CAUSES OF DEATH, OTHER THAN THAT DUE TO PROSTATIC CANCER, IN MALES AS SEEN IN IBADAN, SOUTH WESTERN NIGERIA: A PROSPECTIVE POST-MORTEM STUDY

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ABSTRACT

Introduction: A Prospective cohort study was undertaken to determine causes of death, other than that due to prostatic cancer, in males.

Patients and method:

Seventy nine patients aged between 30 and 86 years who died of non-prostate related diseases were randomly selected for systematic examination of the prostate glands. In addition, full post-mortem examinations were performed on each case and the causes of death were determined. The only exclusion criterion was the presence of a clinical diagnosis of prostate cancer.

Results:

Amongst this cohort of men, cardiovascular diseases were the commonest cause of death as a group accounting for 38% of cases. This consisted of hypertensive heart disease, coronary artery disease and cardiomyopathy. Next were the violent death/unnatural death group (24.1%) which included severe head injury following road traffic accident, gunshot injury, burns, electrocution, traumatic rupture of the spleen with associated liver rupture during sporting activity, and severe haemorrhage following surgery. Other causes included neoplastic diseases (10.1%), gastrointestinal diseases (10.1%), metabolic/endocrine diseases (7.6%) and infection related causes (6.3%).

Conclusion:

In contrast to the previous teaching about infection in Africa, cardiac diseases appear to have become the number one cause of death in adult male Nigerians and neoplastic diseases as well as metabolic/ endocrine disorders have also become rather important causes of mortality. All these causes have significant environmental association and suggest negative adaptations in more recent times.

Keywords: Cause of death, Nigeria, Mortality, Environmental factors

Introduction:

Hospital generated data on cause-specific mortality data are important to monitor trends in mortality over time. Records show that Nigeria is one of the several countries that lack recent data on adult mortality despite the presence of World Health Organization Regional Office for Africa (WHO-Afro) [1]. Nigeria also has in her constitution enabling laws on compulsory registration of deaths but the implementation of these laws is defective. Based on this bottle neck, it is not possible to generate comprehensive population-based mortality data in Nigeria. However, hospital generated data on causes of death is used in the absence of community based study on causes of death for a consistent and objective evaluation of health care services as documented by World Health Organization (WHO) [2].

This is a prospective study performed to determine the incidence of sub clinical prostatic disease amongst adult male patients seen at autopsy at the University College Hospital, Ibadan. A good knowledge of disease pattern, morbidity and mortality is a veritable tool for effective and efficient health planning system. There is paucity of such information in Nigeria and some parts of Africa. Data generated from hospital based disease records are used in replacement for community generated information on causes of death. However, with good monitoring, the hospital generated data on causes of death will be a good nidus for initiating improvement in our health economic planning. This study therefore was aimed at determining the causes of death among the male patients aged 30 years and above who presented to the hospital and died for other reasons other than prostate related diseases. The information generated could be a useful guide to understanding the prevalent disease patterns in our environment and formulating appropriate public health control means.

Methods:

Seventy nine patients aged between 30 and 86 years who died of non-prostate related diseases were randomly selected for systematic examination of

the prostate glands. Full post-mortem examinations were performed on each case and the causes of death were determined. Information available on clinical presentation and manner of death were extracted from the case notes and matched with the autopsy findings. The only exclusion criterion was the presence of a clinical diagnosis of prostate cancer or any form of prostatic disease. Primary causes of death, demographic information such as the age, sex, and time of death were obtained from the case notes. Causes of death were grossly classified into violent death/unnatural, cardiovascular, gastrointestinal, infections, endocrine/metabolic, neoplastic, and miscellaneous. Diseases like pancreatic pseudocyst, epilepsy and severe asthma were grouped under miscellaneous. The patients' ages were grouped in decades namely: 30-39 years, 40-49 years, 50-59 years, 60-69 years, 70-79 years, and 80 years and above. Statistical Packaging for Social Sciences (SPSS Inc. Chicago IL) version 18.0 was used in analysing the data obtained and simple descriptive statistics were used. Confidentiality maintained.

Results:

Amongst this cohort of men, cardiovascular diseases were the commonest cause of death as a group accounting for 38% of cases (figure 1). This consisted of hypertensive heart disease, coronary artery disease and cardiomyopathy. Next was the group with violent death/unnatural death (24.1%) which included severe head injury following road traffic accident, gunshot injury, burns, electrocution, traumatic rupture of the spleen and liver with massive haemo-peritoneum, and surgical haemorrhage. Other causes of death included neoplastic diseases (10.1%), gastrointestinal diseases (10.1%), metabolic/endocrine diseases (7.6%) and infection related causes (6.3%). Table 1 presents an analysis of specific causes of death under these various subheadings.
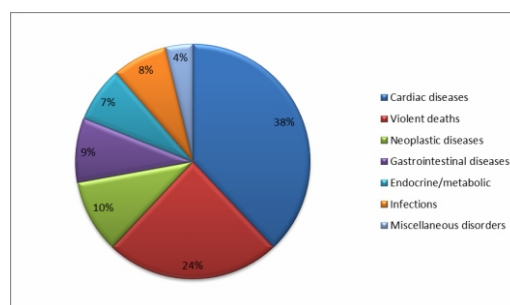

Figure 1- Causes of death in the 79 cases

Table 1 - Causes of death in the study population

CAUSES OF DEATHS	NUMBER OF CASES
Cardiovascular diseases	**(30)**
Hypertensive heart disease	22
Coronary artery heart disease	5
cardiomyopathy	3
Violent/un-natural deaths	**(19)**
Post operative haemorrhage due to bilateral lower limb lymphoedema	1
Road traffic accident with severe head injury	11
Traumatic splenic and liver rupture with severe haemorrhage	1
Burns	3
Electrocution with 40% partial thickness burns	1
Gunshot injury with sepsis	1
Blunt force trauma to head	1
Gastrointestinal diseases	**(8)**
Bleeding peptic ulcer disease	1

Hypovaemic shock secondary to diarrhoea	1
Perforated peptic ulcer disease	5
Ruptured appendix with peritonitis	1
Infections	**(5)**
Miliary tuberculosis	1
Tetanus	1
Septic shock/ wound infection	1
Aspiration pneumonitis and pneumonia	1
Pyogenic meningitis	1
Endocrine/metabolic disorders	**(7)**
Chronic kidney disease with deranged electrolytes	2
Hyperglycaemic coma	1
Liver cirrhosis and metabolic encephalopathy	4
Neoplastic diseases	**(8)**
Lung cancer	1
Craniopharyngioma	1
Colonic adenocarcinoma	1
Multiple myeloma	1
Lymphoproliferative disorder	1
Primary liver cell carcinoma	1
Glioblastoma	1
Gastric adenocarcinoma	1
Miscellaneous disorders	**(3)**
Pancreatic pseudocyst	1
Epilepsy	1
Severe asthma	1
TOTAL	**79**

Table 2: Causes of death in relation to age

Disease category	Age in decade						Total
	30-39	40-49	50-59	60-69	70-79	80-89	
Cardiovascular diseases	2	3	9	10	4	2	30
Violent death/unnatural death	9	5	5	0	0	0	19
Neoplastic diseases	2	1	3	2	0	0	8
Gastrointestinal diseases	2	4	1	1	0	0	8
Endocrine/Metabolic diseases	1	3	1	1	0	0	6
Infectious diseases	1	0	3	1	0	0	5
Miscellaneous	2	0	1	0	0	0	3
	19	**16**	**23**	**15**	**4**	**2**	**79**

The causes of death with respect to the age of patients are shown in Table 2. It is apparent that deaths due to cardiovascular diseases spans all through the age range (30-86 years) and about two-thirds of all deaths caused by cardiovascular diseases occurred in the sixth and seventh decades of life. All the deaths due to violence occurred between the 4th and 6th decades of life.

Discussion:

The fact is that hospital-generated data on causes of death may not absolutely represent the causes of death in the general population. However, hospital data may function as a basis for policy formulation in the absence of data obtained from community-based studies and they are found to be useful indicators of the health status of the community[3]. This study provided information on hospital related death over the study period and this can be extrapolated to give the magnitude and the pattern of death in the socio-political region served by the hospital. Only adult male patients who are aged 30 years and above are captured in this study.

Industrialization, civilization and globalization have created multiple health burdens for developing countries such as Nigeria. The aftermath of these is a paradigm shift from initial high prevalence rate of communicable diseases[4] to increased prevalence in non-communicable diseases (NCDs)[5] and lifestyle-related diseases which are closely linked to economic development and modernization. These newer trend in disease pattern are believed to be strongly associated with the changing lifestyle patterns, availability of foods rich in fat, sugar and salt and increased alcohol and tobacco consumption. High prevalence rates for circulatory disorders (hypertension, coronary artery diseases, strokes and diabetes mellitus) are known to have high association with changing lifestyle patterns among the urban duellers.

The percentage of deaths due to cardiovascular diseases was noted to be as high as 38% as compared to infections which was 8%. This contrasts the findings recorded by Adeolu et al in a study performed at Obafemi Awolowo University Teaching Hospital, Ile-Ife from 1978 to 2006 to determine the pattern of death in a Nigerian teaching hospital. They reported the various causes of death and infection was found to be the commonest cause of death at that period. Korte et al in their study on strategies to maintain health in the Third World stated that, the range of diseases in

tropical countries can be explained more readily by the socio-economic situation than solely by the climate thereby adding to the evidence of Adeolu et al findings[6,7]. In a prospective study performed by Iliyasu et al from 2005-2008 which analysed the mortality rate and causes of death at Aminu Kano Teaching Hospital, Kano, northern Nigeria; HIV/AIDS (8.3%), Septicaemia (6.8%), and cerebrovascular disease (6.3%) were found as the most common causes of mortality[8].

According to 2004 WHO report on causes of death, the mortality rate due to non-communicable diseases was noted to be highest in Europe, where nearly two thirds of all deaths at ages 1559 years for low- and middle income countries were associated with cardiovascular diseases, cancers and other non-communicable diseases. Mortality rates due to non-communicable diseases were second highest in the African Region, followed by the Eastern Mediterranean and South-East Asia regions, and lowest in the high-income countries. Injury mortality ranges from 0.5 (high income countries) to 1.5 (European Region) per 1000 adults aged 1559 years. The proportion of deaths in this age group due to injuries ranged from 22% (high-income countries) to 29% (the Americas) of all deaths at ages 1559, except in Africa, where it is 13%[9].

The Preliminary Data for 2010 on deaths by National Vital Statistics puts the leading causes of death as: diseases of heart, malignant neoplasms and chronic lower respiratory diseases[10]. These figures are comparable to the data obtained in this study with the cardiac diseases being the leading cause of death followed by deaths due to violence, neoplastic diseases, gastrointestinal diseases, metabolic/endocrine diseases and infection related causes. The emergence of non-infectious disorders such as cardiovascular disorders as the main cause of mortality in men aged 30 years and above is worrisome. This calls for intensified researches into identifying early symptoms, risk factors and means of prevention in order to reduce morbidity and mortality due to cardiovascular disorders

Conclusion:

In contrast to the previous teaching about infection in Africa, cardiac diseases appear to have become the number one cause of death in adult male Nigerians and neoplastic diseases as well as metabolic/endocrine disorders have also become rather important causes of mortality. All these causes have significant environmental association

and suggest negative adaptations in more recent times.

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