Editorial Articles

Burden Of Diabetes Mellitus

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INTRODUCTION

Diabetes mellitus is one of the most common non- communicable diseases. It is a chronic metabolic disorder characterized by a chronic high level of blood sugar leading to disturbance in carbohydrate, fat and protein metabolism resulting from deficiency in insulin secretion, action or both[1]. It is the commonest endocrine disorder worldwide, with increasing prevalence worldwide and about 382 million people are currently living with diabetes mellitus, 97% of these people have type 2 diabetes mellitus[2]. The attendant mortality is even more worrisome as someone dies of diabetes mellitus every 6 seconds. The complications, mortality and the socio-economic burden are preventable with early diagnosis and adequate management. The burden of diabetes mellitus is now of epidemic proportion and consequently of public health importance, it poses a major socio-economic challenge and far reaching psycho social ramifications. The incidence and prevalence is on the rise worldwide especially in the developing economies of the world. Since late presentation and the insidious onset of diabetes and its complications are linked to the burden, screening and diagnosis could aid in its reduction.

WHO recommends that the diagnosis be made by fasting blood sugar greater than or equal to 7.1mmol/l (126mg/dl) or random blood glucose greater than or equal to 11.1mmol/l (200mg/dl) or 2 hours post prandial greater than or equal to 11.1mmol/l and recently the use of glycalated hemoglobin (HbAic) of greater than or equal to 6.5%[3], all these are simple test.

EPIDEMIOLOGY

Diabetes mellitus is rising globally, driven both by population growth and increasing age specific prevalence. In the year 1985 the number of people living with diabetes mellitus was about 30 million people it increased to 230 million people by 2006 which is about 6% of worlds' population[3]. The International Diabetes Federation estimated that 382 million people are currently diabetic and projected that there will be 55% rise by 2035 to total number of 592 million people[2]. More than 75% of these people will live in developing economies by 2025 and 80% of them by 2035 as compared to the early 1990s when they were 60% of them. The countries with the highest number of diabetes worldwide are India, China and United States of America. The age distribution in developing nations especially sub Saharan Africa is between the ages of 49 to 65 years as compared to western countries that are predominately people older than 65 years old[2].

In Africa, with changing lifestyle, dietary changes, sedentary lifestyle and obesity all fueled by urbanization and industrialization the prevalence of diabetes is rising in the mid-1980s, Africa diabetes mellitus prevalence was lower than 1.4% with the exception of South Africa where it was 3.6%, just within a decade it jumped to 6%. In 1994 the prevalence was 3 million people, though Africa ranked least in terms of region with diabetes prevalence, with 19.8 million people but this will double by 2035 and Africa will have the highest rate of increasing diabetes in the world. The numerical distribution of diabetes currently by region is as follows, 56 million European, the Middle East and North America share between them 35 million people, western pacific has 138 million diabetic and Africa with 20 million[2].

There has been a steady rise in the incidence of diabetes mellitus in Nigeria, although a nationwide data that is desirable for the Nigerian diabetic population is still lacking. A hospital survey in 1981 by Osuntokun et al put the prevalence on diabetes mellitus at 0.4%[4], in 1991 National survey by Akinkugbe et al put the prevalence of 2.2% as the national average with rural Mangu in plateau the lowest having a prevalence of 0.5% while Lagos island in Lagos state had the highest prevalence which was 7%[5]. Recent studies by Puepet in Jos gave a prevalence of 10.3%[10], other regional studies in Nigeria has put the prevalence between 3%-5%. Evidently the rise in diabetes mellitus in Nigeria can be attributed to lifestyle changes, overweight, obesity, physical inactivity alcohol consumption and dietary changes[10].

THE BURDEN

Apart from the increasing prevalence especially in sub Saharan Africa which has one of the largest low income class, who are more vulnerable, the attendant chronic complications of diabetes are sequelae that are more worrisome, a considerable number of these chronic complications are preventable. These chronic complications include the micro vascular and macro vascular angiopathy which result in blindness, renal disease, cerebrovascular diseases and foot disease which are the commonest cause of non-traumatic amputations in adults. These complications increase with increasing age, lower educational status, diabetes duration, pre-existing hypertension, increasing waist circumference or central obesity.

A person dies of diabetes every 6 seconds[2], all from myriad of complications that accompanies the late diagnosis and management of diabetes. Vulnerability is highest in type 2 DM, because of the numerical strength and insidious onset. Diabetes is associated with age related mortality. Cardio vascular complication is the main cause of death worldwide. Death is less in people diagnose in their 70s compared to those diagnose in their 40s[2]. The fact that DM reduces life expectancy does not translate directly to an ability to predict death rate in these patient.

SOCIO-ECONOMIC BURDEN

The financial burden of diagnosing and managing diabetes, treating the complications pose serious challenges to the patient, health care providers and policy makers. The high cost is borne more by the patient who lives in the lower economic strata because the disease is prevalent here and further plunge into more despair by poor education limiting their abilities to make wealth and care for themselves. Three broad categories costs have been recognized, a direct cost on health care, indirect cost and productivity cost. The direct cost involves the out of pocket payment for purchase of medications, glucometer and visitation to health care facility. The indirect costs are incurred by the relatives or money spent on nursing home. Productivity costs are loss

of earnings due to morbidity and mortality.

The case of DM is expensive compared to other range of chronic illnesses. The International Diabetes Federation assessed that the world spend close to USD 376 billion in 2010 and USD 548 billion in 2013 for prevention and treatment of diabetes mellitus (11% of total health spending worldwide)[2]. The American Diabetes Association newly released research estimated that cost of managing diabetes in the United States has risen from USD 174 in 2007 to USD245 in 2013, this represent a 41% increase over a five years period[6].

In Nigeria where the per capita income is $560, and where a large proportion of the population lives on less than a dollar a day,(recent data put it at two dollars per day) the cost of managing the disease lies solely on the patient who lacks any form of health insurance and lives below the poverty line. In a study at OAUTHC , Ile-Ife, the out of pocket payment and indirect cost of treating DM , the average cost of insulin , oral hypoglycaemic, other drugs and laboratory tests was $51, 986 over a 8 months for a patient[7]. In another study at the UCH [9], it wasfound that a patient pays a mean price of 183.5 naira daily on drugs which is about $1.04 a day. In another study by Ogbera et al in Lagos, the monthly mean cost of insulin for those who earned an income was 5212.8 Nigeria Naira(equivalent then to 33.1 USD), it was concluded that persons on a minimum wage could spend 29% of their monthly income on procurement of insulin. Generally, mean expenditure for diabetes mellitus in Nigeria is 129 USD per person [8].

The intangible cost of DM on the patients and their family cannot be quantified, a psycho social dimension that needs exploration. The care givers that are not health providers but family members bear burden especially complicated diabetes. The emotional stress of taking care of a stroke patient or a blind one is far reaching while also the quality adjusted life years of the patient is poor too.

CONCLUSION

The futures for burden of diabetes will more than double, it is even projected that the lives and financial loss from diabetes will soon over take HIV/AIDS. This trend can only be curtailed by lifestyle modifications, early diagnosis and adequate treatment to prevent the complications. The trend for Africa and especially for Nigeria in light of the growing urbanization and aging population must be arrested and reversed. The cost for prevention, early diagnosis and advocacy for positive lifestyle modification will be economically suited for a country that is not spending enough. The tide of double burden of communicable and non-communicable needs to be stemmed, so that the productive population will not be lost unnecessarily to preventable deaths.

In developing countries where up to 80% or more of the people must pay for their healthcare out of their own pocket, many must choose between their health and feeding and clothing their family, therefore access to appropriate medication and care should be a right and not a privilege

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