

Management of liver disease in Nigeria

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ABSTRACT – Nigeria is the most populous country in Africa but, despite extensive oil deposits, little of the country’s recently found wealth has filtered through into the healthcare sector. Nigerian hospitals are poorly equipped and infrastructure for interventional procedures is mostly lacking. Liver disease is common, owing to the high prevalence of hepatitis B and hepatitis C, which often coexist with HIV infection. Antiviral treatments are expensive and drugs are commonly unavailable, even if they can be afforded. Therapy for end-stage liver disease is difficult, since endoscopic services are not widespread. A new training programme for oesophageal variceal band ligation at Jos University Teaching Hospital, Central Nigeria, aided by educational bursaries from the Royal College of Physicians, however, provides some promise in improving healthcare standards. The work of agencies, such as the Tropical Health and Educational Trust has fostered direct one-to-one links between UK hospitals and healthcare workers in a variety of African countries and offers a model for future development, albeit on a local, rather than a national or international, basis.

KEY WORDS: band ligation, endoscopy, healthcare, hepatocellular carcinoma, liver disease, Nigeria, oesophageal varices, viral hepatitis

Background

Nigeria is the largest country in Africa, in terms of population, with over 130 million inhabitants and it is the ninth most populous country in the world. In land area, however, it is only the 32nd largest country, being about the same size as Venezuela or about half the size of Alaska (Fig 1). Nigeria is the world’s eighth largest oil exporter leading to a tremendous disparity in income with significant oil revenues ending up in the hands of the elite few, while the majority of the population live closer to the poverty line.^{1–3} Nigeria was created by the European colonial powers in the great ‘Scramble for Africa’ in the 19th century. The British ruled the mainly Christian southern and mainly Muslim northern provinces from the colonial capital, Lagos, until 1960 when the country gained independence, first as a dominion with the Queen as head of state and three

years later as the Federal Republic of Nigeria. In official circles, English is the common *lingua franca*, owing to the fact that Nigeria is ethnically diverse.

The structure of the Nigerian health service

The Nigerian health service is broadly divided into a primary healthcare system in both rural and urban settings, secondary healthcare facilities with clinics offering simpler treatment and tertiary health institutions in the form of regional hospitals, usually affiliated to universities. In practice, this three-tier system fails to function effectively due to poorly defined roles. In 2000, the World Health Organization (WHO) ranked Nigeria’s overall health system performance as 187th out of the 191 WHO member states.⁴ The public expenditure on health is less than \$8 per capita, compared to the \$34 which is internationally recommended.^{1–3}

Most of Nigeria’s disease burden consists of preventable diseases with poverty being a major underlying factor. The maternal mortality rate is one of the highest in the world, while the mortality rate for

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Fig 1. Map of Nigeria. © Central Intelligence Agency, 2007.¹

children under five years of age is higher than the average for sub-Saharan Africa.⁴

Many of the primary healthcare facilities serve only 5–10% of their potential patient load for a variety of reasons, but mainly through lack of investment and the consequent loss of patient confidence, resulting in patient self-presentation at hospitals, thus bypassing the tiered healthcare system. Diagnostic and investigative equipment in tertiary health institutions are outdated. The referral system between various types of health facilities is either non-functional or ineffective.

There is an erratic supply and non-availability of essential drugs and related materials, usually for financial reasons. This has led to a flourishing black market in counterfeit medications. The Nigerian drug regulatory authority has, however, tried to regulate the use of fake, substandard, outdated, adulterated and unregistered drugs, which have been prevalent throughout Nigeria in lieu of standard medications.

The demographics of liver disease in Nigeria

The burden of viral hepatitis in Nigeria is difficult to quantify precisely, because of insufficient demographic data and paucity of scientifically sound research. Of the various agents causing viral hepatitis, data on hepatitis B virus (HBV) have been relatively more available and suggest that the prevalence of hepatitis B surface antigen in the normal population ranges between 15–20% and up to 30% in some areas.^{5–7}

Of all causes of deaths from liver disease, hepatocellular carcinoma (HCC) alone accounted for 42.5%, while the complications of cirrhosis accounted for 21.1% of the deaths in a study conducted in 1997 at a tertiary health facility in Nigeria.⁸ While the true prevalence of HCC is lacking, a report from a Nigerian teaching hospital highlighted HCC as the most common reason for cancer diagnosis among admissions to medical wards.⁸ Hepatocellular carcinoma in the early 1990s was the most common cause of cancer mortality in middle-aged and elderly Nigerians.⁹ In Nigeria, most studies on hepatitis C are not community based, with the majority of reported studies among blood donors.^{10,11} Therefore, the data significantly under-represent the actual burden of the condition. The available studies estimate this prevalence at between 2.9% to 10.3%.^{10–13}

Cirrhosis has been difficult to estimate in Nigeria, owing to a number of factors. First, there is reluctance by patients to give consent for liver biopsy and insufficient capably trained doctors who can perform the procedure. Second, there is a paucity of sufficiently equipped diagnostic histopathology facilities across the country, even if the pathologists themselves are in post. While alternative sophisticated imaging techniques to determine whether the liver is cirrhotic are being used more frequently in the developed world and debates are on-going as to whether techniques, such as transient elastography, magnetic resonance imaging and spectroscopy can replace the need for histology, no such move is practical in the Nigerian context, where imaging equipment is often outdated and if available at all is, for the most part, limited to simple grey-scale ultrasound.^{14–17}

Treatment of liver disease

At the moment, only lamivudine and interferon-alfa-2a have been licensed by the Nigerian drug regulatory authority for the treatment of viral hepatitis. While lamivudine is used in chronic hepatitis B infection, interferon can be used for both chronic hepatitis B and C infections. The cost of treating these conditions, however, is outside the reach of the minimum wage earner in Nigeria. It costs about \$1,200 for a one-year course of lamivudine and \$10,000 for a six-month course of interferon (TB Oloruto-Oba personal communication 2006). In the context of HIV, coinfecting patients with hepatitis B may be eligible for WHO-subsidised lamivudine therapy, but this is only available in a minority of cases.¹⁸ Therefore, most patients remain untreated with the consequent issues of disease progression towards cirrhosis and HCC. The only evident use of antiviral therapies in the context of viral hepatitis was reported by Ola and co-workers in southwestern Nigeria.¹⁸

The Association for the Study of the Liver in Nigeria has produced a draft document highlighting guidelines for the management of viral hepatitis. The production of these guidelines is a bold step towards stimulating contemporary hepatology practice in Nigeria, since management of the complications of chronic liver disease is currently below the developed world standards, and is in no small part due to inadequate health financing.

Owing to shared routes of transmission, coinfection of hepatitis B, hepatitis C and HIV is prevalent in Nigeria.¹⁹ The HIV pandemic is so significant that the Nigerian government depends on foreign support, including from the WHO and from non-governmental aid agencies. Some of the donors have taken note of this dual infection and have made provision for their treatment, especially with respect to coinfection with hepatitis B and HIV. Lamivudine, tenofovir and emtricitabine can all work against HIV and HBV replication, but the emergence of drug-resistant strains of HBV is common owing to sub-therapeutic regimens, lack of compliance and poor supervision.

No wide-scale screening for HCC has taken place or is on-going in the at-risk population, mainly through lack of resources. As a consequence, the majority of patients present very late and sadly, mortality due to HCC approximates to incidence.

Variceal haemorrhage from portal hypertension used to be a harbinger of death, not only in Nigeria, but also in most West African countries, due to the absence of endoscopic therapeutic techniques. This is gradually changing, since attempts by the endoscopy unit at the Jos University Teaching Hospital to perform oesophageal variceal banding, as well as injection sclerotherapy, are beginning to yield results, albeit on a small scale in national terms (Fig 2).

The training programme in endoscopic therapies has been bolstered by Royal College of Physicians (RCP) educational bursaries which have allowed visits to the UK and reciprocal visits to Nigeria. If uptake of techniques such as oesophageal band ligation becomes widespread nationally, it has the potential of markedly improving survival due to variceal haemorrhage, as the complications of end-stage liver disease currently carry a significantly heavy burden in Nigeria.



Future developments

While this article presents a fairly depressing picture of a lack of infrastructure and healthcare funding in an oil-rich country, the pursuit of small scale developments offer glimmers of hope for the future. To this end, the links fostered by the RCP, with respect to endoscopy training in Jos, and the work of organisations such as the Tropical Health and Education Trust (THET) are improving standards in a variety of arenas in Nigeria and across Africa.²⁰

THET provides training for front line health workers in the poorest settings, and develops the institutional capacity of local health institutions. This is achieved through focusing on the goals of local healthcare specialists in individual hospitals, clinics and primary healthcare projects and offering specialist support and training from UK-based health professionals on a one-to-one basis.

Established in 1988, THET has developed long-term partnerships in eight African countries including Ethiopia, Somaliland, Swaziland, Mozambique, Ghana and Nigeria. Direct links have been fostered with healthcare workers in these countries with experts in nursing, physiotherapy and medical care in over 16 UK hospitals and NHS trusts with bilateral visits undertaken to bolster local expertise as required.

Rural and urban communities have seen improved standards in their health workers' emergency and surgical skills in the treatment of chronic diseases and mental health provision and in the countless other areas of health service delivery and training, aided by hospital partnerships and other projects. While these projects remain small scale, they offer a model for future development and a tangible way through which UK health professionals can interact directly and make a difference. Nigerian doctors are well trained and are keen to redress imbalances in healthcare if given the resources and the financial impetus to do so. We hope that the work of the International Office of the RCP and of THET will continue to encourage the development of links in Nigeria and in other parts of Africa to this end.

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