CARE OF PATIENTS WITH END-STAGE RENAL DISEASE IN NIGERIA: A CALL FOR A CHANGE IN PARADIGM

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ABSTRACT
The burden of chronic kidney disease (CKD) is increasing in most developing countries such as Nigeria. There are over a million persons with end-stage kidney disease (ESRD) requiring renal replacement therapy (RRT) around the world. The cost of providing care for patients with ESRD is colossal; and data from most renal centres in Nigeria show that majority of patients are unable to afford the cost of care resulting in a high mortality among ESRD patients. Also, there is no organized funding mechanism for RRT in Nigeria. We highlight some of the challenges limiting access to care for ESRD patients in Nigeria and propose some recommendations on how to change this paradigm.

Keywords: End-stage renal disease (ESRD), renal replacement therapy (RRT), Nigeria.

INTRODUCTION
Nigeria is the most populous black nation in the world with a population of 160 million.[1] As is the trend in most developing nations of the world, the burden of non-communicable diseases such as hypertension, diabetes mellitus and chronic kidney disease (CKD) is on the increase worldwide. More than 50million people are said to have CKD with over a million persons having end-stage renal disease (ESRD) requiring one form of renal replacement Therapy (RRT).[2,3]

In Nigeria, CKD said to account for 8-10% of hospital admissions,[4,5] with a prevalence ranging between 1.6 and 12.4%. {6}The number of Nigerians who have ESRD is not known due to non-existence of a national renal registry. Problems with capturing and systematic ways of reporting cases of ESRD have contributed to this among others.The common causes of CKD in Nigeria include;chronic glomerulonephritis (CGN) and hypertension in adults while obstructive uropathy from congenital causessuch as posterior urethral valves and CGN remain the leading causes in children.[6]

Data from most sub-Saharan African (SSA) countries (including Nigeria)show that most patients with ESRD have no access to adequate care when compared with their counterparts in the developed world.[7]

Renal replacement therapyencompasses all life-supporting treatments for ESRD patients. These include; hemodialysis (HD), peritoneal dialysis (PD) and renal transplantation. In most developed economies of the world, renal replacement therapy is funded by governments and insurance schemes. However, in Nigeria, these therapies are far beyond the reach of majority of ESRD patients who need them due to their prohibitive costs. Also, there is presently no organized funding mechanism for RRT in Nigeria; these have left the burden of ESRD care to the patients and their relations in the majority of cases.[7]

CURRENT STATE OF CARE OF ESRD PATIENTS IN NIGERIA
Renal replacement therapy has been in existence in Nigeria for over three decades; with centres such as Obafemi Awolowo University Teaching Hospital (OAUTH),Ile-Ife and University College Hospital (UCH), Ibadan being the pioneers. The mainmodality of RRT available is HD.[8-11] Currently, there are over 30 Nigerian Federal Government health facilities with several privately owned health institutions providing haemodialysis services across Nigeria.These centres are grossly inadequate for the teaming population of ESRD patients in the country. Also, the majority of the HD centres are located within cities limiting access to care for the rural Nigerian with ESRD.[8] The cost for HD varies widely across Nigeria between the public and private facilities; with cost per session of HD

ranging from between 10 and 40 thousand NGN (62 and 250 USD). In addition, the absence of government funding or subsidy and health insurance to cover the relatively high cost of HD has limited its availability. A review of HD across the country showed that most ESRD patients cannot sustain 3 times per week HD; and by the end of a three month period, majority(over 90%) had stopped HD due to lack of funds.[7,12,]

Since the inception of RRT in Nigeria, peritoneal dialysis (PD) has largely not been available. A review of RRT modalities of treatment over a 19 year period in a centre showed that CAPD constituted only 1.2% of RRT [13] which shows its very low rate of use in the country. The absence of a PD fluid and consumables manufacturing plant in the country has led to the importation of PD fluids and consumables making PD care expensive and so it is largely beyond the reach of ESRD patients where available.[13]

Issues of infection (peritonitis) in the past have also discouraged the wide use of this modality of RRT.[14,15] Presently, there is very little training and experience on PD among the staff of the renal units in Nigeria since this modality of therapy is hardly used in the country.

Renal transplantation has been adjudged as the best form of RRT; and in the long-term the cheapest form of RRT worldwide. However, it accounts for less than 1% of RRT in Nigeria.[13] In Nigeria renal transplantation is done by a number of public and private institutions including: OAUTH, UCH, Lagos University Teaching Hospital (LUTH), University of Maiduguri Teaching Hospital (UMTH), Aminu Kano Teaching Hospital (AKTH) and St. Nicholas Hospital, Lagos. Of these institutions, St. Nicholas hospital has the most experience of over a decade, with an average of 10 renal transplants per year. The main challenge with this modality of RRT in Nigeria is the cost of the surgery and immunosuppressive drugs which arefar beyond the reach of majority of ESRD patients.[13,16] In Nigeria, live-donor kidney transplant costs between 7 and 10 million NGN (33,000.076,000.0 USD) excluding costs of immunosuppressive agents. {8}Another challenge to successful renal transplant is there are few skilled/ trained transplant surgeons and nephrologists with the requisite expertise and experience in pre and post- renal transplant care.[17] In addition, majority of the institutions that started the renal transplant programme in Nigeria had to stop because they lacked necessary equipmentsand personnel (including trained renal histopathologists) for monitoring and ensuring the safety of the allograft.

RECOMMENDATIONS FOR IMPROVED CARE FOR ESRD PATIENTS IN NIGERIA

Resources available for RRT vary substantially between countries; with the developed nations of the world like USA spending over 12 billion USD in 1998 alone on medicare spending for ESRD.[7] while the ESRD patients in most developing countries in Sub-saharan Africa including Nigeria are left to pay for their care out of pocket with little or no government support or subsidy.

In the light of the numerous challenges that bedevil ESRD patients in Nigeria, we put forward the following recommendations:

1. Establishment of a National Renal Registry.
   Recently there have been cries from different parts of sub-Saharan Africa; Nigeria inclusive on the need to have a systematic and organized way of capturing and reporting data on CKD patients requiring RRT.[6,10,18,19]. Comprehensive data from a renal registry will form the basis for planning and lobbying government to formulate policies that will change renal care in Nigeria. The effort by the Nigerian association of nephrology (NAN) to establish a functional renal registry has not yielded much result. The much talk or write up for government involvement in renal care will not sell until facts and figures are presented to government from data systematically collected all over the country.

2. The enactment of Nigerian Renal Care Law.
   The high mortality reported among ESRD patients in Nigeria,[7,12] poverty vis-à-vis the high cost of RRT in Nigeria makes it emergent for the enactment of the Renal Care Law. it was the realization of the fact that the cost of ESRD was more than the individual patients and their families could bear that led the United States (US) congress to pass the law on ESRD in 1973; which was later followed by the US organ transplant act.[20,21] The renal care bill is awaiting its passage into law. NAN and other concerned stake holders have made representations to the Nigerian national assembly on the importance of the passage of this bill. The passage of this bill into law will change the paradigm of care of ESRD patients in Nigeria.

3. The incorporation of renal care into the national health insurance scheme (NHIS).

   There is no doubt that the NHIS has impacted the health of the average Nigerian. However, the current level of contributory funding by the participating individual remains low. As the NHIS moves to its next level of implementation, it will be important to consider revision of the contributions made by the participants upwards with a view towards including ESRD care among the services to be covered by the NHIS. This will guarantee sustainable care for ESRD patients in Nigeria.

4. Provision of subsidy for ESRD care by Government of Nigeria (GoN).

   As all the strategies mentioned above will require legislation and time to come to fruition; it will be needful to put in place short-term measure(s) to cushion the financial burden being faced by ESRD patients and their families while awaiting implementation of the above recommendations. One of such measures will be the provision of subsidy by the federal or state governments. This subsidy should be in the form of procurement of dialysis consumables in large quantities and subsequent distribution to the dialysis centres (including private centres if possible). Although, a good number of the ESRD patients may still not be able to afford the care. Many state governments and philanthropists have already adopted this strategy. Also, the GoN during the era of petroleum tax fund (PTF) supplied some HD consumables to some renal centres in the country; these centres provided HD services at much reduced cost and in certain instances at no cost. This strategy will go a long way to bring down the cost per session of HD to affordable levels.

In conclusion, the prevalence of ESRD reported to be on the rise in Nigeria. The current state of care of ESRD in Nigeria is dismal; with majority of patients being unable to sustain maintenance HD beyond 3 months resulting in a high mortality. PD is unavailable in most centres currently in Nigeria; while renal transplantation is out of the reach for most of the ESRD patients except for a privileged few who get assistance from willing state governments or corporate organisations. To change the paradigm of care of ESRD patients in Nigeria, drastic steps will need to be taken to put in place a renal registry, the long awaited renal care bill should be passed into law by the Nigerian national assembly, the NHIS should be upgraded to cover care for ESRD patients and finally, the procurements of HD consumables by federal and state governments or philanthropists which should be donated to HD centres across the country will reduce the cost of HD substantially and reduce the financial burden on ESRD patients in Nigeria.

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REFERENCES

1. World Bank report 2012.
2. Dirks JH, de Zeeuw D, Agarwal SK, et al: Prevention of chronic kidney and vascular disease: Toward global health equityThe Bellagio 2004 Declaration. Kidney Int Suppl 98:S1-S6, 2005
3. Lysaght MJ: Maintenance dialysis population dynamics: Current trends and long-term implications. J Am Soc Nephrol 13:S37-S40, 2002 (suppl 1)
4. W. Akinsola, W. O. Odesanmi, J. O. Ogunniyi, and G. O. A. Ladipo, "Diseases causing chronic renal failure in Nigeriansa prospective study of 100 cases," African Journal of Medicine and Medical Sciences, vol. 18, no. 2, pp. 131137, 1989.
5. A. Adetuyibi, J. B. Akisanya, and B. O. Onadeko, "Analysis of the causes of death on the medical wards of the University College Hospital, Ibadan over a 14 year period (19601973)," Transactions of the Royal Society of Tropical Medicine and Hygiene, vol. 70, no. 5-6, pp. 466473, 1976.
6. Odubanjo MO, Oluwasola AO, Kadiri S. The epidemiology of end-stage renal disease in Nigeria: the way forward. Int Urol Nephrol. 2011 Sep;43(3):785-92. Epub 2011 Feb 15.
7. Alasia DD, Emem-Chioma P, Wokoma FS. A single-center 7-year experience with end-stage renal disease care in Nigeria-a surrogate for the poor state of ESRD care in Nigeria and other sub-saharan african countries: advocacy for a global fund for ESRD care program in sub-saharan african countries. Int J Nephrol. 2012;2012:639653. Epub 2012 Jun 28.

8. Bambgoye E. Haemodialysis: Management problems in developing countries, with Nigeria as a surrogate Kidney International. 2003. pp. S93S95.
9. Alebiosu CO, Ayodele OO, Abbas A, Olutoyin AI. Chronic Renal Failure at the Olabisi Onabanjo University Teaching Hospital, Sagamu, Nigeria. Afr Health Sci. 2006;6(3):132138.
10. Arogundade FA, Barsoum RS. CKD prevention in sub-Saharan Africa: A call for Government, Non-governmental and community support. Am J Kid Dis. 2008;51(3):515523.
11. Naicker S. End-stage renal disease in Sub-Saharan Africa. Ethnicity & Disease. 2009;19:S1-13S1-15
12. Agaba EI, Lopez A, Ma I, Martinez R, Tzamaloukas RA, Vanderjagt DJ. et al. Chronic hemodialysis in a Nigerian teaching hospital: practice and costs. Int J Artif Organs. 2003;26(11):9915
13. FA Arogundade, AA Sanusi, MO Hassan, A Akinsola. The pattern, clinical characteristics and outcome of ESRD in Ile-Ife, Nigeria: Is there a change in trend? Afr Health Sci. 2011 December; 11(4): 594601.
14. Arogundade FA, Olatunde LO, Ishola AA, jr, Bappa A, Sanusi AA, Akinsola A. PD (peritoneal dialysis) peritonitis: Still a major limiting factor in peritoneal dialysis management today. Afr J Nephrol. 2004;8:5256
15. Arije A, Akinlade KS, Kadiri S, Akinkugbe OO. The problems of peritoneal dialysis in the management of chronic uraemia in Nigeria. Trop Geogr Med. 1995;47(2):74-7.
16. Badmus TA, Arogundade FA, Sanusi AA, et al. Kidney transplantation in a developing economy: Challenges and initial report of three cases in a Nigerian Teaching Hospital. Cent Afr J Med. 2005;**51**:102106
17. Bamgboye EL. Barriers to a functional renal transplant program in developing countries. Ethn Dis. 2009 Spring;19(1 Suppl 1):S1-56-9.
18. Naicker S. End-stage renal disease in sub-Saharan and South Africa. Kidney Int Suppl. 2003 Feb;(83):S119-22.
19. Pozo ME, Leow JJ, Groen RS, Kamara TB, Hardy MA, Kushner AL. An overview of renal replacement therapy and health care personnel deficiencies in sub-Saharan Africa. Transpl Int. 2012 Jun;25(6):652-7. doi: 10.1111/j.1432-2277.2012.01468.x. Epub 2012 Mar 28.
20. R. A. Rettig, "Origins of medicare disease entitlements, social security amendments of 1972," in Biomedical Politics, pp. 176208, National Academy Press, Washington, DC, USA, 1991.
21. Idem, Organ Transplantation: Issues and Recommendations, Rockville.Md: Department of Health and Human Services. Public Health Service and Health Resources and Services Administration, 1986.