THE DEVELOPMENT OF PD IN TURKEY

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Turkey is situated between two continents, Europe and Asia, and covers a territory of 814,578 km² (Figure 1). The population of Turkey was around 71 million by the end of 2007 and is growing at an annual rate of 1.04%. Seventy-two percent of the population lives in urban areas. Turkey has a young population, almost 50% of which is aged less than 20 years. Only 6.8% of the population is over the age of 65 years. Although Turkey has made some progress in its healthcare system over the years, it has a low per capita expenditure (US$586 in 2007) compared to other countries. Life expectancy at birth is now 72.62 years, a figure similar to that in most developed countries. Annual gross domestic product per capita is around US$5500. Total healthcare expenditure is approximately 30 billion US dollars (1).

CHRONIC KIDNEY DISEASE AND PERITONEAL DIALYSIS (PD) IN TURKEY

Peritoneal dialysis in Turkey was first applied in the late 1950s using solutions in bottles for patients with acute renal failure. In 1968, these solutions were used in chronic renal failure patients as intermittent PD treatment (2). In the 1980s, in a small number of chronic renal failure patients, imported solutions were used for treatment with continuous ambulatory peritoneal dialysis (CAPD). At the beginning of the early 1990s when solutions in bags became available, PD treatment became an effective mode of renal replacement therapy (RRT). This application has picked up speed thanks to the production of PD solutions in Turkey since 1994. In addition to CAPD treatment, automated PD was also introduced.

Interest in CAPD treatment increased after 1990 and the nephrology centers of many universities started to establish their own PD units. Also, some young nephrologists went to well-known international PD centers for training in PD. By 1995 the number of end-stage chronic renal failure patients on CAPD had reached 1030, increasing to 5750 by 2007 [unpublished Turkish Society of Nephrology (TSN) registry data]. In 1998, the Turkish Multicenter Peritoneal Dialysis Study Group (TULIP) was established with the participation of 11 PD centers in different regions of Turkey. This resulted in a substantial increase in the number of patients treated with PD and also provided new opportunities for multinational studies.

Since 1994, research activity in PD has increased significantly and 316 scientific publications on PD originating from Turkey have appeared in the expanded Science Citation Index (3).

Today, according to the 2006 report of the Registry of Nephrology, Dialysis and Transplantation in Turkey (the most recent report published by the TSN to date), there is a prevalence of 578 patients per million population (pmp) for RRT (4). In the same document, an acceptance rate of 189 new patients pmp for RRT was observed (4). Over the past 10 years the rates of incidence and prevalence of end-stage renal disease requiring RRT increased rapidly in Turkey, according to the Renal Registry data of the TSN. The major causes of end-stage renal disease are, respectively, diabetic nephropathy and hypertension in adults, and vesicoureteral reflux and primary glomerular

Figure 1 — Map of Turkey.
In 2007, cardiovascular diseases were the most common cause of death among PD patients, with a rate of 42.3%, followed by infections (19.9%) and cerebrovascular diseases (13.6%). The ranking of the most common causes of death remains similar to previous years (4).

Fifty-nine percent of all dialysis patients are treated in private centers. Only nephrologists are allowed to perform PD. There are only 220 nephrologists in Turkey, a much lower figure compared to countries with similar numbers of PD patients. Hemodialysis treatment can be performed by nephrologists, dialysis-certified internists, and practitioners. There are 1660 doctors working in Turkish HD centers (4).

Since most of the developed countries have more than 20% PD penetration, we do expect to reach at least this level in Turkey. There are two main reasons underlying the low PD penetration: the first is patient coverage due to the low number of nephrologists and the second is privatization, only HD is reimbursed in private centers (6).

The reimbursement system varies among the dialysis therapies. Hemodialysis is reimbursed as a treatment package (6) at US$96.77 per session. Reimbursement for HD includes transportation, laboratory analysis, HD ancillaries, and professional charges. The annual cost of HD to the reimbursement entities is US$15085 (7). Although the annual cost of PD, US$14512 per year, is very similar to that of HD, the PD reimbursement system is completely different from the HD reimbursement system. Only solutions and ancillaries are reimbursed in PD. Peritoneal dialysis is priced according to the reference country pricing system, by which the product is reimbursed according to the lowest price of the five reference countries (Italy, Spain, Greece, Portugal, France) (8). When we consider the drugs used in dialysis treatment, such as erythropoietin, vitamin D, phosphate binders, etc., the total treatment cost to the reimbursement entities...
differs due to the higher drug usage and dosage requirement of HD. Hemodialysis cost with drugs is US$23,342, whereas the PD cost is US$17,779, which leads to a US$5,563 difference between the two treatments (8).

SUMMARY

An overview of the current situation of PD in Turkey has been presented here. As mentioned above, Turkey has accumulated significant experience with PD. It is anticipated that there will also be an increase in PD penetration in the near future.

REFERENCES

4. Registry of the Nephrology, Dialysis and Transplantation in Turkey. Istanbul: Turkish Society of Nephrology; 2006. Available at: http://www.tsn.org.tr