NATIONWIDE CKD PREVENTION PROJECT AND OUTCOME IN TAIWAN

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Among other countries, Taiwan used to have the highest incident and prevalent rates of ESRD (dialysis) for many years. Based on the Dialysis Registry of Taiwan Society of Nephrology (TSN), 48,313 hemodialysis and 4,929 peritoneal cases and 8,838 new dialysis cases were recorded in 2008, corresponding to a prevalence of 2,311/pmp and incidence of 384/pmp, respectively. The prevalence of chronic kidney disease (CKD) in Taiwan is estimated from 9.8% (Tw 3H Wave-II) to 11.9% (Wen et al. 2008) of the general population using the new diagnostic criteria and classifications from National Kidney Foundation. Nearly 1.5 million out of 23 million population in Taiwan are CKD patients, but the awareness is only 3.5%, thus indicates the necessity and urgency of CKD education of medical professionals and general population.

In 2001, the TSN made a proposal to the Department of Health, Taiwan to place CKD prevention and care as one of the major public health priorities. Thereafter, the nationwide CKD Preventive Project was launched under the collaboration of the TSN and Bureau of Health Promotion (BHP), DOH. An integrated CKD care program was initiated to promote the screening of high-risk populations, patient education and multidisciplinary team care. This program was developed in several leading tertiary hospitals in the first phase of the project and was extended to 90 institutes by 2009. Presently, more than 31,000 patients with CKD have been recruited. To gear up this CKD Preventive Project, the BNHI started to provide reimbursement on comprehensive pre-ESRD care for patients of CKD stage 4–5 since 2007. An intensive urinary screening program was also conducted for the family members of patients with ESRD under this project. Although the annual budget of reimbursement for CKD was only approximately $US 2 million in 2008, this policy greatly encourages the nephrologists from tertiary hospitals to primary care to conduct this integrated CKD care program. From 2011, CKD stage 1-3A patients were also included by an expanded CKD program and involved general practitioners and other discipline like endocrinologist and cardiologist. Public educational activities were also promoted via media and public activities. Through expanded media, the concept of kidney health and disease prevention could be delivered to the public to improve the low awareness and to facilitate the prevention works.

Chinese herbs, widely used in this country, were suspected as the nephrotoxic agents contributed to the high ESRD/CKD in Taiwan. As aristolochic acid was evidenced to induce chronic interstitial nephritis, renal dysfunction, and urothelial
cancer, five different herbs containing aristolochic acid were prohibited since Nov. 2003 through public health regulation by the government. This important action also contributed to CKD prevention in Taiwan, and the favorable effect could be anticipated.

Throughout this nationwide CKD Preventive Project in Taiwan, successful experiences have been found. One study from northern Taiwan showed that a multidisciplinary predialysis education (MPE) program had significantly lower overall mortality (1.7% for MPE group vs 10.1% for non-MPE group).44 This MPE program also reduced the incidence of dialysis (13.9% for MPE group vs 43.0% for non-MPE group) over a mean follow up of 11.7 months. Another study from southern Taiwan also proved that multidisciplinary pre-ESRD care significantly reduced medical costs for the dialysis period (mean $US 942 1 1941 vs $US 2410 1 2481/patient) and during the total observation period ($US 2674 1 2780 vs $US 3872 1 3270/patient).45 These encouraging outcomes have created a foundation of successful experiences of the CKD Preventive Project in Taiwan. More evidences for improving patient outcome and reducing health-care burden is awaited from the ongoing large-scale population, multi-centres collaborative researches on CKD Prevention and Care Plan in Taiwan supported by the Institute for Biotechnology and Medicine Industry and National Health Research Institute of Taiwan.

After all these efforts, the rising incidence rate of ESRD began to slow down and reduced from 2006 to 2009. It is an encouraging achievement of CKD prevention project collaborated by the government, academic societies, and non-government organizations. We anticipate and look forward to seeing further reduction in ESRD incidence and prevalence in Taiwan when CKD prevention can be expanded and implemented.
Comparison of unadjusted ESRD incidence worldwide
Figure 12.1 (Volume 2)

All rates are unadjusted. Data from Argentina (2005-2007, 2009), Czech Republic (2005-2008), Japan, & Taiwan are dialysis only.

Comparison of unadjusted ESRD prevalence worldwide
Figure 12.1, continued (Volume 2)

All rates are unadjusted. Data from Argentina (2005-2007, 2009), Czech Republic (2005-2008), Japan, & Taiwan are dialysis only.