sup> The incidence rate of ESRD per million populations in Indonesia from 2002-2006 was increasing from 10.2, 11.7, 13.8, 18.4 to 23.4.<sup>3</sup> There were 117,162 new cases of ESRD reported in United States of America by the end of 2013 and the unadjusted incidence rate was 363 per million/year.<sup>4</sup>

Most of the patients with CKD were asymptomatic until they developed into ESRD. Early detection and proper management of CKD will reduce the prevalence and incidence of ESRD thus will reduce the morbidity, mortality, and cost of the health system.<sup>1</sup> The etiologies of CKD in Indonesia and their prevalence are glomerulonephritis (39.87%), diabetic nephropathy (17.54%), hypertension (15.72%), obstructive and infective (13.44%), unknown (10.93%) and polycystic kidney disease (2.51%).<sup>2</sup>

We should pay attention to the recommendations from Asian Forum for Chronic Kidney Disease (AFCKDI) for early detection of CKD to patients with diabetes, hypertension, who have family history of CKD, individual who receiving nephrotoxic drugs, herbs or substances or taking indigenous medicine, patient with past history of acute kidney injury and individuals older than 65 years. The tools are laboratory examination of protein and red blood cells in urine with standard urine dipstick, serum creatinine and glomerular filtration rate yearly. Early detection of CKD and proper management according to the etiology will reduce the progressive development of CKD and ESRD. Persons in charge that should perform the screening are doctors, nurses, paramedical staff and other trained healthcare professionals. Patients detected to have CKD should be referred to primary care physicians with experience in management of kidney disease for follow up. A management protocol should be provided to the primary care physicians. Further referral to nephrologists for management will be done as needed. Screening for cardiovascular disease risk is recommended in all patients with CKD.<sup>5</sup>

Most patients with ESRD in Indonesia receiving hemodialysis, after that CAPD and the least renal transplantation; 3079, 407 and 63 patients respectively in 2006.<sup>2</sup> In 2014 there are 358 renal unite in Indonesia in 11 provinces that provide hemodialysis (82.4%), CAPD (12.8%), renal transplantation

(2.6%) and continuous renal replacement therapy (CRRT) (2.3%).<sup>6</sup> Renal transplantation is very high cost and only available in few centers in Indonesia, that are nephrology units in university hospitals. A recent issue of organ trade or trafficking is an ethical and legal problem that inhibit the development of renal transplantation in some countries. Organ transplantation is an effective therapy for end-stage organ failure and is widely practiced around the world. According to WHO, kidney transplants are carried out in 91 countries. Around 66 000 kidney transplants were performed globally in 2005. The access of patients to organ transplantation, however, varies according to their national situations and is partly determined by the cost of health care, the level of technical capacity and, most importantly, the availability of organs.<sup>7</sup> Supported by this reality, a significant organ market has developed; the World Health Organization estimates that 5%–10% of the nearly 70,000 kidneys transplanted annually are obtained by organ trafficking.<sup>8</sup>

The future burden of CKD predicted to be higher over next decade. A research in the United States had a result for US adults aged 30 to 49, 50 to 64, and 65 years or older with no CKD at baseline, the residual lifetime incidences of CKD are 54%, 52%, and 42%, respectively. The prevalence of CKD in adults 30 years or older is projected to increase from 13.2% currently to 14.4% in 2020 and 16.7% in 2030. For an individual, the lifetime risk of CKD is high, with more than half the US adults aged 30 to 64 years likely to develop CKD. Knowing the lifetime incidence of CKD may raise individuals' awareness and encourage them to take steps to prevent CKD. From a national burden perspective, the research estimate that the population prevalence of CKD will increase in coming decades, suggesting that development of interventions to slow CKD onset and progression should be considered.<sup>9</sup>

The take home messages from those researchers emphasize us to be aware of acute kidney injury and chronic kidney disease. We, as a health practitioner, should perform screening to individuals with risk factors for developing CKD at least with tools like detecting proteinuria and erythrocyte sediment in urine standard dipstick or microscopic examination, check the level of serum creatinine and glomerular filtration rate yearly. After early detection, the patients with CKD should receive the best management to avoid progressivity of CKD and ESRD from physician or nephrologist. Glomerulonephritis and diabetic nephropathy as the first and second etiology of ESRD should be treated appropriately. In the other hand, we also have the responsibility to promote healthy lifestyle and avoid nephrotoxic drugs, herbs or substances to all healthy people surrounding us. We have to do renal replacement treatment for ESRD in the best way according to ethical and legal concern.

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