



**OSUN STATE UNIVERSITY
INAUGURAL LECTURE
SERIES
007**

**Emerging Epidemic of
Non-Communicable Diseases
– Conspiracy against the kidney**

By

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Preamble

The Deputy Governor of the State of Osun, Otunba (Mrs) Grace Titi Laoye– Tomori, The Vice–Chancellor, Registrar and other Principal Officers of the University, Provosts of all Colleges, Deans and Directors, Members of Senate, My Lords Spiritual and Temporal, Friends of the University/Special Guests, Distinguished Academicians, Distinguished Ladies and Gentlemen, Gentlemen of the Press, Great Students of Osun State University.

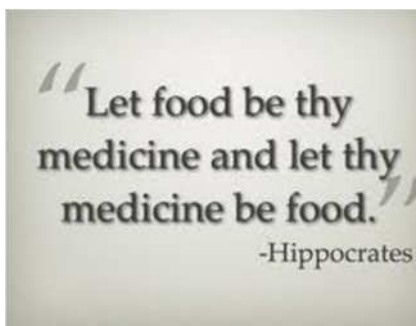
I thank the Almighty God for making this memorable day possible, delivering the 7th inaugural lecture of the Osun State University on the eve of my fiftieth birthday anniversary. Amazing and real, I thank God for making me the first Professor of Medicine to deliver an inaugural lecture in the Osun State University.

By His special grace and favour, I am also the first person to give such a lecture from the Department of Medicine, College of Health Sciences of this University. By the end of today, I would have become the second medical Professor of Osun State origin, to deliver Nephrology inaugural lecture on Osun State soil, the first being the most revered Teacher of Teachers, Prof. Wale Akinsola. I have always looked forward to the day; the day to share my thoughts with the university community and the public in general.

Mr Vice-Chancellor Sir, as a resident doctor in the University College Hospital Ibadan, I had unfulfilled one year stay as a Senior Registrar in Neurology. I nursed the idea of becoming a Nephrologist with a view to helping out in the management of our ever increasing population of people with kidney diseases in the country. I found Nephrology Unit as the least politized unit of the University College Hospital Ibadan in the nineties, having suffered some academic loss as a result of “medical politics” in my undergraduate days. During my residency training days, I became aware of the devastating role diabetes was playing in the developed countries as a principal *accomplice* in the conspiracy against the kidney. I also became aware of gradual but steady westernization of our lifestyle and the global epidemic of diabetes – hence the choice of my specialization in diabetic kidney disease, an area where little research had been done in this country.

Health is recognized as an essential component of human development. The World Health Organization defined health “as a state of complete physical, mental, spiritual and social well-being and not only or merely the absence of disease”. Therefore, the question that comes to mind is: Who is healthy? How does one know who satisfies this definition of health? Or can we assume that anyone who has not sought help from any health care service provider

is healthy? The answer is NO. We all know that many people suffer from one kind of ailment or the other in silence partly because they do not know that they are sick. The truth of the matter is, there is a subtle difference between health and ill-health that cannot be seen with the naked eye.



Mr Vice-Chancellor Sir, *Nephrology* is a special branch of medicine that deals with study of the Kidneys. Nephrology is unique in that it incorporates all other branches of medicine and merges them into one practice area that is concerned with the science and art of preventing diseases, prolonging life and promoting physical health and efficiency relating to our kidneys. I have spent a better part of my career life in teaching and research, specifically in the renal effects of non-communicable diseases (including diabetes and hypertension) which

commonly contribute to the development of chronic kidney disease.

A public lecture like this, with the bias of my discipline, should therefore not be highly academic, boringly long and directed at only the highly intellectual minds of academics in medicine and allied fields, but should be simple enough so that the general assembly will benefit. Health undeniably is of great interest to all and sundry.

Distinguished ladies and gentlemen, I feel highly honoured to be given the privilege and opportunity to deliver this inaugural lecture.

What exactly are Non-Communicable Diseases (NCDs)?

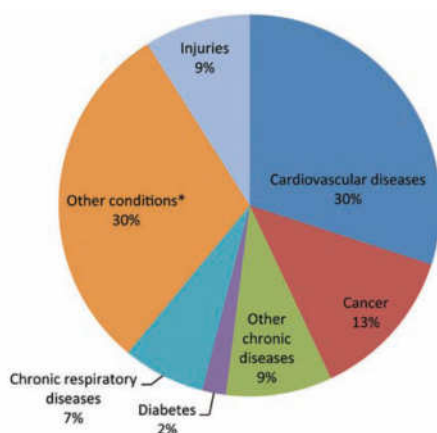
Non-Communicable diseases (NCDs) are defined as diseases of long duration, generally slowly progressive that cannot be transmitted from person to person. They are the major cause of adult mortality and morbidity worldwide (WHO, 2005a). Four main diseases are generally considered to be dominant in NCD mortality and morbidity: cardiovascular diseases (including heart disease and stroke), diabetes, cancer and chronic respiratory diseases (including chronic obstructive pulmonary disease and asthma). They are the leading causes of death globally, killing more people each year than all other causes combined. Contrary to popular opinion, available data demonstrate that nearly 80% of

NCD deaths occur in low- and middle- income countries. Of the 57 million deaths that occurred globally in 2008, 36million (63%) were due to NCDs.

About one fourth of global NCD – related deaths take place before the age of 60. Communicable diseases arise from transmission of an infective agent or its toxin from an infected person, animal or reservoir to a susceptible host while non-communicable diseases are related to lifestyle and have genetic predisposition.

Generally, apart from hypertension and diabetes, non-communicable diseases include cardiovascular diseases, oral-health and sickle-cell disease, violence, injury and disabilities, cancers, mental health and substance abuse problems and sight related diseases.

NCDs constitute more than 60% of deaths worldwide as shown below:



Culled from WHO, 2005a (Data for 2005)

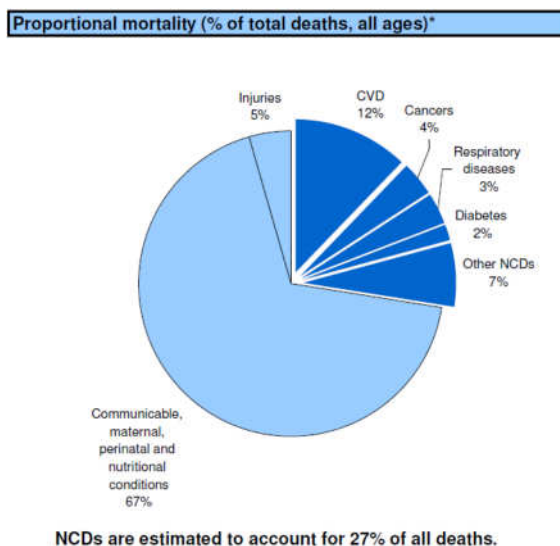
Introduction

Africa faces a double burden of infectious and chronic diseases. While infectious diseases still account for at least 69% of deaths on the continent, age-specific mortality rates from chronic diseases as a whole are actually higher in sub-Saharan Africa than in virtually all other regions of the world, in both men and women. Over the next ten years the continent is projected to experience the largest increase in death rates from NCDs including cardiovascular disease, cancer, respiratory disease and diabetes.

Mr Vice-Chancellor, the *WHO Global status report on non-communicable diseases 2010* (GSR 2010) indicated that NCDs are the biggest cause of death worldwide. More than 36 million people died from NCDs in 2008, mainly cardiovascular diseases (48%), cancers (21%), chronic respiratory diseases (12%) and diabetes (3%). More than 9 million of these deaths occurred before the age of 60 and could have largely been prevented. The leading risk factor globally for mortality is raised blood pressure (responsible for 13% of deaths globally), followed by tobacco use (9%), raised blood glucose (6%), physical inactivity (6%), and overweight and obesity (5%). The number of people with diabetes increased from 153 million in 1980 to 347 million in 2008. Recent statistics released by the International Diabetes Federation (IDF) indicate that the number of people living with diabetes is

expected to rise from 366 million in 2011 to 552 million by 2030.

Nigeria Statistics by WHO (2008)

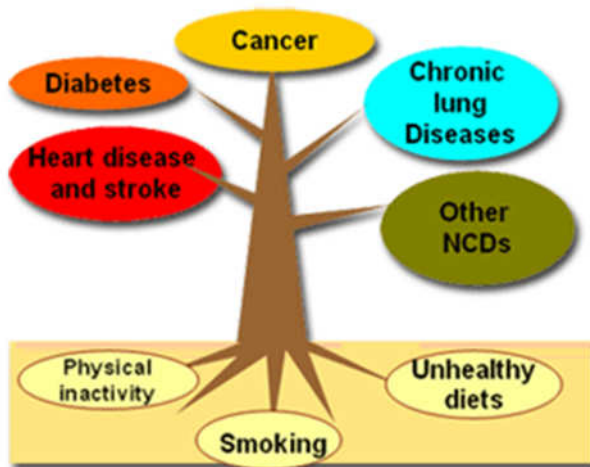


Overview of Non-Communicable diseases (NCDs)

(i) Spectrum

Non-communicable diseases have become a major health problem not just in developed countries but also in developing countries. As at now, 79% of the deaths attributed to non-communicable diseases occur in developing countries. The four leading NCDs are the

world's biggest killers and are preventable. Up to 80% of heart disease, stroke, and type 2 diabetes and over a third of cancers could be prevented by eliminating shared risk factors, mainly tobacco use, unhealthy diet, physical inactivity and the harmful use of alcohol. The World Health Organization (WHO) projects that, globally, NCD deaths will increase by 17% over the next ten years. The greatest increase will be seen in the African region (27%) and the Eastern Mediterranean region (25%). Ironically, NCD prevention is currently absent from the Millennium Development Goals.



(ii) Risk Factors

A large percentage of NCDs are preventable through the reduction of their four main behavioural risk factors:

1. Tobacco use

Risks to health from tobacco use result not only from direct consumption of tobacco but also from exposure to second-hand smoke. Cigarette smoke contains many chemicals known to be injurious to health, with about 50 being carcinogenic.



2. Physical inactivity

Participation in 150 minutes of moderate physical activity each week (or equivalent) is estimated to reduce the risk of heart attack (ischaemic heart disease) by approximately 30%, the risk of diabetes by 27%, and the risk of breast and colon cancer by 21–25%. Additionally, physically activity lowers the risk of stroke, hypertension and depression.

3. Harmful use of alcohol

Hazardous and harmful drinking was responsible for 2.3% deaths worldwide in 2004, which amounts to 3.8% of all deaths in the world, occurring due to NCDs, including cancers, cardiovascular disease and liver cirrhosis.

4. Unhealthy diet

There is convincing evidence that the consumption of high levels of high energy foods, such as processed foods that are high in fats and sugars, promotes obesity compared to low – energy foods such as fruits and vegetables.

These behaviours lead to four key metabolic / physiological changes:

1. Raised blood pressure: The overall prevalence of raised blood pressure in adults aged 25 and over

was around 40% in 2008. It is a major risk factor for stroke and coronary heart disease.

2. Overweight and obesity: Risks of coronary heart disease, ischaemic stroke and type 2 diabetes mellitus increase steadily with increasing body mass. The worldwide prevalence of obesity has nearly doubled between 1980 and 2008.



3. Raised cholesterol: A raised cholesterol level increase the risks of heart and stroke, and is a major cause of disease burden in both the developed and developing world as a risk factor for ischaemic heart disease and stroke.

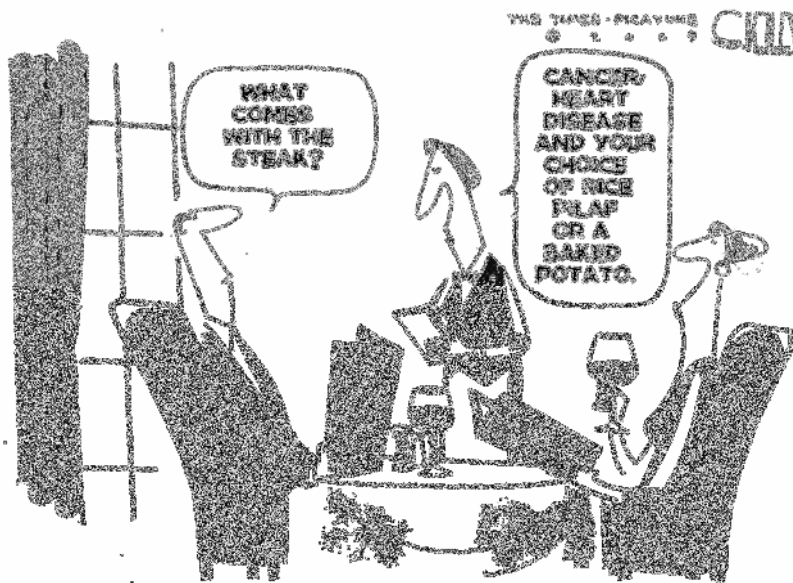
4. Hyperglycaemia (High blood glucose): Recent statistics released by the International Diabetes Federation (IDF) indicate that the number of people living with diabetes is expected to rise from 366 million in 2011 to 552 million by 2030, if no urgent action is taken. This equates to approximately three new cases every ten seconds or almost ten million per year. It is a chronic condition that lasts a lifetime.

Prevention and control of Non Communicable Diseases

To lessen the impact of NCDs on individuals and society, a comprehensive approach is needed that requires all sectors, including health, finance, foreign affairs, education, agriculture, planning and others, to work together to reduce the risks associated with NCDs, as well as promote the interventions to prevent and control them. An important way to reduce NCDs is to focus on lessening the risk factors associated with these diseases. Low-cost solutions exist to reduce the common modifiable risk factors (mainly tobacco use, unhealthy diet and physical inactivity, and the harmful use of alcohol) and map the epidemic of NCDs and their risk factors.

The 2008–2013 *Action plan of the global strategy for the prevention and control of non-communicable diseases* provides Member States, WHO and international partners with steps on how to address NCDs in their own

countries. The WHO *Global strategy on diet, physical activity and health* aims to promote and protect health by enabling communities to reduce disease and death rates related to unhealthy diet and physical inactivity. The WHO *Global strategy to reduce the harmful use of alcohol* offers measures and identifies priority areas of action to protect people from harmful alcohol use.



Matters Arising: Double disease burden and complications

Mr Vice-Chancellor Sir, after the second World War, the high-income, industrialized countries of the world made major advances against infectious and childhood diseases through improved public health measures, nutrition, vaccines, and, to a lesser degree, antibiotics. Non-communicable diseases became a real burden for these developed countries, thereby making these diseases to be associated with economic development and to be known as diseases of the rich. The "epidemiologic transition" from communicable to non-communicable diseases as the major threats to health did not begin in low-and middle-income countries (LMICs) until the dawn of the third millennium. In sub-Saharan Africa, this transition imposes more difficult problems, considering the double burden of the still existing infective diseases (such as malaria, gastroenteritis, pneumonia) coupled with the non-infective diseases, in a resource poor environment characterized by inadequate and moribund healthcare delivery systems.

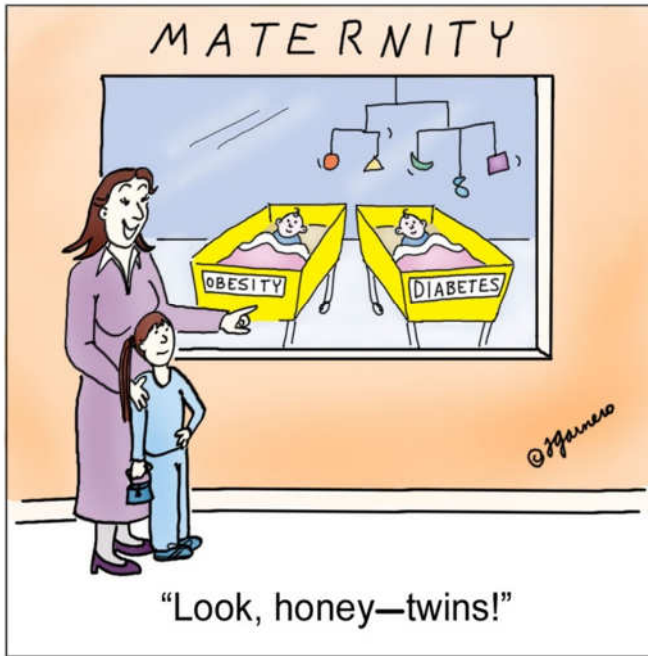
Unfortunately, this dismal picture is further compounded with the emergence of another epidemic plague, HIV/AIDS (human immunodeficiency virus/acquired immunodeficiency syndrome) in the eighties, as well as the threat of avian and swine influenza infections. From 1980 onwards, the rapid transmission of HIV/AIDS has

not been preventable except by behavioural change; there is no vaccine for prevention, and affordable treatment is not until recently. This leaves many countries with a double burden of health problems – a new epidemic of infectious disease and unresolved infectious conditions, as well as a growing set of non-communicable diseases.

Diabetes Mellitus

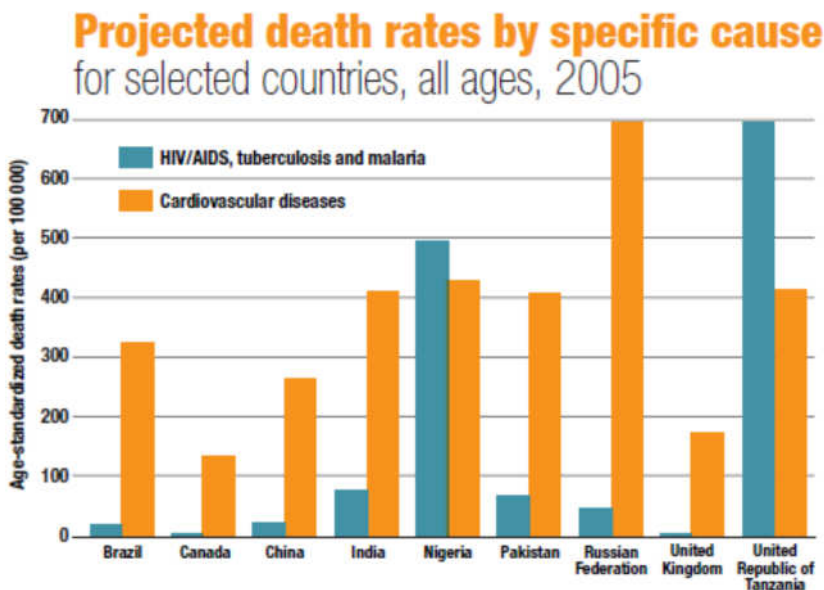
Mr Vice-Chancellor Sir, diabetes mellitus is a non-communicable disease influenced by behavioural lifestyle modifications and is fast becoming a deadly disease. It is currently ranked number four killer in the world (coming after cardiovascular diseases, cancers and chronic respiratory diseases, WHO 2005). Previously thought to be a disease of adults, it now afflicts children and youths regularly worldwide due to the increasing urbanization, technological advancement and consumption of 'junk' diet.

Diabetes mellitus is a group of metabolic diseases characterized by high blood glucose levels that result from defects in insulin secretion, or action, or both. Diabetes mellitus, commonly referred to as diabetes was first identified as a disease associated with "sweet urine," and excessive muscle loss in the ancient world. Elevated levels of blood glucose (hyperglycaemia) lead to spillage of glucose into the urine, hence the term sweet urine.



In sub-Saharan Africa, the proportion of people with undiagnosed diabetes can reach up to 90% in some countries compared to about one-third undiagnosed people in high income countries. Some of Africa's most populous countries also have the highest number of people with diabetes, with Nigeria having the largest number of people (3.0 million), followed by South Africa (1.9 million), Ethiopia (1.4 million) and Kenya (769,000). The recent IDF data (2011) estimated the prevalence of diabetes in Nigeria to be 4.04%, compared to Reunion (highest in Africa - 16.78%), Benin (1.71%), Ghana (4.09%),

Niger (4.36%), Cameroun (5.18%) and South Africa (6.46%). The burden of premature death from diabetes is similar to that of HIV/AIDS, yet the problem is largely unrecognized.



People can often be without symptoms in the early stages. However, the earlier diabetes is diagnosed the greater the chances that serious complications, which can result from having diabetes, can be avoided. Diabetes symptoms may result from acute or late complications.

Not only is diabetes chronic, it is also associated with acute complications, the occurrence of which greatly increases the medical cost of managing both the

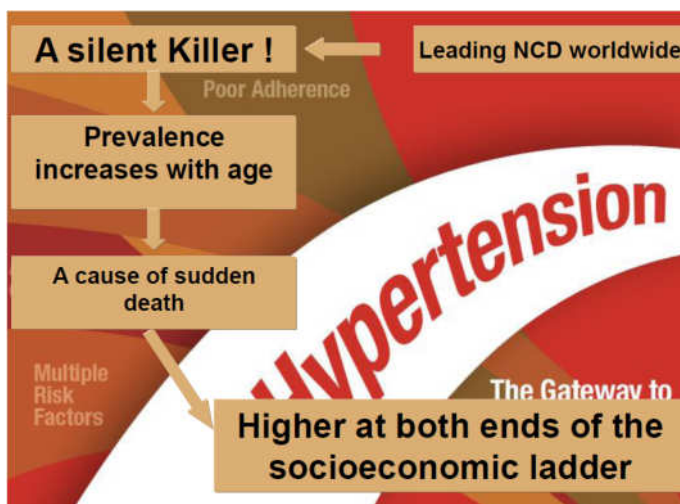
condition and the complications. The chronic complications are related to blood vessel diseases and are generally classified into small vessel disease, such as those involving the eyes, kidneys and nerves (microvascular disease), and large vessel disease involving the heart and blood vessels (macrovascular disease).



Before insulin was discovered in 1921, diabetes was a fatal disease – most patients would die within a few years of onset. In 1921, Dr. Frederick Banting at the University of Toronto, Canada, along with a medical student Charles Best discovered insulin. Diabetes treatment depends on the type and severity of the diabetes. The management of patient with Type 1 diabetes is mainly by injecting insulin, with some dietary and exercise adherence. Patients with Type 2 diabetes are usually managed with tablets,

exercise and dietary adjustments. When these measures fail to control the elevated blood glucose, oral medications are used. If oral medications are still insufficient, insulin injections are considered.

Hypertension



Mr Vice-Chancellor Sir, hypertension is the most important modifiable risk factor for heart diseases, stroke, congestive heart failure, end-stage renal disease, and peripheral vascular disease. Because of the associated morbidity and mortality and the cost to society, hypertension is an important public health challenge. Hypertension is a worldwide epidemic; overall, the prevalence of raised blood pressure in adults aged 25

and over was around 40% in 2008 (BP in excess of 140/90 mm Hg). Approximately 30% of adults are still unaware of their hypertension; up to 40% of people with hypertension are not receiving treatment; and, of those treated, up to 67% do not have their blood pressure (BP) controlled to less than 140/90 mm Hg.

Based on recommendations of the Seventh Report of the Joint National Committee of Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC VII), hypertension, defined as systolic blood pressure (SBP) ≥ 140 mm Hg and / or diastolic blood pressure (DBP) ≥ 90 mm Hg is an important medical and public health issue affecting one billion people worldwide and accounting for approximately 7.1 million deaths per year.

The classification of BP (expressed in mm Hg) for adults aged 18 years or older is as follows:

- a. Normal – Systolic lower than 120, diastolic lower than 80
- b. Pre-hypertension – Systolic 120–139, diastolic 80–90
- c. Stage 1 – Systolic 140–159, diastolic 90–99
- d. Stage 2 – Systolic equal to or more than 160, diastolic ≥ 100

From another perspective, hypertension may be categorized as either essential or secondary. Essential

hypertension is diagnosed in the absence of an identifiable secondary cause.

The first line of treatment for hypertension is the same as the recommended preventive lifestyle changes such as dietary changes, physical exercise, and weight loss, which have all been shown to significantly reduce blood pressure in people with hypertension. The medications for treating hypertension, called antihypertensives, act by lowering the blood pressure. Reduction of the blood pressure by 5–6 mmHg can decrease the risk of stroke by 40%, decrease the risk of heart disease by 15–20% and reduce the likelihood of dementia, heart failure and death.



Chronic kidney diseases

Mr Vice-Chancellor Sir, the United States National Kidney Foundation defines chronic kidney disease (CKD) as evidence of kidney damage based on abnormal urinalysis results (eg, proteinuria, hematuria) or structural abnormalities observed on ultrasound images of the kidneys or a Glomerular Filtration Rate (GFR) of less than 60 mL/min for 3 or more months.

Diabetes remains the leading cause of Chronic Kidney Disease (CKD) globally. The well-recognized risk factors for CKD include diabetes mellitus, hypertension, increasing age, family history of kidney disease, cigarette smoking, and dyslipidaemia. Others include exposure to heavy metals such as lead, low birth weight with a reduction in the number of nephrons, and the use of herbal remedies, particularly in Africa.

The aetiologies of ESKD vary in different parts of Africa. In tropical and East Africa, the commonest causes of ESKD are hypertension, glomerulonephritis, diabetes mellitus, and obstructive uropathy. In South Africa, it is CGN, Hypertension and Diabetes. The leading causes of ESKD in Asia are chronic glomerulonephritis, diabetic nephropathy, chronic interstitial nephritis, and nephrolithiasis. However, there is a changing trend in the aetiology of ESKD in Asia. Diabetic nephropathy is now the leading cause in Japan and Malaysia. Diabetes remains

the leading cause of ESKD in Europe as well as in the United States and Australia.

Cancers

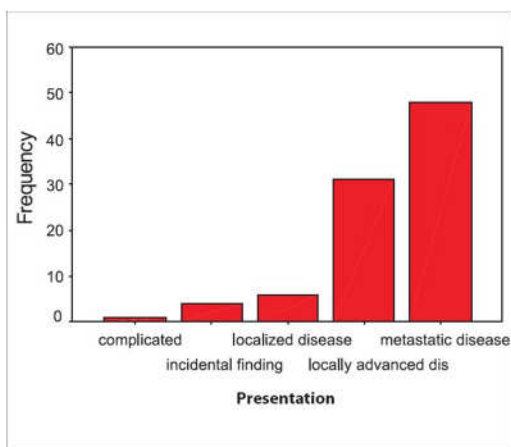
Mr Vice-Chancellor Sir, cancer is gradually becoming a recurring decimal in our public life. A simple but old definition defines cancer as an abnormal mass of tissue in the body. The growth of this tissue is uncoordinated and hence it is haphazard in spread, destroying critical organs in the body with fatal outcomes. Currently, cancer is defined as a genetic disease. Abnormalities in genes that control cellular proliferation lead to unrestrained growth that characterizes the malignant cell.

Between 2000 and 2020, the World Health Organization (WHO) predicted that the total number of cases of cancer in the developed world will increase by 29%, whereas in developing countries an increase of 73% is expected. Over 10 million new cases and over 7 million deaths from cancer occurred worldwide in 2000. The developing countries contributed 53% for incidence and 56% for deaths. Thus, it will be important to adopt preventive measures for many cancers, including education against behaviour associated with an increased risk and immunization and screening where feasible and cost-effective.

The three most common cancers in Nigeria are cancer of the breast, closely followed by cancer of the cervix, cancer of the prostate and colorectal cancers in that order.

Apart from prostate cancer, cancers may not have much effect on the kidney and so may not be conspiring, as it were, against the kidney. All men older than age 50, or have a positive family history of prostate cancer are at an increased risk of developing prostate cancer. These men may consider a strategy to reduce the chances of developing prostate cancer, although it is important to balance the potential risks and benefits of these preventive treatments. Prostate cancer screening involves blood test that measures prostate specific antigen (PSA), rectal examination and prostatic biopsy.

Mode of Presentation of Prostatic Cancers



Ajape AA et al. Ann Afr Med 2010;9:113-7

My Contributions

Mr. Vice-Chancellor sir, let me at this point talk briefly about some of my research contributions to my profession.

My research activities

Diabetes

Towards the end of my postgraduate training at the University College Hospital, Ibadan under an erudite scholar Prof. Solomon Kadiri, I distinguished myself by carrying out the very first *prospective* Nigerian Study on Clinico-pathological Study of Diabetic Nephropathy based on renal biopsy (C.O. Alebiosu, S. Kadiri, E.U. Akang. Nig. J. Clinical Practice. 5(1); 5–9: 2002). Similar previous studies were on cadavers. Apart from the technical findings that the frequency of occurrence of nodular and diffuse glomerulosclerosis was 20% and 98.1% respectively and that the typical Armani–Ebstein lesion was very rare amongst our patients, we were able to show that kidney biopsy could be done as a safe procedure in a developing economy such as ours on an outpatient basis which was most cost-effective. We carried out kidney biopsies on 55 patients without complications on an outpatient basis. Our patients reported to the outpatient department of the UCH at 8:00 am for the biopsy. Thereafter, they were kept for observation after the biopsy for about eight hours

before discharged home and were followed up over three months. The conclusion of the study was that Nephrologists can reliably perform the procedure with minimal morbidity on an outpatient basis even in Nigeria. (C. O. Alebiosu & S. Kadiri. J. Natl Med Assoc. 96 (9), 2004). Thus, the procedure maybe more affordable to patients.

Mr Vice-Chancellor, over time, diabetes mellitus has emerged as a global health care problem that has reached epidemic proportions. It is a major risk factor for cardiovascular disease; with a 2 to 4 fold increased risk compared with persons who do not have diabetes. Diabetes mellitus is the leading cause of blindness, non-traumatic amputations, and end-stage renal disease.

Using a casual blood glucose $>11.1\text{mmol/L}$ and/or FBG $>7\text{mmol/L}$, the total yield of people living in Ogun State adjudged as having diabetes was 2,956 (5.05%) in the SIDCAIN study. The SIDCAIN Study covered all the 20 Local Government Areas of Ogun State. This is higher than the National average of 2.2% (1992) but a little higher than the 2011 estimate for the country released by the IDF (4.04%). Thus, there is an urgent need to implement prevention strategies that include health education policies geared towards adoption of healthy lifestyle measures that prevent or delay the onset of type 2 diabetes and hypertension. The outcome of this

research study is under consideration for publication by the Canadian Journal of Diabetes.

Earlier on and over a three year period (September 1999 – August 2002), we observed that those living with diabetes tend to be sicklier when they develop symptoms and signs of kidney complication. We identified patients with diabetic nephropathy as a high-risk group for excess cardiovascular morbidity in Nigeria. Thus, it is imperative to aggressively prevent or slow down progression of diabetic kidney disease. (Alebiosu C.O., Odusan O, Jaiyesimi A.E.A. *J Natl Med Assoc.* 2003;95:1042–1047.)

In caring for diabetics, we observed as early as 2008 that set goals were not achieved (CO. Alebiosu, EO. Obi, O. Ogunsemi, et al. Assessing the degree of success for American Diabetes Association clinical goals among diabetic subjects in a teaching hospital setting in Nigeria. *Nig. Endo. Pract.* 2008. 2(2): 79–85.) *This is an academic paper that I wrote with my sister, Mrs Oluwayemisi Eunice Obi* One of the main reasons identified for the poor outcome, was the poor knowledge of diabetes and hypertension care amongst our healthcare givers (C.O. Alebiosu, O. FAMILONI, O.O. Ogunsemi, et al. Knowledge of diabetes & hypertension care among health workers in Southwest Nigeria. *Postgraduate Medicine.* 2009; 121(1): 173–177).

Furthermore, I led another team to study Metabolic Syndrome – otherwise known as the deadly quartet! Each

component of the metabolic syndrome (MS) conveys increased cardiovascular disease risk, but as a combination they become much more powerful. In 2004, we studied the occurrence of MS and its relation to cardiovascular events among patients with type-2 diabetic mellitus. We observed that the syndrome was present in 25.2% of the 218 diabetics studied. The presence of the syndrome and its different components were associated with a higher risk of stroke, peripheral vascular disease, and occurrence of microalbuminuria. We recommended a need to actively create awareness towards the prevention of component diseases of metabolic syndrome including diabetes and hypertension in our community.

Other Research Interests

1) Complementary and Alternative Medicine

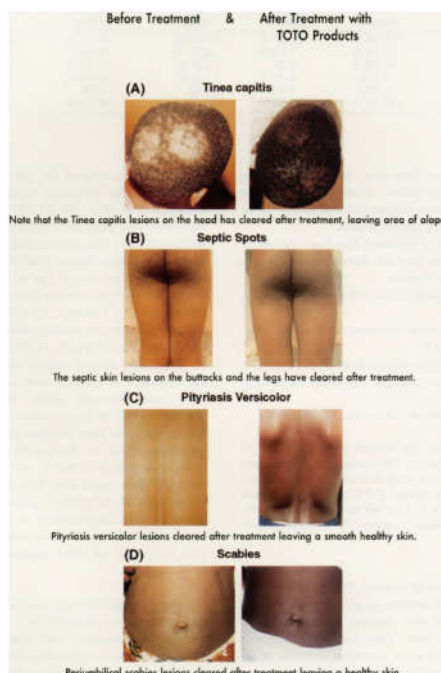
Mr Vice-Chancellor Sir, I started my unsupervised research work at the Olabisi Onabanjo University, Ago-Iwoye. Working at the Olabisi Onabanjo University Teaching Hospital, Sagamu, I observed then that many local inhabitants of the community were in the habit of using local herbs for most ailments. There has been little research done on complementary and alternative medicine (CAM) otherwise known as ‘tewe-tegbo’ even in Western countries. However, CAM is used in a huge array of practices, including herbal remedies, acupuncture,

chiropractic, and hypnosis, among others. Many plants have been found to have medicinal value in Nigeria, especially in treating skin diseases. In such treatment, plants were used simply by rubbing the crushed leaves on the affected skin.

In 2002, I was approached by an indigenous company, *Smoofoord International Nig. Ltd*, makers of *Toto ointment and soap*, to conduct an evaluation research for the purpose of registration with Nigeria's National Agency for Food and Drug Administration and Control (NAFDAC). *Toto* products were purely of indigenous origin and were described by the manufacturers as being effective against common skin diseases suggesting a broad medical effect. Led by me, the research team carried out a field evaluation of the products. The objective was to evaluate the efficacy and tolerability of the products in the management of common skin disorders seen in urban and rural communities of Sagamu and Isara (and Iperu) respectively. At the end of the study period, out of the 129 patients with fungal infections treated with *Toto* ointment alone, 92 (71.3)% were successfully treated. 41 (87.2%) out of the 47 patients with scabies were also fully treated with *Toto* ointment alone. Although few patients were seen with bacterial skin infections during the period, these patients responded well to the ointment, the soap or a combination of the two. Overall, the combination of *Toto* ointment and soap showed better treatment rate on

all diseases when compared to regular treatment with sulphur ointment alone. The study demonstrated the efficacy and tolerability of *Toto* products (skin ointment and soap) in the management of common skin disorders. (C.O. Alebiosu, BSc, MBChB, FWACP, A. Ogunledun, BSc (Hon), MSc, MAAS, MNYAS, and D.S. Ogunleye, BSc Pharm, MSc, PhD, MPSN. J. Natl Med Assoc. 2003; 95:95–105.). As a result of this study, the Olabisi Onabanjo University, Ago-Iwoye was awarded the best Nigerian University Commission Award for indigenous research in 2004.

Fig 2: Showing skin diseases before and after treatment with Toto products



2) Hypertension

The Nigerian national survey on NCDs conducted by the Federal Ministry of Health in Nigeria which covered all the states of the Federation remains the only nation-wide data available till date. The survey gave a crude national prevalence ratio of 11.1% for men and 11.2% for women, with age-adjusted rates of 9.2% and 9.3% respectively. To update data on epidemiology of hypertension in the country, the SIDCAIN Research Group obtained a research grant (WDF 08-321) from the World Diabetes Foundation, (of which I am the lead investigator), and embarked upon and completed one of the largest community based studies on non-communicable disease in Nigeria, involving 58,657 subjects in Ogun State, between 2008 – 2011 (C.O. Alebiosu, Familoni O.B. Ogunsemi O, Kolawole B. et al. Community based diabetes risk assessment in Ogun state, Nigeria. *In Press 2011*). We found that the prevalence of hypertension using the JNC VII in the study subjects was 27.7%. This is slightly higher than the National average of 20% obtained in 1999. About 2/3 two thirds of our hypertensives had stage 1 hypertension ($\leq 159/99$) which is in consonance with the National consensus.

2a Complications of Hypertension

Mr Vice-Chancellor Sir, hypertension is linked with certain target organ damage (TOD) and associated clinical conditions (ACC). The brunt of organ damage caused by hypertension is borne by the heart, brain, kidneys and blood vessels. The involvement of these organs is associated with increased morbidity and mortality.

At the Olabisi Onabanjo University Teaching Hospital, Sagamu, I initiated a study to assess the extent, pattern and predictors of TOD/ACC in patients with hypertension (O.E. Ayodele, C.O. Alebiosu, B.L. Salako et al. (CVSA 16 (2); 89–93:2005). Target organ damage and associated clinical conditions were detected in 60.1% of the study population. Out of 203 patients studied, the prevalent TOD and ACC were observed to be left ventricular hypertrophy (31.0%), chronic kidney disease (18.2%), diabetic nephropathy (12.8%), heart failure (10.8%) and cerebrovascular disease (8.9%). Advanced retinopathy was present in 15 patients (7.4%), and transient ischaemic attack and myocardial infarction (MI) in one patient each.

The importance of the study lies in the fact that it calls attention of physicians to the organs that needed more attention in the management of our teeming hypertensive population.

2b Microalbuminuria

Blood pressure pattern is known to follow a daily circadian variability. Typically, it tends to be highest in the mornings and gradually decreases during the course of the day, to reach the lowest levels at night. The apparent implication of this is the greater occurrence of heart related diseases (cardiovascular events) during the early hours of the day. Hypertensives who fail to manifest the normal evening (nocturnal) fall in blood pressure are called '*non-dippers*', whereas those with a normal daily rhythm are called '*dippers*'.

Like non-dippers, hypertensives with abnormal urinary protein called '*microalbuminuria*' identify a group of hypertensives who are likely to develop early and severe complications including heart and kidney failure. *Microalbuminuria* is also associated with severe hypertension, diabetes mellitus, hyperlipidaemia, coronary artery disease, peripheral vascular disease, heart attacks and stroke.

In 2003, I led a research group in a study to identify the dippers and non-dippers among hypertensives population attending the Olabisi Onabanjo University Teaching Hospital, Sagamu as well as those with microalbuminuria among them. We observed that 28% of the 50 hypertensives were non-dippers and 57.1% had microalbuminuria with the attendant heart (cardiovascular) and renal risks. (C.O. Alebiosu, O.

Odusan, O.B. Familoni and A.E.A Jaiyesimi. *Cardiovasc J South Afr* 2004; 15: 9–12). Appropriate steps were taken to treat the patients. The study identified a group of hypertensives that were likely to develop early and severe complications including heart and kidney failure.

2c Sleep abnormalities

The quality of sleep and prevalence of “poor sleep” among hypertensive patients has not been studied in Nigeria. It is generally assumed that sleep disorders are independently associated with hypertension. In western countries, about 50% to 60% of sleep abnormalities (apnoea) in patients are hypertensive, and an estimated 50% of hypertensive patients have sleep disorders. This association is particularly strong in patients with resistant hypertension. Therefore, we conducted a study on the pattern and quality of sleep among adult hypertensive patients attending a tertiary health care facility (*Postgrad Med* 2009; 121: 166–172). We observed that a total of 42.4% of hypertensive patients had poor sleep. The conclusion was that poor sleep is common in our hypertensive patients and may be associated with lowered health-related quality of life.

3) Chronic Kidney Disease

Mr Vice-Chancellor Sir, chronic kidney disease is a common cause of morbidity and mortality in Nigeria. It is a progressive and irreversible loss of kidney function that has lasted more than 3 months. Some of the functions of the kidneys that are usually lost include regulation of salt and water, erythropoietin production (body chemical responsible for stimulating production of red blood cells), vitamin D production and blood pressure regulation. It is a well known fact that the burden of the disease is enormous and the occurrence is increasing at an alarming rate worldwide. The disease accounts for up to 8% of hospital admission rates in Nigeria with a mortality rate of over 90% within 3 months. Less than 1% of Nigerians are able to afford kidney transplantation which is the ultimate treatment of chronic kidney disease.

There are many identified factors causing chronic kidney disease, however the prevalence of these factors differ to varying extent in different parts of the world. In Nigeria, some socio-cultural practices can lead directly or indirectly to the development of chronic kidney disease. These include long-term ingestion of herbal concoctions/preparations, chronic analgesic abuse (certain pain killers) and the use of certain soaps / creams

/ lotions used as bleaching agents. Nigerians should refrain from consumption of medications without prescriptions. Certain habit like the chronic use of pain killers (especially the group known as *non-steroidal anti-inflammatory agents*) is associated with the development of chronic kidney disease. Other bad socio-cultural habits associated with kidney disease include the chronic exposure to heavy metals (such as lead found in paints and mercury in soaps etc), and obesity – which is regarded as ‘a sign of good living’ in Africa men and women. A specific obesity associated kidney disease has now being identified!

3a. In 2002, I assessed the level of awareness of about 455 Sagamu inhabitants towards kidney diseases. I observed that there was a low awareness regarding the occurrence, causes and prevention of kidney diseases in the society. With chronic renal failure being the third most prevalent cause of medical admissions in Sagamu (with a high case fatality rate of 55%), a need was identified to introduce measures that will improve the awareness, aim at preventive measures such as pre-employment urinalysis screening and health education. [Afr. J. Health Sci. 2002; 9; 152–155]. Thereafter, activities towards creating awareness by celebrating the World Kidney Day (March) as well as World Diabetes Day (November) became a regular activity of the hospital.

WORLD DIABETES DAY 2011



3b. In 2009, I conducted a study on the normal kidney sizes amongst Nigerians (SB. Adebayo, CO. Alebiosu and GOG. Awosanya. Sonographic determination of Renal Sizes in Nigerian Adults. Nigerian Hospital Practice. 2009. 4(1-2), 3-7. Basically, normal kidney dimension is a useful tool to assess kidney function. Sonography of the kidneys has replaced standard radiography for evaluation of renal disease because renal length measurement is a simple, practical and reproducible measurement of kidney size, but individual variations such as height, body area, gender and age are not generally considered in its measurement. There have been few studies estimating renal dimensions in Nigeria including studies done by Akinkugbe and Abiose (1970) in Ibadan, Odita and Ugbodaga (1982) in Benin, Okoye et al (2005) in Enugu, and Dakum et al in Jos (2005). In 2009, we related kidney sizes to differences in body height, sex and age. We obtained a mean renal lengths of 10.2 ± 0.7 cm (left side) and 10.0 ± 0.8 cm (right side), $p < 0.0001$; and median renal volumes of 125.5 ± 35.1 cm³ and 118.7 ± 33.3 cm³ respectively. A reduction in renal length (with a cut off point of 8.5 cm or less) indicates irreversible disease. For general use, we obtained a simple linear regression equation to predict renal lengths based on height: renal length = $6.1078 + 0.0248$ (height) cm, $p < 0.001$. Another equation we obtained predicted renal length based on body surface area (BSA): renal length = $0.8839\text{BSA} + 8.6260$, $p < 0.001$.

Fig. 1: Shows a simple linear regression equation predicting the subjects average renal length based on height [$6.1078 + 0.0248 (\text{height}) \text{ cm}$].

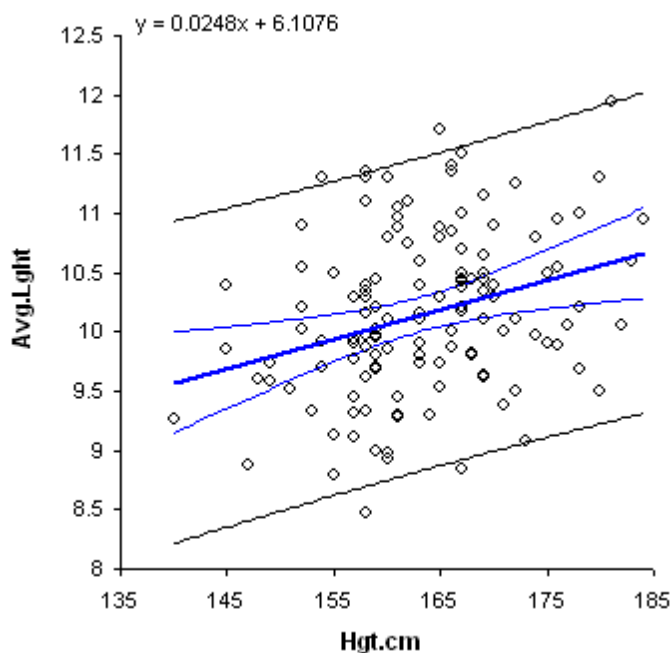
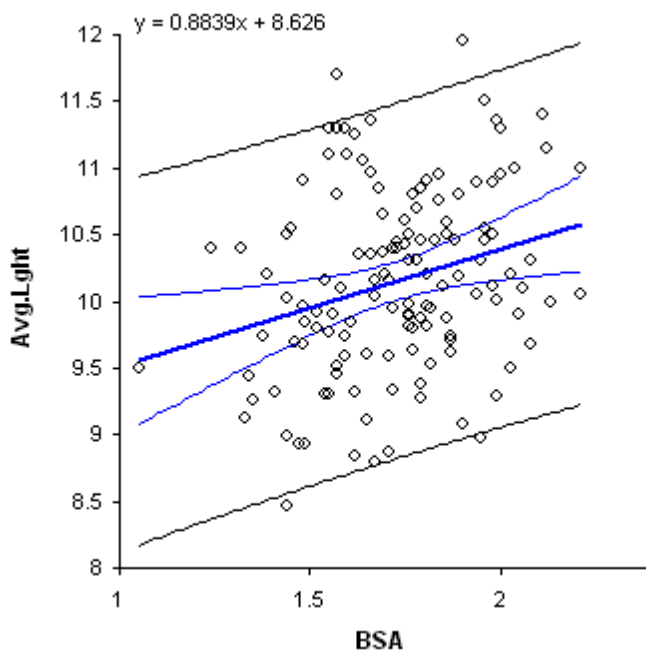


Fig. 2: Shows a simple linear regression equation predicting the subjects average renal length based on the Body Surface Area [0.8839BSA+ 8.6260].



3c. Working with a very close research colleague of mine, Dr Olugbenga Edward Ayodele (who had worked at the Ogun State University but now is at LAUTECH University), we looked at the pattern of advanced kidney diseases (chronic renal failure) over a ten year period in Sagamu and the environment (C.O. Alebiosu, Olugbenga O Ayodele, Adigun Abbas, Aina Olutoyin A. African Health Sciences 2006; 6(3): 132–138). The global burden of chronic kidney disease was subsequently reviewed by the authors in 2005 (Ethn Dis. 2005; 15: 418 – 423) and given an international perspectives in 2010 (Advances in Chronic Kidney Disease. 17(3); 215–224:2010) through a *personal invitation by Elsevier's*.

Our findings in the local study showed that the frequency of chronic kidney failure was 3.6% (182 of 5,107), more in males (1.42:1), with a peak age occurrence between 20–49 years, and a mean age of 40 years. This corresponds to the productive years of these patients leading to economic and human resource wastage. With most of the patients presenting late, we found also that the commonest causes were chronic glomerulonephritis 63(41.2%), hypertensive nephrosclerosis 40(26.1%) and diabetes mellitus 20(13.1%). The commonest symptoms were oedema, vomiting, reduced urinary flow and difficulty in breathing.

3d. Seasonality was demonstrated in the distribution of the CRF patients and has been reported earlier on by Kadiri, Arije, Salako. The month of January (dry season) recorded the highest admissions rate of 23 while September (wet season) recorded the lowest of 5 cases $p < 0.05$. This may be explained by the hot and dry climate that occurs during the day during the dry seasons. Much fluid is lost during this period, which may result in significant dehydration further deterioration in the precarious renal blood flow, hence acute deterioration of chronic renal disease during the dry season. It is also known that blood pressures are higher during the colder months (which occur at nights during the dry seasons) and may cause further deterioration in renal function.

Unlike in developed countries, most of our patients were able to afford only three sessions of haemodialysis because the total cost of dialysis is borne by the patients. In developed countries, the costs of dialysis are borne by the government with only small costs imposed on the patients as copay. The situation in most developing countries is different in that the patient provides the bulk of the fund for renal replacement therapy. This makes the treatment unavailable to most patients and also makes it impossible for patients to have long-term dialysis treatment. The majority of those with ESRD in developing countries die because of lack of funds, as very few can afford regular maintenance dialysis.

We recommended that pre-employment urinalysis screening and health education will go a long way in educating, increasing awareness and preventing the deleterious complications of uncontrolled hypertension, diabetes mellitus and glomerulonephritis. We recognised the need to embark on a massive health education campaign and screening of the study populace for early detection of kidney diseases. It was our belief then that the introduction of the National Health Insurance Scheme (NHIS) in 1984, is expected to make health services more available to the generality of the Nigerian populace.

Table 1: Published studies on chronic renal failure in south west Nigeria

	Akinsola et al.	Salako et al.	Arije et al.	Alebiosu et al.	Ayodele et al
Number of patients	100	67	141	153	71
Period of study (yrs)	3	3	3	11	2
Gender					
Male	64	55			52
Female	36	12			19
Mean age \pm SD (years)	33.4 \pm 12.9			39.6 \pm 14.8	43.3 \pm 18.9
Age range (years)	12 – 61		15 – 81	14 – 72	16 – 86
Aetiology of CRF (%)					
CGN	50 (50.0)	32 (47.8)		63 (41.2)	22 (31.0)
Hypertension	25 (25.0)	26 (38.8)		40 (26.1)	29 (40.8)
Diabetes mellitus		3 (4.4)		20 (13.1)	5 (7.1)
ADPKD		2 (3.0)			3 (4.2)
CPN		1 (1.5)			
HIVAN		1 (1.5)			
Miscellaneous	9 (9.0)				
Unclassified	16 (16.0)				6 (8.5)
Others		2 (3.0)			
Mean serum Cr (μ mol / L)	1167 \pm 849	2113		619 \pm 424	1420. 6 \pm 649.3
Range serum Cr(μ mol /L)	203 – 3253	309 – 4703			
Mean serum urea (mmol /L)		91.3		77.9 \pm 34.9	36.7 \pm 11.3
Mean serum K (mmol/L)		4.8		4.7 \pm 1.3	4.4 \pm 1.1
Serum bicarbonate (mmol/L)		19.3		17.8 \pm 9.9	22.2 \pm 3.1
Mean plasma Ca (mmol		1.87		1.87	2.02 \pm

/L)			±0.45	0.26
Mean serum inorganic phosphate (mmol / L)	2.45		2.13 ± 1.13	2.1 ± 0.9
Mean serum albumin (g/dL)			3.6 ± 1.2	
Mean parked cell volume (%)	21.6			20.0 ± 4.9
Number of patients dialysed		141	34	
Number of dialysis sessions				
≤ 3 sessions		86 (61.0)	21 (61.8)	
4 – 20 sessions		44 (31.0)	13 (38.2)	
≥ 21 sessions		11 (8.0)		
Mean SBP ± SD (mm Hg)			167.3 ± 15.5	
Mean DSP ± SD (mm Hg)			106.0 ± 28.6	

Culled with permission from Ayodele O.E. et al Tropical Journal of Nephrology 3: 103 – 109.

Key to Table. CRF – chronic renal failure, CGN – chronic glomerulonephritis, ADPKD – autosomal dominant polycystic kidney disease, CPN – chronic pyelonephritis, HIVAN – Human immunodeficiency virus associated nephropathy, Cr – creatinine, K – potassium, Ca – calcium, SBP – systolic blood pressure, DBP – diastolic blood pressure

Capacity building

Apart from the Olabisi Onabanjo University, Ago-Iwoye receiving the Nigerian University Commission Award for indigenous research in 2004 through my research activity, I have also won competitive training fellowship awards including:

- 1 World Diabetes Foundation Fellowship / International Diabetes Federation Fellowship Award 2003 (Groote Schuur Hospital, University of Capetown, Republic of South Africa);
- 2 International Society of Peritoneal dialysis Training Fellowship (2005) &
- 3 IDF-BRIDGES Translational Research Grants Course, Ghana, 2008.

Currently, I am the Lead Researcher of the following international research project grants:

1. World Diabetes Foundation sponsored SIDCAIN Projects in Nigeria (WDF 08-321): the Strategies for Improving Diabetes Care In Ogun state, Nigeria (www.sidcain.org) 2008 – 2012;
2. World Diabetes Foundation sponsored SIDCAIN Projects in Nigeria (WDF10-515 & WDF 10-515): the Strategies for providing quality Diabetes Care In Oyo states, Nigeria (www.sidcain.org) 2010–2014;

As well as two local research projects:

3. Research Grant Project awarded by CARGS (Competitive Agricultural Research Grant Scheme) of the Agricultural Research Council of Nigeria (ARCN) – RFA 5 No. 33 (Assessment of the efficacy of flavanol – rich cocoa powder intake in the management of malaria, diabetes and hypertension), in collaboration with the Cocoa Research Institute of Nigeria, Idi-Ayunre, Ibadan (2011–2014).
4. FGN ETF Sponsored Research Project: Strategies for prevention of chronic kidney diseases in Osogbo, Osun State by the the ‘UniOsun Asymptomatic Renal Population Study Group’ (2011 – 2012).

Training of Postgraduate Students

I have contributed in training numerous undergraduate doctors and 19 medical doctors in different areas of postgraduate medicine, 6 (31.5%) of which are now medical consultants (Drs Osalusi, Kolapo, Raimi, Olunuga, Ayanlowo and Adebayo); 4 are currently outside Nigeria doing well in the UK (Dr Otulana & Shobowale), USA (Dr Opelami) and RSA (Dr Jolaoso), while 8 are currently Senior Registrars. Three (3) are currently pursuing Nephrology career. Two are still junior residents.

Workshops, Conferences, etc

In the course of my professional career, I have attended many conferences both locally and outside the country including Ghana (2006), World Diabetes Congress (Cape Town 2003 & Dubai 2011), World Congress of Nephrology (2006, Italy), 3rd Diabetes India Conference (2006). I was one of the organizing secretaries of the 2nd International conference on Drug Discovery and Therapy in Dubai (Feb 1st – 4th, 2010). I have hosted major scientific conferences and regional meetings, the most recent one being the 2nd SIDCAIN conference co-hosted by the College of Health Sciences, UNIOSUN, and the Academy of Sciences for developing world (TWAS) this year (Feb 1–3) in this auditorium and attended by the ex-President Aremu, Okikiolu Olusegun Obasanjo, *GCFR*, and an international Guest Lecturer Oladimeji Oyeleye (a Chartered Physiotherapist from Northern Ireland), as well as 18 resource persons from the South West of the country.

Conspiracies against the kidney

Advanced Oxford English Dictionary defines the word ***Conspiracy*** as a secret plan to do something harmful, and an ***Accomplice*** was defined as a person who helps another to do something harmful.

A huge variety of systemic conditions can affect the function of the kidneys, from acute illnesses to drugs and chronic illnesses including non-communicable diseases. Chronic kidney failure is a devastating medical, social and economic problem for the patients, their families and the country as a whole.

The global burden of Chronic Kidney Disease (CKD) is enormous. The World Health Report 2002 and Global Burden of Disease project reports show that diseases of the kidney and urinary tract caused one million deaths in 2002, ranking twelfth in the list of major causes of death. The global incidence and prevalence of CKD have increased exponentially in the last decade and now assume epidemic proportions in both developed and developing countries.

In Nigeria, like in many other developing countries, accurate data on the prevalence of CKD is lacking principally due to unavailability of national renal registry. Small scale community studies in Nigeria found that the prevalence of CKD in adults range between 19% and 30%. Hospital prevalence studies reported that End Stage Renal

Failure (Advanced CKD) represents 6–12% of medical admissions. A major peculiarity in the epidemiology of CKD in Nigeria is the fact that it affects young individuals aged between 25–40 years, which are the most economically productive years.

In Nigeria, Hypertension and chronic glomerulonephritis are the leading causes of CKF. The prevalence of hypertension in Nigeria is between 15 to 27.7 % and studies have shown that blood pressure control rates are poor. It is therefore not surprising that hypertension is still the leading cause of CKF in Nigeria.

Diabetes accounted for 13.1 % of the causes of CKF in the population studied by Alebiosu et al (2005). Though diabetes is the leading cause of CKF in most developed countries, it accounts for between 2 to 13.1 % of CKF in Nigeria from available reports. However, an increasing trend of diabetes as a cause of chronic kidney failure in Nigeria was reported by Alebiosu et al (2006). This is likely due to the fact that many Nigerian patients with diabetes are surviving longer due to improvement in the medical care and are now developing diabetic kidney disease which tends to set in with increased duration of diabetes.

There has not been any significant change in the various causes of chronic kidney failure in the country over time. This fact should provide the country with a template for planning prevention programme towards reducing the

burden of CKD. Preventive measures should involve targeted screening for urinary abnormalities, hypertension, diabetes, cardiovascular disease and other recognizable risk factors for CKD and the development of comprehensive team-based care for patients with known hypertension and diabetes.

Chronic Kidney Disease continues to affect our people in their productive years and most patients continued to die due to their inability to sustain dialysis treatment in view of the high cost. Thus, the country is being robbed of its work force and families are being deprived of bread winners with dire negative social consequences for the families and the nation. Unfortunately, there is no national renal registry. Therefore, the exact incidence and prevalence of chronic kidney failure in the population, its burden on the health care system and the outcome of these patients are not known. This is the conspiracy of non-communicable diseases against the kidney with the accomplices being hypertension and diabetes.

The way forward – Recommendations

Much of the NCD burden can be averted through primary prevention and the complementary identification of early stage disease, combined with effective treatment of existing conditions. Unless concerted action is taken, the rising financial burden of NCDs will reach unmanageable levels. As the United Nations Secretary-General said

during the World Economic Forum in January 2011, the United Nations High-Level Meeting on NCDs in September 2011 is a chance to broker an international commitment that puts NCDs high in the development agenda, where they belong. The *2008–2013 Action Plan for the Global Strategy for the Prevention and Control of Non-communicable Diseases* provides a roadmap for addressing NCDs at the country and global levels by:

a) Surveillance and monitoring of NCDs and their determinants

Surveillance is critical to generating the information needed for NCD-related policy and programme development, to support monitoring and evaluation of their implementation to re-appraise the progress made, and for appropriate legislation for NCD prevention and control. This includes monitoring exposures (risks and determinants), outcomes (morbidity and mortality) and health-system responses (interventions and capacity).

b) Reducing risk factors and preventing NCDs with emphasis on interventions that are affordable and known to work

NCDs can be averted and their outcomes improved through proven population-based interventions. Priority should be given to the implementation of practical and affordable *best buy* interventions, such as tobacco and

alcohol taxation; smoke-free public spaces and workplaces; comprehensive bans on tobacco advertising, promotion and sponsorship; salt reduction measures; HBV vaccination; and low-cost multiple drug management of people at high risk. Other affordable interventions that should be considered include: policy interventions to promote healthy diets, such as bans on trans-fat; measures to reduce marketing of foods and non-alcoholic beverages to children; taxes on foods high in sugar, salt and fat; subsidies to promote fruit and vegetable consumption; and interventions to increase physical activity at the population level. For cancer control, health interventions that should be considered include the reduction of exposure to identified environmental and occupational carcinogens.

As mentioned before, the active engagement of non-health sectors is a prerequisite for implementing effective NCD preventive interventions. The principle of 'health in all policies' has been the focus of public health advocacy that dates back to when safe drinking-water, sanitation, and decent housing were key result areas for health promotion and disease control. The same principle now applies to NCDs in that many of the social determinants of NCDs lie outside the scope of the health sector.

c) Strengthening health care for people with NCDs

A major challenge in many countries is to promote access to essential standards of health care for people living with NCDs. Effectively managing specific NCDs requires well functioning and equitable health systems that are capable of providing long-term care that is person –centred, community-based and sustainable. Challenges exist for all six of the WHO building blocks of effective health systems: governance, finance, health workforce, health information, medical products and technologies, and health service delivery. While universal coverage of primary healthcare services is a shared overall objective, the following approaches can be specifically considered by health policy-makers in relation to NCDs:

- a. Ensure that national health strategies and plans are based on accurate situation analysis and include NCD prevention and control as part of the national health priorities.
- b. Strengthen political commitment to NCD prevention at all levels of government.
- c. Integrate the delivery of basic health care for NCD prevention and management into primary health care systems.
- d. Expand the package of essential NCD-related interventions available at the primary healthcare level by including a prioritized and realistic set of high-impact interventions to detect and treat common conditions.

- e. Address health system gaps, such as by strengthening surveillance systems, strengthening the capacity of the health workforce, and improving access to essential medicines and technology.
- f. Remove financial barriers to essential health-care interventions, such as user fees, and reduce out-of-pocket payments. Consider financing mechanisms including the use of tobacco or alcohol taxation to increase revenues for primary health care.

d) Integrating NCD prevention in national programmes for sustainable development

The NCD epidemic has a substantial negative impact on human development. Unless serious action is taken, the rising financial burden of NCDs will reach levels that are beyond the capacity of even high-income countries to manage. There is evidence to indicate that NCDs may impede progress towards the UN Millennium Development Goals. NCD prevention should therefore be included as a priority in national development initiatives and related investment decisions. Depending on the national situation, strengthening the prevention and management of NCDs should also be considered an integral part of poverty

reduction and other development assistance programmes.

Reversing the epidemic of NCDs also requires engagement from civil society and the business sector. Civil society institutions are uniquely placed to mobilize political awareness and support for NCD prevention and control. Civil society institutions and non-governmental organizations contribute to capacity-building. At a global level, non-governmental organizations have grouped together to collectively support and influence global tobacco control efforts and, more recently, widen NCD prevention control, providing a strong platform for advocacy and action. The role and capacity of civil society should be supported and strengthened at the national and international levels.

e) Prevention of chronic kidney diseases

- i. Targeted screening of people at risk for kidney diseases.
- ii. Positive lifestyle modification/ behavioural changes.
- iii. Healthy dietary pattern.
- iv. Avoidance of infections – Sexually transmitted infections and urinary tract infection.

- v. Need to cultivate positive attitude to pre-school and pre-employment screenings, routine medical checkup.

Table 2: Best interventions for NCD Prevention and Control (Global status report on non-communicable diseases 2010).

Risk factor / disease	Interventions
Tobacco use	<ul style="list-style-type: none"> • Tax increases • Smoke-free indoor workplaces and public places • Health information and warnings • Bans on tobacco advertising, promotion and sponsorship
Harmful alcohol use	<ul style="list-style-type: none"> • Tax increases • Restricted access to retailed alcohol • Bans on alcohol advertising
Unhealthy diet & physical inactivity	<ul style="list-style-type: none"> • Reduced salt intake in food • Replacement of trans fat with polyunsaturated fat • Public awareness via mass media about diet and physical activity
Cardiovascular disease (CVD) and diabetes	<ul style="list-style-type: none"> • Counseling and multi-drug therapy for people with a high risk of developing heart attacks and strokes (including those with established CVD) • Treatment of heart attacks with aspirin
Cancer	<ul style="list-style-type: none"> • Hepatitis B immunization to prevent liver cancer (<i>already scaled-up</i>) • Screening and treatment of pre-cancerous lesions to prevent cervical cancer

Conclusion

The screening and preventive strategies to be used in tackling non-communicable diseases with its attendant effects on the kidneys must be well suited to the particular environment taking into consideration factors such as health awareness and the availability of human and material resources. Considering the complex interrelationship between chronic kidney disease and other chronic non-communicable diseases, a screening program for hypertension and diabetes must occur at the primary care level and preferably be incorporated into the Millennium Development Goals.

Reducing the prevalence of the risk factors of CKD will involve lifestyle modifications such as maintaining a healthy weight, eating adequate amount of fruits and vegetables, exercising regularly, and quitting smoking. Also, the detection and elimination of harmful herbal remedies will be important in Africa and many developing countries. The celebration of World Kidney Day as well as World Diabetes Day in many countries has allowed raising awareness on the need to detect and treat kidney diseases early and also to screen for its risk factors such as hypertension and diabetes.

Several compelling reasons are pushing countries toward tackling NCDs. From both a social and political standpoint, action is warranted. Chronic NCDs, by definition, require treatment over a much longer period

than acute communicable diseases. Given existing health financing patterns in many low- and middle-income countries, the costs associated with chronic NCDs are likely to weigh more heavily on those least able to afford them. From the health sector perspective, the future increase in burden and risk factors will both put a strain on services delivery and stress on budgets. NCDs are “silently” becoming a heavy burden for many countries. *Now* is the time to Act so as to prevent more organ conspiracies.

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Mr Vice-Chancellor Sir, I appreciate fully the Vice-Chancellor of the Olabisi Onabanjo University, Prof. Wale Olaitan as well as the Registrar Mr Femi Oyewole and DVC, Prof. (Mrs) Femi Oyewo, for allowing me to run a research grant project (of which I am the Principal Investigator) with colleagues in the Department of Medicine, OOU, as well as the Cocoa Research Institute of Nigeria (CRIN), Idi-Ayunre, Ibadan even while in UNIOSUN.

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I also thank the indefatigable Senior Assistant Registrar in the Corporate Affairs Unit of the University, Mr Marcus

Awobifa, for the hard work and support in ensuring that today's occasion became a reality and successful.

So far in this University, I have enjoyed the love, support, friendship and diligence of many people. I express my deep appreciation to all academic and non-academic staff in the College of Health Sciences. To you all, I say – the best is yet to come to the UNIOSUN College of Health Sciences.

I would like to mention a few of my clinical teachers and mentors, who contributed immensely towards my postgraduate training. I wish to appreciate Prof. Solomon Kadiri and Prof. E Akang, who both taught me the rudiments of medico-pathological research and supervised my dissertation for the Fellowship of the West African College of Physicians in Nephrology, as well as Prof. Wale Akinsola. Others include Prof. Sola Ogunniyi, Prof. Onadeko, Prof. Adeuja, Prof. Falase, Prof. Ayo Arije, to whom I am grateful.

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profession, my senior friends who have played significant roles and made lofty contributions to my life. Top on the list are Prof. Dare Olatawura, Prof. Adolphus Somorin, Prof. Femi Adelowo, during my stay at the Olabisi Onabanjo University, as well as Dr Oluwarantimi Babatope Familoni and Dr Olatunde Odusan. I thank all members of staff and students of the College of Health Sciences, Olabisi Onabanjo University, for their friendliness during my stay at OOU.

Out of all my research collaborators, a man stood out – Dr Olugbenga Edward Ayodele. Together we gave our best to the renal unit of the University College Hospital, Ibadan in the late nineties. Today, he is a Reader in Medicine at the LAUTECH University. I recall the days that you spent in my closet during our joint efforts at preparing manuscripts for international publications, with Funmi taking care of your children.

I am also grateful to the members of the SIDCAIN Research Team, who jointly have put the project on the world map – with the recent citation in International Diabetes Federation (IDF) 2010 report, citation in World Diabetes Federation 2010 report as well as coming 5th position in the 2011 World Diabetes Day Global Competition, and occupying the major part of the IDF Africa stand at the 2011 Dubai World Diabetes Congress.

I thank my Pastor and spiritual father – Pastor Babatunde Mabinuori of the Rhema Chapel Int'l Churches, Oluyole, Ibadan; Men's Fellowship Coordinator, Brother Bode Olabanji, as well as my departmental head – Bro Tunji Adelekan. My appreciation will not be complete if I fail to recognise my neighbours who we all live together under the Progressives Landlords Association under the leadership of Eng. Kayode Adeleye.

I stand here to publicly declare that God has shown me unmerited favour throughout my life. I say this because of the type of family I come from and the type of family I am living in now. I seize this opportunity to appreciate my parents; Mama Hephzibah Omolola Alebiosu and Late Pa Michael Akinola Alebiosu, of blessed memory. I would like to thank my mother, who is here present to witness this joyous occasion.

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Mr Vice-Chancellor Sir, I will end this lecture by quoting from *Winston Churchill (1874–1965): if you have knowledge, let others light their candles with it*. For those who helped to proof read the manuscript as well as providing with some of the references used, including my mentor, Prof. Solomon Kadiri and my colleague Dr Olugbenga Ayodele, as well as Dr Akin Omisore, I am most grateful.

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