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Short Commentary

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Liver transplantation in Nigeria: The road so far

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Abstract

Liver diseases are responsible for approximately 2 million deaths per year globally. One million deaths occur due to complications of cirrhosis and one million deaths have been attributed to viral hepatitis and hepatocellular carcinoma. There are estimated 20 million Nigerians living with viral hepatitis B or C and most are undiagnosed. Knowledge of viral hepatitis remains low among Nigerians despite the mortality caused by the disease each year. The liver transplant service in Nigeria is nonexistent. There are multiple factors responsible for the nonexistent of liver transplantation services in Nigeria and over time there were attempt by clinicians to highlight these factors but still, no tangible progress has been recorded. Liver transplantation services have a high financial, infrastructural and highly specialized human resource demands. These demands have made it a difficult task to successfully establish liver transplant services in most countries in sub Saharan Africa. Efforts are currently ongoing in establishing liver transplant services in Nigeria. Informal legislative consultations have been commenced by some aspiring transplant surgeons and this is to sensitize the law makers of the need for organ transplant legislation that will guide the conduct of deceased organ donation. Also, traditional and religious leaders are currently been consulted informally to educate and sensitize them about the need for widespread organ donation especially liver donation to combat the menace of end stage liver disease in the nation.

Introduction

Liver diseases are responsible for approximately 2 million deaths per year globally. One million deaths occur due to complications of cirrhosis and one million deaths have been attributed to viral hepatitis and hepatocellular carcinoma [1,2]. Cirrhosis is the11th commonest cause of death worldwide while hepatocellular cancer is the 16th most common cause of death. They are said to be responsible for 1.16 million and 788,000 deaths annually which is the equivalent of 3.5% of global mortality. The mortality from liver diseases increases if deaths due to acute hepatitis are added as acute hepatitis is responsible for 145,000 deaths annually [1,2].

Viral hepatitis was the leading cause of chronic liver disease globally, but with improvement preventive measures for HBV and the treatment for HCV there was a paradigm shift in favor of alcohol related cirrhosis [1-4]. Recently there is also increased in cirrhosis precipitated by non-alcoholic related steatohepatitis. These recent changes are attributed to increased obesity and alcohol consumption in many parts of the world [1-4].

These changes however were not observed in most of sub Saharan Africa, Nigeria inclusive, as viral hepatitis is still the most common of liver disease in this part of the world. Nigeria is one of the nations with a highest burden of viral hepatitis with HBV and HCV prevalence of 11% and 2.2%, respectively [1-6]. There

are estimated 20 million Nigerians living with viral hepatitis B or C and most are undiagnosed. Knowledge of viral hepatitis remains low among Nigerians despite the mortality caused by the disease each year [1,3-7]. The mortality pattern in Nigeria is different as most deaths from liver diseases are associated with HCC in 42.5%, while the complications of cirrhosis accounted for 21.1% [4]. Alcoholic liver disease accounted for only 4.14% of patients while non-alcoholic fatty liver disease accounted for 1.38% of liver disease among Nigerian population [8].

Most of the data recorded regarding prevalence, morbidity and mortality in liver disease are mostly hospital based and there are a lot of patients affected in the community that do not present to the hospital for variety of reasons. So it is expected that the burden of liver disease in sub-Saharan Africa and Nigeria is grossly under reported [4,6,9,10].

Most liver diseases progress to chronic liver disease if untreated and this will cause liver cirrhosis. Once decompensation occurs in patients with cirrhosis then liver transplant is indicated. In patients with hepatocellular carcinoma, even if there is compensation in the liver function, liver transplant is recommended in selected patients. End-stage liver disease (ESLD) is the ultimate outcome of most chronic liver diseases [3,5,11-13].

We conducted this review to highlight the challenges of liver transplantation in Nigeria and to chart a way forward.

Status of liver transplantation in Nigeria

The progress of transplantation in Nigeria has been very slow. The first solid organ transplanted in Nigeria was the kidney and it was done in the year 2000, which is 56 years after the first successful kidney transplantation in the world. Since then there have been gradual expansion of kidney transplant centres across the nation and right now there are about 13 centres currently transplanting kidneys [14,15]. The success recorded in the field of kidney transplantation has not been translated to the field of liver transplantation as the country is yet to record its first liver transplantation 59 years after the first attempt at liver transplant by Thomas Starzl in 1963 [16]. There are multiple factors responsible for the nonexistent of liver transplantation services in Nigeria and over time there were attempt by clinicians to highlight these factors but still, no tangible progress has been recorded [5].

Challenges of liver transplantation in nigeria

Liver transplantation is the only definitive treatment for end stage liver disease and its sequelae. Transplantation enhances social re-integration of the patient, improves survival and improves quality of life. However, liver transplantation services have a high financial, infrastructural and highly specialized human resource demands. These demands have made it a difficult task to successfully establish liver transplant services in most countries in sub Saharan Africa [17].

Healthcare funding and financing

In the year 2001, Heads of states from across Africa gathered in Abuja in Nigeria and made a declaration that 15% of all budgetary allocations should go for health, but according to WHO, most African nations including Nigeria fell short of fulfilling the promise. Only 4.2% of the country's 2022 budget was allocated to the health sector. This gross underfunding is one of the main challenges of the health sector as a whole and liver transplantation in particular. Also, a significant portion of the budget goes toward preventive care rather than curative care to which liver transplant belongs. While preventing further infections by hepatitis viruses is important, it is equally important to ensure quality care to those already infecting and this includes ensuring liver transplantation for those with end stage liver disease.

Also the method of healthcare financing in Nigeria is predominantly out of pocket which is responsible for about 70% of the healthcare financing [18,19]. Liver transplant evaluation, procedure and post procedural care is said to cost about $180,000 to $200,000. This is definitely not affordable to a nation in which 42.8% are said to be living below the poverty line.

The way forward is for the policy makers to increase budgetary allocation for health, ensure equitable distribution between preventive and curative care including liver transplantation and for a concerted effort at ensuring a government funded universal health financing that cover Nigerians both in formal and informal sector. Part of the fund for the healthcare sector should also be tailored towards human resource development and this will enable training of highly needed specialists like transplant surgeons, therapeutic endoscopist, interventional radiologist, transplant coordinators, transplant hepatologists among others.

Lack of expertise

Even with appropriate and adequate funding, liver transplantation is an endeavor that requires close collaboration between multiple professionals and super specialists like transplant surgeons, hepatologists, intervention and diagnostic radiologist, transplant coordinators, transplant anesthesiologist, intensivist, psychiatrist and many more. This is a monumental task in a nation with doctor patient ratio of 1: 5000 against the WHO recommended 1: 600.

This further highlights the need for the policy maker to invest in both under graduate (aimed at increasing the number of medical doctors) and post graduate medical education (aimed at increasing the number of specialists and subspecialists in liver transplantation). Also there is a need to incentivize medical practice in Nigeria as one of the reasons for decreased number of doctors and specialists was associated with brain drain especially in the last 30 years.

Inappropiate health seeking beahviour

The healthcare seeking behavior in Nigeria is reported to be poor among significant population of the country [20,21]. There is report that up to 80% of the country's population used unorthodox medication at a point in their life [20,21]. The normal practice in majority of households in Nigeria and most West African nations is unorthodox care first, then patent medicine stores before finally presenting to the hospitals, which in rural setting may be manned by a community health extension worker. Before some patients in rural settings see a medical doctor, they may have been living with their disease untreated for up to 6 months or more. In patients with liver disease, by the time they see a hepatologists, there are multiple delay points that will make them ineligible for liver transplantation. This was also a problem observed by Gyedu et al when analyzing patients

presenting with hepatocellular carcinoma in sub-Saharan Africa [22].

There is need for intensive public education aimed at changing health seeking behavior to encourage people toward early presentation to the hospital. There is also the need to educate people on the risk factors for liver disease, early sign of liver disease and the need for prompt presentation once any of the signs are noticed. Another approach is to educate our community health extension workers on the early signs and risk factors of liver disease to enhance early referral to a specialist and this will reduce the delay in seeing a hepatologist and may be most patients will be eligible for transplant by the time they are seen.

Lack of appropiate donation laws

Transplantation may be a medical procedure but the ethical and legal challenges faced by transplant professional are massive [23,24]. The laws are rightly put in place to reduce organ trafficking. In Nigeria, organ donation is usually from living relatives to another and the current laws of informed consent during surgical procedure have provided cover for such. But if as a nation we intend to commence deceased organ donation anytime soon, then there is the need to establish a legislation that will guide the practice and reduce the tendency for bias and abuse [25].

The need to engage lawmakers to pass a law that will govern the practice of deceased donor transplantation cannot be overemphasized.

Need for central transplatation registry

Transplant registry is an important tool to transplant professionals; it gives a central national or regional data on patients that need transplantation based on preset criteria. The central registry and dataset allows appropriate allocation of deceased donor organ based on the severity of the diseases and based on the immediate need [5,26]. Though this is more applicable in deceased donation, there may be a need to commence the process of establishing the registry before commencement of effective deceased organ donation. The registry is also an important source of data for research regarding the commonest cause of liver failure in the nation and the regional differences within the nation. This differences may guide regional governments in enacting policies that will stem the tide if liver disease in their region.

Efforts so far

There are no central national efforts at establishing liver transplant centre in Nigeria. However, there are isolated efforts by medical directors of the tertiary hospitals in the nation and some aspiring transplant surgeons to initiate the establishment of liver transplant centres in there hospital.

One of such efforts includes organizing an annual symposium aimed at discussing liver surgery and liver transplantation by the entire specialist practicing in the hospital. During the symposium, the aim was to discuss challenges limiting transplantation by each specialist and to plan a way of overcoming the challenges. The same hospital has also commenced a bilateral collaboration with a liver transplantation institute in Malatya, Turkey with the aim of training its personnel in all specialist of liver transplantation. The hospital is also in the process of developing hospital based transplant registry of patients with end organ failure that are amenable to transplantation.

Informal legislative consultations have been commenced by some aspiring transplant surgeons and this is to sensitize the law makers of the need for organ transplant legislation that will guide the conduct of deceased organ donation. Also, traditional and religious leaders are currently been consulted informally to educate and sensitize them about the need for widespread organ donation especially liver donation to combat the menace of end stage liver disease in the nation. Professional bodies in Medicine, Law and some student associations are been recruited in this consultative phase because liver transplantation, just like every other transplantation, is not just a surgical procedure but a lifetime change to the recipients, their family and the community at large.

The process of formation of Nigerian Society for Liver Transplantation (NSLT) is currently ongoing: once the formation and registration of this organization is complete, it will be tasked with the responsibility of national engagement of all stake holders to ensure successful formation of a national liver transplant centre with active involvement of the federal ministry of health and the respective state ministries.

Declarations

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References

1. Mokdad AA, Lopez AD, Shahraz S, Lozano R, Mokdad AH, Stanaway J, et al. Liver cirrhosis mortality in 187 countries between 1980 and 2010: A systematic analysis. BMC Med. 2014; 12: 1–24.

2. Asrani SK, Devarbhavi H, Eaton J, Kamath PS. Burden of liver diseases in the world. J Hepatol [Internet]. 2019; 70: 151–71.

3. Cheemerla S, Balakrishnan M. Global Epidemiology of Chronic Liver Disease. Clin Liver Dis. 2021; 17: 365–70.

4. Ladep NG, Taylor-Robinson SD. Management of liver disease in Nigeria. Clin Med J R Coll Physicians London. 2007; 7: 439–41.

5. Okonkwo UC, Onyekwere CA, Ngim OE, Nwagbara VI BR. Factors Impeding The Practice Of Liver Transplantation Amongst Hepatologists In West Africa. Niger J Gastroenterol 1epatology [Internet]. 2018; 10: 15–9.

6. FMOH. National guidelines for prevention, treatment and care of viral hepatitis in Nigeria. National AIDS/ATIS control program Federal ministry of health. 2016.

7. Ahmed P, Ulonnam C, Mohammed-Nafiu R, Ballong J, Nwankwo G. Pattern of liver diseases among children attending the National Hospital Abuja, Nigeria. Niger J Paediatr. 2016; 43: 46.

8. Ndububa DA, Ojo OS, Adetiloye VA, Aladegbaiye AO, Adebayo RA, et al. The contribution of alcohol to chronic liver disease in patients from south-west nigeria. Niger J Clin Pract. 2010; 13: 360–4.

9. Sepanlou SG, Safiri S, Bisignano C, Ikuta KS, Merat S, et al. The global, regional, and national burden of cirrhosis by cause in 195 countries and territories. 1990–2017: A systematic analysis for the Global Burden of Disease Study 2017. Lancet Gastroenterol Hepatol. 2020; 5: 245–66.

10. Nwokediuko SC, Osuala PC, Uduma U V, Alaneme AK, Onwuka CC. Pattern of liver disease admissions in a Nigerian tertiary hospital. Niger J Clin Pract. 2013; 16: 339–42.

11. Kelvin KN, Chung M Lo. Liver transplantation in Asia: Past, present and future. Ann Acad Med Singapore. 2009; 38: 322–31.

12. Mshelbwala PM, Sabiu L, Lukong CS, Ameh EA. Management of biliary atresia in Nigeria: The ongoing challenge. Ann Trop Paediatr. 2007; 27: 69–73.

13. Chamuleau RAFM, Hoekstra R. End-stage liver failure: filling the treatment gap at the intensive care unit. J Artif Organs [Internet]. 2020; 23: 113–23.

14. Adamu B, Abdu A, Sani MU, Alhassan S V, I MMB. Three years follow up of the first Renal Transplant in Aminu Kano Teaching Three Years Follow-up of the First Renal Transplant in Aminu Kano Teaching Hospital : A Case Report. Trop J Nephrol. 2006; 1: 29–32.

15. Liman HM, Makusidi MA, Sakajiki AM. Kidney transplant-related medical tourism in patients with end-stage renal disease: A report from a renal center in a developing nation. Sahel Med J. 2020; 2: 7–11.

16. Zarrinpar A, Busuttil RW. Liver transplantation: Past, present and future. Nat Rev Gastroenterol Hepatol. 2013; 10: 434–40.

17. Tager S, Etheredge HR, Fabian J, Botha JF. Reimagining liver transplantation in South Africa: A model for justice, equity and capacity building - the Wits Donald Gordon Medical Centre experience. South African Med J. 2019; 109: 84–8.

18. Uzochukwu BSC, Ughasoro MD, Etiaba E, Okwuosa C, Envuladu E, Onwujekwe OE. Health care financing in Nigeria: Implications for achieving universal health coverage. Niger J Clin Pract. 2015; 18: 437–44.

19. Onwujekwe O, Ezumah N, Mbachu C, Obi F, Ichoku H, et al. Exploring effectiveness of different health financing mechanisms in Nigeria; what needs to change and how can it happen? BMC Health Serv Res. 2019; 19: 1–13.

20. Duru CB, Iwu AC, Uwakwe KA, Diwe KC, Merenu IA, et al. Health Care Seeking Behaviour and Predictors of Combined Orthodox and Traditional Health Care Utilization among Households in Communities in Owerri, Imo State, Nigeria. Open J Prev Med. 2017; 07: 115–37.

21. Latunji OO, Akinyemi OO. Factors Influencing Health-Seeking Behaviour Among Civil Servants in Ibadan, Nigeria. Ann Ibadan Postgrad Med [Internet]. 2018; 16: 52–60.

22. Gyedu A, Shrauner WR, Kingham TP. No patients to resect or transplant:An analysis of patients with hepatocellular carcinoma admitted to a major African referral hospital. World J Surg. 2015; 39: 231–6.

23. Ajayi SO, Raji Y, Salako BL. Ethical and legal issues in renal transplantation in Nigeria. Saudi J Kidney Dis Transpl. 2016; 27: 125–8.

24. Adegbite OB. Cultural-Religious Traditions and Practices and the Law Governing Cadaveric Organ Donations in Nigeria. Univ BOTSWANA LAW J. 2019; 95–120.

25. Emmanuel EH, Nabena IF. Legal and Ethical Developments in the Regulation of Organ. Nnamdi Azikiwe Univ J Int Law Jurisprud. 2020; 11: 122–36.

26. Massie AB, Kuricka LM, Segev DL. Big data in organ transplantation: Registries and administrative claims. Am J Transplant. 2014; 14: 1723–30.