

ORIGINAL PAPER

The Changing Pattern of Urological Cancers in Zambia

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ABSTRACT

Introduction

The University Teaching Hospital Lusaka (UTH) is the main reference hospital and the only national reference laboratory in Zambia it has a referral area of 1.3 million people.

Objectives

The purpose of the study was to examine the pattern of Urological malignancies seen at the UTH in Lusaka. In particular the pattern of Cancer of the bladder.

Method

A retrospective study of Urological cancers in Zambia was done, with the ICD (10) classification.

Results

A total of 8829 cancers were diagnosed over the 15 year study period, 749 (8.4%) were Urological malignancies. The male to female ratio of the Urological cancers was 10.7 to 1. Cancer of the prostate was the most common urological malignancy (54.6%), followed by cancer of the bladder (21.1%) and cancer of the penis (18.6%). The histological type of bladder cancer was squamous cell carcinoma (46.2%), transitional cell carcinoma (23.4%), adenocarcinoma (22.2%) and other types (8.2%). The majority of patients (79%) with bladder cancer were between 56 and 65 years of age. There was an increasing incidence of squamous cell cancer of the bladder over the last 15 years.

Conclusion

Twenty years ago prostate cancer comprised only 26% of Urological malignancies; it now makes up 55% of the Urological cancers diagnosed in Zambia over the last 15 years. In contrast, cancer of the penis, kidney and testis have shown no change in frequency distribution compared to 20 years ago. There has been an increase in squamous cell type of Bladder observed over the last 15 years.

INTRODUCTION

Zambia is a landlocked country in south central Africa. The national cancer registry has been poorly resourced and was estimated to capture approximately 10-15% of cancers nationwide¹.

The University Teaching Hospital (UTH) in Lusaka is the main reference hospital in Zambia. Up to 90% of all biopsy samples obtained nationally are sent for reviewing and reporting to the UTH Pathology Laboratory^{1,2}.

Previous studies done at the hospital showed that Urological malignancies represented 12% of all cancers seen at the UTH^{1,2}.

OBJECTIVES

The purpose of the review was to examine the pattern of Urological malignancies seen at the UTH in Lusaka from January 1990 through December 2005, a period of 15 years, to examine in particular cancer of the bladder, looking at the histological type, age and trends over time and to compare the findings with previous studies done at UTH.

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METHODS

Data on all Urological cancers diagnosed histologically at the UTH Pathology laboratory from January 1990 to December 2005 were retrospectively reviewed, the data were entered into a database and analysed. Key parameters included patient age, sex and year of diagnosis. The International Classification of Disease (ICD) 10 was used. The specimens collected were fixed in formalin, embedded in paraffin wax and microtome sectioning was done. The slides were routinely fixed with hematoxylin and eosin. All slides were reported by a team of three consultant pathologists at the UTH. Bladder cancer was further analysed to determine the histological type. The data are descriptive and no statistical analysis was performed.

RESULTS

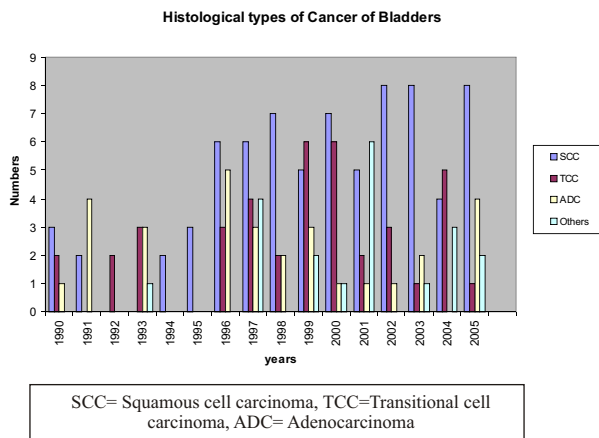
A total of 8829 cancers were diagnosed over the 15 year period, of which 749 (8.4%) were Urological.

The male to female ratio of the Urological cancers was 10.7 to 1 (685 male and 64 female patients). The frequency distribution of Urological cancers was as follows: prostate 409 (54.6%), bladder 158 (21.1%), penis 139 (18.6%), kidney 32 (4.3%) and testis 11(1.5%).

The male to female ratio for cancer of the bladder was 2.0 to 1 (107 male and 51 female patients). The histological type of bladder cancer was squamous cell carcinoma in 73 (46.2%) cases, transitional cell carcinoma in 37(23.4%), adenocarcinoma in 35 (22.2%) and other types in 13 (8.2%).

The age distribution showed that 79% of patients with cancer of the bladder were between 56 and 65 years of age

There was an increasing proportion of squamous cell carcinoma over the 15 year period from 50% in 1990 to a peak of 62% in 2001 and 2002 (Fig. 1).



Discussion

Urological cancers in this study represented 8.4% of all cancers seen at the UTH Lusaka. Previous studies two decades ago at the same institution showed a higher proportion (12%)². This represents a proportional decline in Urological cancers for reasons which are uncertain. In the United Kingdom Urological cancers represent 16.5% of all new malignancies seen annually³. The male to female ratio of 10.7 to 1 in this study is similar to that in other studies^{2, 3, 4}. This may reflect the fact that cancers of the prostate, penis and testis occur only in men, whereas bladder and kidney cancers are known to have a male: female predominance of approximately 2:1.

Prostate cancer is currently the most common type of urological malignancy in Zambia, as in other African countries⁴. In the late 1980s, bladder cancer was the most common, representing 51% of all Urological cancers in Zambia, while cancer of the prostate comprised 26%^{2,5,6,7}. However, during the last 20 years prostate cancer has increased to 55% of Urological malignancies diagnosed in Zambia. This finding may be related to an actual increased incidence, or may be related to better health education programs and improved Urology services such as PSA testing and prostatic biopsy⁸. Cancers of the penis, kidney and testis have shown no change in frequency distribution compared to 20 years ago^{2,5,6,7}.

The histological type and the male to female ratio of bladder cancer in Zambia corresponds to the pattern of bladder cancer seen in developing countries, where it presents in younger patients, runs an aggressive course and is largely of the squamous cell type^{9,10,11}. In contrast, the histological type of bladder cancer in developed countries is transitional cell carcinoma in up to 90% of cases and presents in the 8th decade of life^{12, 13}. This study found a high proportion of squamous cell carcinoma (46%) and the majority of patients (79%) presented in the 6th decade of life.

Over the last 15 years there has been an increasing proportion of squamous cell carcinoma of the bladder relative to transitional cell and adenocarcinoma of the bladder. Perhaps this can be attributed to the increasing incidence of HIV infection, lower tract stone disease or Schistosomiasis in the population¹⁴. It may also be due to the extension of Urological services (cystoscopy and histological diagnosis) to indigent rural populations, where the incidence of squamous cell carcinoma is likely to be higher than in affluent urban populations. In some other African countries the incidence of squamous cell cancer of the bladder seems to be decreasing relative to transitional cell carcinoma.⁹

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