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REVIEWS

PERITONEAL DIALYSIS IN CHINA

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According to a recent cross-sectional survey of a nationally representative sample of 50,550 Chinese adults, the prevalence of chronic kidney disease (CKD) is as high as 10.8% and has become an important public health problem. Around 119.5 million adults (aged 18 years or older) have CKD (1) and might need dialysis at some point in their life. This will create a heavy burden on the Chinese social insurance system as well as patients' families. It was reported that 16% of patients withdrew from dialysis because of financial stress in 1999 (2).

In the past decade, the dialysis population has begun to increase sharply, following the implementation of improved reimbursement policies. According to the Chinese Society of Nephrology, the total number of dialysis patients exceeded 258,000 by mid-2012. This represents more than double the number reported in the national survey undertaken in 2007–2008 when there were 102,863 dialysis patients, in 27 out of 31 provinces (3). There were only 41,755 dialysis patients at the end of 1999 in China (2). Of note, peritoneal dialysis (PD) utilization has increased even faster than hemodialysis, with 40,000 patients (estimated by Baxter Healthcare) at the end of 2012, which represents nearly a 10-fold increase since 2000 (2) (Figure 1). Peritoneal dialysis penetration thus increased from 8.6% in 2000 to 15.5% in 2012. At the same time, the number of PD centers has also increased from less than 10 to more than 700 (estimated by Baxter Healthcare).

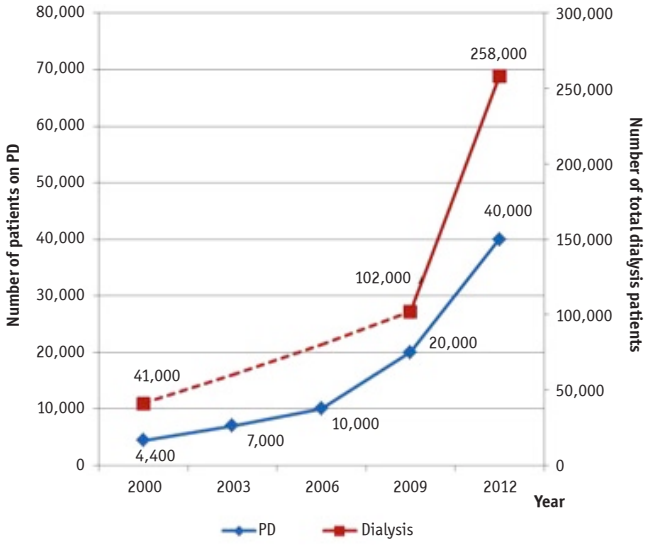

Figure 1 — Increasing trend of total dialysis and PD population in China between 2000–2012 (1–3). PD = peritoneal dialysis.

All patients are currently using traditional glucose solutions with an average dose of 7.8 L/d (4) and most (> 99%) are on manual dialysis (such as continuous ambulatory peritoneal dialysis or daytime ambulatory peritoneal dialysis). Automated peritoneal dialysis (APD), is not reimbursed, and as such is underutilized. Nevertheless, PD quality has consistently improved. In 1999, 30% of patients achieved a Kt/V less than 1.5 with an average of 1.7 and 50% of patients remained on PD for

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less than 1 year with very few (< 5%) remaining longer than 5 years (2). Based on the 2012 Shanghai Dialysis Registry's Annual Report (5), the average Kt/V has been increased to 1.96, and 47% (1,177/2,503), and 22% (564/2,503) of patients have been on PD for at least 3 and 5 years, respectively. In another recent study which selected 9 centers from the largest dialysis facilities in 6 cities, the average Kt/V was as high as 2.1, with 11.5% of patients on PD for 5 years (6).

Approximately two-thirds of PD patients are from large cities on the east coast of China, with the remaining third located in central China. Less than 5% of patients reside in western China, which is considered a remote area. Those residing within the east and large city centers have greater access to affordable healthcare, while those living within the remote areas tend to be less able to afford or access chronic dialysis or healthcare. In contrast, based on the cross-sectional survey (1), the prevalence of CKD is significantly higher in the southwest and the north, which may be due to high sodium intake and low birth weight, two known factors associated with increased risk of CKD. Since these areas have relatively low PD penetration, greater effort is required to support this expanding population in remote areas, where the risk and therefore the increase in demand for dialysis are highest. The provision of intensive PD training and education of the local healthcare professionals, for example, would be a start. Changes to reimbursement policies will improve access to dialysis and improve health-related outcomes.

A recently initiated program, named *Flying Angel*, is an example of efforts made by both the Chinese government and the PD industry. Overcoming the barriers of using PD, "awareness, affordability, and access," is the goal of this partnership, which aims to deliver sustainable PD care to uremic patients living in rural China. Hopefully, this will help China find a way to cover more uremic patients from rural areas who need dialysis and have limited resources, and provide an opportunity to grow and sustain PD in China.

DISCLOSURES

Qiang Yao is Associate Medical Director of Baxter (China) Investment Co., Ltd. Michelle Duddington is Associate Medical Director of Renal Asia Pacific, Baxter Healthcare.

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