

## EDITORIAL

# MANAGING KIDNEY DISEASES IN BANGLADESH

MAMUN MOSTAFI

Chronic kidney disease (CKD) is as one of the major public health problems worldwide causing early death from renal failure, stroke and cardiac problem<sup>1</sup>. According to the Global Burden of Disease Study (GBDS) in 2010, CKD was the 18th cause of global death, which was 27th in 1990<sup>2</sup>. Around 500 million people worldwide are suffering with CKD and the burden is very high in less developed countries, especially in South Asia and sub-Saharan Africa<sup>3</sup>. Overall CKD mortality has increased by 31.7% over the last 10 years, making it one of the fastest rising major causes of death<sup>2</sup>. A recent study by Nizam's Institute of Medical Sciences (NIMS) of India reveals that chronic kidney disease (CKD) will soon be the fifth leading cause of death<sup>4</sup>. 2020 WHO data mentions that in Bangladesh 10,841 or 1.51% of the total deaths was due to renal diseases<sup>5</sup>.

World-wide nearly 2 million patients receive renal replacement therapy (RRT) regularly in the form of dialysis, more than 80% are on Hemodialysis (HD) and 15% are on Peritoneal Dialysis (PD). Only about 5% of the ESRD population can manage a renal transplant. This data is mostly from developed countries, the picture is reverse in developing countries where more than 1.5 million people die every year simply because they don't have access to any form of RRT<sup>1,2,6</sup>.

In a meta-analysis of nine studies in Bangladesh with 225,206 participants, revealed the prevalence of CKD in Bangladeshi people of 22.48%, which was higher than the global prevalence<sup>7,8</sup>. CKD prevalence was higher in female with high heterogeneity ( $I^2$  90%) in contrast to male participants (25.32% vs. 20.31%)<sup>1,8</sup>. Worldwide diabetes is the major cause of CKD. In contrast Data from dialysis units of Dhaka city suggest that chronic glomerulonephritis and interstitial nephropathy comprise 37% of causes of ESRD while Diabetic nephropathy constitutes 33% and hypertension 16%<sup>9</sup>.

Worldwide about 200 patients per million populations reach ESRD per year. Though there is no definite data in our country, with the same incidence there would be approximately 35,000 new ESRD patients per year would be requiring RRT. Presently available facilities can hardly accommodate only 9000-10,000 new patients (twice weekly dialysis); that means, 66% of patients have no access to HD.

The first hemodialysis was done in Bangladesh in 1965 and regular dialysis was started since 1986. There are approximately 120 dialysis centers in the whole country now. Of them, nearly half of the centers are in the capital city of Dhaka. At present most of dialysis centers are of private profit oriented centers costing 2000-5500 Bangladeshi takas per dialysis. Government dialysis centers provide free dialysis but the supports provided by the government organizations are very insufficient, National Kidney institute and Chattogram medical college has a public-private partnership project to provide dialysis on a low cost basis. Nongovernment organizations like Gonoshasthaya Kendra, Kidney foundation, Sonar Bangla Foundation and few others provide dialysis at minimum cost (600-2500 Taka).

Continuous Ambulatory Peritoneal Dialysis (CAPD) was started in 1986; it is not yet a popular form of therapy in Bangladesh. At present 10 centers of the country are offering CAPD services. CAPD cost about 45000 BDT per month. It is usually recommended in cardiac unstable and extreme age groups. Approximately 400 patients are on CAPD now. Every year only about 150-200 patients can afford to continue this modality of RRT<sup>10</sup>.

Kidney transplantation is the most viable and cost effective therapy for ESRD, but could not get a momentum in Bangladesh because of donor shortage. The Human Organ Transplantation Act was first passed by the parliament of Bangladesh in April

---

**Address of Correspondence:** Brig Gen (retd) Mamun Mostafi, Professor and Head, Department of Medicine and Nephrology, Gonoshasthaya Somaj Vittik Medical College, Dhaka, Bangladesh

Received: 09-08-2022

Accepted: 10-08-2022

DOI: <https://doi.org/10.3329/bjm.v33i3.61366>

Bangladesh J Medicine 2022; 33: 233-234

**Copyright:** © 2021 Association of Physicians of Bangladesh

1999, allowing both brain death donation and living-related donor transplantations. The existing act was revised in January 2018<sup>11</sup>. First renal transplantation of our country was performed in October 1981 but regular transplantation was started in Bangabandhu Sheikh Mujib Medical University (BSMMU) since 1988. It was the only transplant center until 2004. At present ten centers are performing kidney transplantation in Bangladesh. So far, nearly 2500 renal transplants have been done. Only live related transplantation is being performed in Bangladesh. Donors are blood related, mostly parents (61%), followed by siblings (34%), spouse (3%), and 2nd degree relatives (2.4%).

As immunosuppressant prednisolone, azathioprine and cyclosporine were used in the past. After 2006, azathioprine was replaced by mycophenolate mofetil and cyclosporine by tacrolimus. Infections and acute rejection are the two major complications and causing fatality in this country. Survival rates at One, three and five year are 95%, 88%, 75% respectively which are comparable to international centers<sup>12</sup>. Efforts are now being made to start deceased donor transplantation; but, lack of sensitization among the public and patients, inadequate facilities and training to maintain brain dead persons at the same time inadequate drives from transplant surgeons have made it difficult to start deceased donor transplantation in Bangladesh.

On the other side of the coin, Bangladesh is an emerging organ bazaar that has been in existence for more than a decade. It is operating by local and international patients, who buy organ within Bangladesh and then obtain the surgery mostly in India, Thailand and Singapore<sup>13</sup>. On December 5, 2019, a bench of Bangladesh high court allowed emotional kidney donation by close relatives or known persons by amending the Transplantation of Human Organs (Amendment) Act 2018. If this ruling is supported by laws from parliament the organ transplantation may get a momentum, saving many lives and foreign currency as well<sup>14</sup>.

#### References:

1. Banik, Sujana & Ghosh, Antara. (2021). Prevalence of chronic kidney disease in Bangladesh: a systematic review and meta-analysis. *International Urology and Nephrology*. 53. <https://doi.org/10.1007/s11255-020-02597-6>. PMID:32789568
2. Mills KT, Xu Y, Zhang W, Bundy JD, Chen CS, Kelly TN, Chen J, He J. A systematic analysis of worldwide population-based data on the global burden of chronic kidney disease in 2010. *Kidney Int*. 2015;88(5):950-7. <https://doi.org/10.1038/ki.2015.230>. PMID:26221752 PMID:PMC4653075
3. Hasan, Mehedi & Sutradhar, Ipsita & Das Gupta, Rajat & Sarker, Malabika. (2018). Prevalence of chronic kidney disease in South Asia: a systematic review. *BMC Nephrology*. 19. 10.1186/s12882-018-1072-5. <https://doi.org/10.1186/s12882-018-1072-5>
4. 'Chronic kidney disease may be 5th leading cause of death in India soon' <http://toi.in/cKz0Va58/a24gk> via @timesofindia
5. Kidney Disease in Bangladesh - World Life Expectancy <https://www.worldlifeexpectancy.com>
6. Scheppati A, Peirco N, Remuzza G. Preventing end stage renal disease: the potential impact of screening and intervention in developing countries. *Nephrol Dial Transplant* 2003; 18: 858-9. <https://doi.org/10.1093/ndt/gfg166>. PMID:12686651
7. US Renal Data System. USRDS 2012. Annual data report. Atlas of chronic kidney disease and end stage renal disease in the United States. Bethesda, MD: National Institute Health, National Institute of Diabetes and Digestive and Kidney Disease 2012.
8. Faroque MO, Rashid HU, Rahman MH, Alam MR, Islam S. Prevalence of diabetes mellitus, hypertension and proteinuria in a rural area of Bangladesh. *Bangladesh Renal J* 2010; 29(1): 7-11.
9. Rashid HU. Management of End Stage Renal Disease- Bangladesh Perspective October 2014, *The Open Urology & Nephrology Journal* 7(1):108-112 <https://doi.org/10.2174/1874303X01407010108>
10. Arefin MSU, Islam MN, Ahmed PI, Rashid HU. A 2-year follow-up study of patients on continuous ambulatory peritoneal dialysis in specialized hospital in Dhaka, Bangladesh. *J Dhaka Med Coll*. 2015; 24(2): 132-135. <https://doi.org/10.3329/jdmc.v24i2.29624>
11. Siraj MS. Organ donation for transplantation in Bangladesh. *Saudi J Kidney Dis Transpl* 2021;32: 1441-9
12. Islam, M. K. (2022). Kidney Transplantation in CKD & Urology Hospital: Our Vision, Mission and Bangladesh Perspective. *Journal of Bangladesh College of Physicians and Surgeons*, 40(40), 106. <https://doi.org/10.3329/jbcps.v40i40.59996>
13. Human organ trafficking in Bangladesh <https://www.thedailystar.net/news-detail-202760#.Yv7gdM52yWQ>. twitter
14. High Court sets out guidelines for kidney transplantation <https://shar.es/afqFi8>