THE STUDY ON PROFILE OF UROLOGICAL MALIGNANCIES AMONG PATIENTS ADMITTED TO UROLOGICAL SURGICAL WARDS AT MUHIMBILI NATIONAL HOSPITAL



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THE STUDY ON PROFILE OF UROLOGICAL MALIGNANCIES AMONG PATIENTS ADMITTED TO UROLOGICAL SURGICAL WARDS AT MUHIMBILI NATIONAL HOSPITAL

FROM March 2010 TO February 2011

By;

Yohana Paulo Masonda (MD)

A Dissertation Submitted in Partial Fulfilment of the Requirements for Award of The Degree Masters of Medicine in General Surgery of the Muhimbili University of Health and Allied Sciences.

CERTIFICATION

The undersigned certifies that he has read and hereby recommends for acceptance by Muhimbili University of Health and Allied Sciences a dissertation entitled; **"Profile of Urological Malignancies in Patients admitted at Muhimbili National Hospital Urological unit Wards from March 2010- February 2011."**Submitted in partial fulfilment of the requirements for the Degree Master of Medicine in General Surgery of the Muhimbili University of Health and Allied Sciences.

Signature …….

Dr Albert M. Kategile (MD, MMED, Msc Urology)
(Supervisor and Lecturer at MUHAS)

Date ……

DECLARATION & COPYRIGHT

I, **Yohana Paulo Masonda**, declare that this is my original work and that it has not been presented nor will it be presented to any other University or learning Institutes for a similar or any other degree award.

Signature ……. Date ……..

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DEDICATION

This work is dedicated to my parents, Paulo Masonda, Mary Mabula and to my wife Dorice Charwe and my children Ally, Simon and Mary. Without them I would have not accomplished this task.

ABSTRACT

Cancer is a big problem in many countries of Africa who are without resources to cope with it. This study dealt with the urological cancers involving; renal, urinary bladder affecting male and female, and prostate, penile and testicular cancers only affecting males.

Urological cancers are becoming a major problem in both men and women, and the most affected age group is between 51-70 years.

Objectives

The aim of the study was to determine the profile of urological malignancies, demography, and clinical presentation among patients admitted at Muhimbili National Hospital.

Methods

It was a cross-sectional, prospective hospital-based descriptive study conducted at Muhimbili National Hospital adult urological wards to consented patients whom were admitted due to urological symptoms and signs for the period of March 2010 – Feb 2011.

The study was performed through personal interviews**,** by structured questionnaires, investigated by PSA, biopsies, cystoscopy, ultrasound, and Computed Tomography Scan.

Results

A total of 306 patients were interviewed, among those prostate cancer were 138(45%), bladder cancer were 130(42%), renal cancer 26(9%), penile cancer were seven and testicular cancer five patients. The mean age of patients was 50.3 years, with the range of 14-91 years. The Male to female ratio was 3.2: 1.

Conclusion

According to above data prostate cancer was the commonest cause of admission, closely followed by bladder cancer. Others still have low prevalence. The commonest histology for prostate cancer was adenocarcinoma by 91%, other types accounting for 9%. Bladder cancer

were; squamous cell carcinoma 54%, transitional cell carcinoma 18%, adenocarcinoma 15%, other types showed 13%. For renal cancer, renal cell carcinoma 65%, and urothelial cell carcinoma 35%. Penile cancer- squamous cell carcinoma 100%, and Testis - germ cell carcinoma 60%, others (non-germ cell tumours) 40%.

Majority of these patients came with advanced stage, which gave big challenges for their management.

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Abbreviation/Acronyms:

BSO	-	Bilateral Subcapsular Orchiectomy
CT Scan	-	Computed Tomography Scan
DSM	-	Dar es Salaam
GPs	-	General Practitioners
HPV	-	Human Papilloma Virus
AIRC	-	Internation Agency for Research on Cancer
ID	-	Identification
IVU	-	Intravenous Urogram
KCMC	-	Kilimanjaro Christian Medical Centre
LUTS	-	Lower urinary tract symptoms
MMed	-	Master of Medicine
MSc	-	Master of Science
MNH	-	Muhimbili National Hospital
MUHAS	-	Muhimbili University of Health and Allied Sciences
MSD	-	Medical Store Departments
NCI	-	National Cancer Institute
ORCI	-	Ocean Road Cancer Institute
PG	-	Page
PSA	-	Prostate Specific Antigen
RRR	-	Radical Retropubic Prostatectomy
SCC	-	Squamous Cell Carcinoma
SEER	-	Surveillance-Epidemiology, and End Results
SHBG	-	Sex Hormone Binding Globulin
SOR	-	Standard Odds Ratio
SPSS	-	Statistical Package for the Social Sciences
TCC	-	Transitional Cell Carcinoma
TURP	-	Trasnsurethral Resection of the Prostate
U.S	-	United States

USS	-	Ultrasound Scan
UTH	-	University Teaching Hospital
WHO	-	World Health Organisation

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

Renal cell carcinoma

In 2009, approximately 57,800 people were diagnosed and about 13,000 died from RCC in the United States [1] . This represents approximately 2 percent of the total cancer incidence and mortality. Worldwide, the mortality from RCC exceeds 100,000 per year [2] .

The prevalence varies widely from region to region with the highest rates observed in Scandinavia and North America [3] . Although the incidence is lower in Africa, whites and blacks appear to be equally affected in the United States [4] .

The Renal Cell Carcinoma has increased over time. Between 1975 and 1995 in the United States, for example, the incidence rates per 100,000 person-years increased by 2.3, 3.1, 3.9 and 4.3 percent annually for white men, white women, black men, and black women, respectively [5]

Furthermore, the size of tumors at presentation has decreased and more patients are presenting with stage I disease. In an analysis of over 29,000 cases from the Surveillance, Epidemiology and End Results (SEER) database, this increased prevalence has been associated with a steady decrease in the average size of tumours at presentation (6.7 versus 5.9 cm in 1988 and 2002, respectively) [6 - 9] .

Part of the increase in prevalence may be explained by the greater number of asymptomatic tumors detected as a result of widespread use of noninvasive abdominal imaging modalities. In the 1970s, approximately 10 percent of RCCs were discovered incidentally, compared to 60 percent in 1998 [10] . Whether all of the asymptomatic RCCs diagnosed through improved imaging are clinically relevant is uncertain [11] .

Gender and age — Previously, RCC was reported to be at least twice as frequent in men as women. However, more recent data suggest that this gap has narrowed [1,7,12] .
RCC occurs predominantly in the sixth to eighth decade of life; it is unusual in patients under 40 years of age [13,14] and rare in children [15,16] . It has been estimated that a 40 year old man's lifetime risks for developing or dying from RCC are 1.27 and 0.51 percent, respectively [17] .

Mortality — The five year survival rate of patients with kidney cancer has doubled over the last fifty years, from 34 percent in 1954 to 62 percent in 1996 [10] . The prevaleence of RCC has risen at a rate that is threefold higher. [18]. As noted above, this improved survival and case-fatality rate is mostly due to earlier diagnosis and surgical treatment. This explanation is supported by the observation that the percentage of organ-confined tumors increased from 47 to 78 percent at Memorial Sloan Kettering from 1989 to 1998 [19] . The observed improvement in survival also may be due in part to the treatment of small RCCs, the natural history of which has not been completely defined [11, 19] .

Risk factors — A number of environmental and clinical factors have been implicated in the etiology of RCC [20] . These include smoking, occupational exposure to toxic compounds, obesity, acquired cystic disease of the kidney (typically associated with dialysis), analgesic abuse nephropathy, and genetic predisposition.[21]

Pathology — The average RCC diameter is approximately 6 cm [22]. Although lesions smaller than 3 cm were previously thought to represent benign adenomas, it is now clear that even small tumors frequently represent carcinomas [23] . As a result, the distinction between a malignant and a benign growth based upon size alone is no longer made. Instead, basic histologic criteria are used to discriminate between a malignant or benign growth. Thus, all solid renal masses require resection for accurate diagnosis unless the presence of a metastatic lesion can be established by biopsy.[24]
Previously, RCCs were classified by cell type and growth pattern [25] . This classification has recently changed to more accurately reflect the morphology, growth pattern, cell of origin,

histochemical, and molecular basis of the different types of adenocarcinomas. Five distinct subtypes have been identified: Clear cell (75 to 85 percent of tumors), Chromophilic (papillary) (10 to 15 percent), Chromophobic (5 to 10 percent), Oncocytic (uncommon) Collecting duct (Bellini's duct) (very rare) .[26-32]

Bladder Carcinoma

Bladder cancer is the most common malignancy involving the urinary system. Urothelial (transitional cell) carcinoma, is the predominant histologic type in the United States and western Europe, where it accounts for approximately 90 percent of bladder cancers. In other areas of the world, such as the Middle East, nonurothelial histologies are more frequent, at least in part to the prevalence of schistosomiasis.[33]

Studies of urothelial bladder cancer have identified multiple risk factors, the most important of which are cigarette smoking and various occupational exposures. Numerous other factors have also been identified that may play an etiologic role in some cases of urothelial cancer, although interpretation of the evidence is frequently confounded by exposure to tobacco use.[34]

Geographic distribution — Geographically, there is a wide variation in the prevalence of urothelial cancer of the bladder with western Europe and North America having the highest incidence and eastern Europe and Asian countries having the lowest rates. Even within the United States there are substantial regional differences in the prevalence of bladder cancer, with the highest in the Northeast and with Hawaii and Utah having less than one-half the prevalence. These differences are only slightly attenuated after controlling for smoking [34]

Many bladder cancer patients do not die of their disease but do experience multiple recurrences. As a consequence, there are a relatively large number of people alive with a history of bladder cancer. In middle-aged and elderly men, bladder cancer is the second most prevalent malignancy after prostate cancer [35, 36, 37]

Age, sex, and race — Bladder cancer is typically diagnosed in older individuals, with a median age at diagnosis of 69 years in men and 71 in women [38, 39]

In addition to differences in prevalence, sex and race also affect the stage at presentation and prognosis. Although the overall prevalence of bladder cancer is lower in women and African-Americans, these groups have more advanced stage tumors at presentation compared to white men [39] .

The prevalence increases with age from 142 to 296 per 100,000 in men aged 65 to 69 years and 85 and over, respectively, and from 33 to 74 per 100,000 in women in the same age groups. The age of onset is younger in current smokers than in never smokers [40]

Although extremely rare, bladder cancer can be seen in children and young adults, where it usually presents with low-grade, non-invasive disease [41] .

There are racial and ethnic variations in bladder cancer prevalence. In the United States, white males have the highest risk with roughly twice the prevalence seen in African-American and Hispanic men [42] .

Postulated explanations for these racial and ethnic differences include variations in acetylator phenotypes among different racial/ethnic groups and occupational differences among minorities that influence exposure to industrial carcinogens [43]

Etiology and risk factors — Environmental exposures account for most cases of bladder cancer. The surface epithelium (urothelium) that lines the mucosal surfaces of the entire urinary tract is exposed to potential carcinogens that are either excreted in the urine or activated from precursors in the urine by hydrolyzing enzymes. This "field cancerization" effect is one hypothesis to explain the multifocal occurrence that is a characteristic feature of urothelial carcinomas of both the urinary bla

dder and the upper urinary tract [44-47] .

However, in the majority of cases, multifocal urothelial carcinomas are monoclonal . This supports their presumed origin from a single genetically altered cell, which then spreads through the urothelium via intraluminal seeding or intraepithelial migration. This is referred to as the monoclonality hypothesis. Although the monoclonality hypothesis appears to conflict with field cancerization, both mechanisms are probably operative in urothelial carcinogenesis, as has been shown with squamous carcinogenesis in the oral cavity [48 -51]

Prostate cancer

Prostate cancer is the most common cancer in American men. An estimated 186,000 cases diagnosed in 2008 and 27,000 deaths occured[1] . The clinical behavior of prostate cancer ranges from a microscopic, well-differentiated tumor of little clinical importance, to an aggressive cancer with substantial invasive and metastatic potential.

Prostate cancer has been detected with increasing frequency, due in part to the widespread availability of serum prostate specific antigen (PSA) testing, although the incidence was increasing even before the introduction of PSA testing. The incidence peaked in 1992, declined between 1992 and 1995, and has been rising about 1.1 percent annually since 1995. The reasons for the increasing incidence are not known; both genetic and environmental factors have been implicated. Incidence is higher in blacks than in whites in the US[1, 52]

The manner in which prostate cancer is diagnosed today is different from that of the pre-PSA era. In the past, prostate cancer was first detected by digital rectal examination (DRE) or because of urinary symptoms. Since then, prostate cancer is usually asymptomatic at presentation, and detected most commonly by an elevated serum PSA. While symmetric enlargement and firmness of the prostate on DRE is most typical of benign prostatic hyperplasia (BPH), asymmetric areas of induration or frank nodules are suggestive of prostate cancer.[53]

When symptomatic, prostate cancer can cause urinary urgency, nocturia, frequency, and hesitancy; these symptoms are also present in men with BPH, and are more likely to be caused by BPH than cancer.[53]

New onset erectile dysfunction should always raise suspicion for prostate gland pathology since an enlarging gland may encroach upon periprostatic tissue in which lies the neurovascular bundle involved in erectile function. Hematuria and hematospermia are uncommon presentations of prostate cancer but their presence in older men should prompt its consideration in the differential diagnosis. A small percentage of men present with symptoms of metastatic disease (eg, bone pain or, rarely, spinal cord compression).

The diagnosis of prostate cancer is most often suspected after finding an elevated serum PSA. Less commonly, a diagnostic evaluation is instituted due to abnormal findings on DRE. Prostate biopsy is the gold standard for prostate cancer diagnosis.[53]

Digital rectal examination and transrectal ultrasound provide the initial assessment of the extent of local disease. Magnetic resonance imaging (MRI) of the prostate gland utilizing an endorectal probe may provide additional information about the likelihood of seminal vesicle involvement or extraprostatic extension in men who are thought to have clinically localized disease.[53]

Prostate cancer tends to progress slowly and have a long, natural history. Therefore, treatment for localized prostate cancer is generally offered to patients with at least a 10-year life expectancy. Patients with high-grade tumors (Gleason score of 8 to 10) may represent an exception to this rule; without treatment, they are at a significantly higher risk of developing symptomatic disease and dying from their disease. Therefore, in these patients, curative therapy should be considered regardless of life expectancy. The treatment options for localized prostate cancer can be broadly categorized as involving surgery or radiation therapy.[53]

The most commonly performed surgical procedure is a radical retropubic prostatectomy (RRP). The most significant complications associated with surgery are urinary incontinence and erectile dysfunction, which occur in approximately 5 to 10% and 14 to 30% of cases, respectively. During RRP, care should be taken to avoid injuring the urinary sphincter located just distal to the apex of the prostate. The neurovascular bundles that run along the posterolateral border of the prostate contain the cavernous nerves, which are responsible for erectile function. Care should be taken to separate the neurovascular bundle from the prostate

and preserve it during surgery. Other less frequently employed surgical options include perineal radical prostatectomy and cryotherapy. [54, 55]

The first-line therapy for metastatic prostate cancer is androgen-ablative hormone therapy. Since Charles Huggins won the Nobel Prize in 1966 for discovering the therapeutic effects of androgen ablation on metastatic prostate cancer, the fundamental principles for treating metastatic prostate cancer have not changed. Androgen-ablation is accomplished by performing bilateral orchiectomies or by administering gonadotropin-releasing hormone (GnRH) agonist. Testosterone synthesis by the Leydig cell in the testicles is stimulated by luteinizing hormone (LH) from the pituitary. The release of LH requires a pulsatile discharge of GnRH. Therefore, a constant GnRH stimulation paradoxically results in inhibition of LH and testosterone. Nonsteroidal antiandrogens such as flutamide and bicalutamide are often added to block the low levels of androgens produced by the adrenal medulla.[56]

Penile Carcinoma

Penile cancer is uncommon, but, when it is diagnosed, it is psychologically devastating to the patient and often presents a challenge to the urologist. Benign, premalignant, and malignant conditions must be differentiated. Penile squamous cell carcinoma, the most common penile malignancy, behaves similarly to squamous cell carcinoma in other parts of the skin. Metastasis, which occurs with this type of carcinoma when the diagnosis or treatment is delayed, is usually lethal. This is a slow-growing cancer in its early stages, and because it seldom interferes with voiding or erectile function, patients do not complain until pain or a discharge from the cancer occurs. By this time, the cancer has usually progressed from being superficial to invasive.[57]

Patients with carcinoma of the penis tend to delay seeking medical attention, with 15-50% delaying medical attention for more than 1 year from onset. This delay is attributed to embarrassment, guilt, fear, ignorance, and personal neglect. Patients often try to treat themselves with various skin creams and lotions. These may appear to be effective for a time, which further delays the diagnosis and worsens the prognosis.[57]

Penile neoplasms are rare in the United States, Europe, and other industrialized countries. The incidence of these malignancies is much higher in parts of South America, Africa, and Asia.[58]

Primary epithelial squamous cell carcinoma (SCC) accounts for 95 percent of penile malignancies. Other histologic types about 5 in 100 penile cancers (5%) are adenocarcinomas, melanoma, soft tissue sarcomas, urethral tumors, lymphomas, basal cell carcinomas, metastases, these types are extremely rare [59] .

Squamous cells are the flat, skin-like cells that cover the surface of the penis. Squamous cell cancers can develop anywhere on the penis, but the most common sites are the head of the penis (glans) and the foreskin (in uncircumcised men). This type of cancer usually grows slowly over many years. Squamous cell cancers that are found early are usually curable. Before squamous cell cancer develops, the cells may go through pre-cancerous changes. Very early pre-cancerous cell changes are called carcinoma in situ (CIS).
Verrucous carcinoma is a rare type of squamous cell penile cancer that looks like a large wart. It is a slow growing tumour that rarely spreads to other parts of the body.
Adenocarcinoma means that the cancer started in the glandular cells that produce sweat in the skin of the penis.[60]

Penile cancer is typically a disease of older men, with a mean age at diagnosis of 60 years in one series [61, 62] . However, it can occur in younger men [63] . As an example, 25 of 100 men were less than 50 years of age in a prospective study of 100 cases from a single institution in London seen between 2002 and 2005 [64] .

Risk factors — Multiple factors are associated with an increased risk of penile cancer. These include a number of premalignant lesions of the penis. Multiple factors associated with an increased risk of penile cancer have been identified. The most important of these include the

absence of circumcision at an early age, the presence of phimosis, HPV infection, and HIV infection. Other factors that have been identified include smoking and PUVA therapy for psoriasis.[65 – 70]

Clinical presentation — The clinical presentation of penile carcinoma varies greatly, from benign appearing lesions to clinically obvious invasive carcinoma with autoamputation of the penis. This wide variability may be explained by delays in seeking medical attention. The interval between a man's initial recognition of a penile lesion and his subsequent presentation to a physician averages 10 months, and up to one-half may have a lesion for longer than one year prior to presentation [71, 72]

Testicular cancer

Testicular cancer is the most common solid malignancy affecting males between the ages of 15 and 35, although it accounts for about 1 percent of all cancers in men [1] . Germ cell tumors (GCTs) account for 95 percent of testicular cancers; they are divided evenly between seminomas and nonseminomatous GCTs. Testicular germ cell tumors are rare prior to puberty [73] .

Other testicular malignancies include sex cord-stromal tumors, including Leydig cell and Sertoli cell tumors, gonadoblastoma, and tumors of other cell types presenting in the testes such as lymphoma, carcinoid tumors, and metastatic carcinoma[74]

Testicular tumors usually present as a nodule or painless swelling of one testicle, which may be noted incidentally by the patient or by his sexual partner. Approximately 30 to 40 percent of patients complain of a dull ache or heavy sensation in the lower abdomen, perianal area, or scrotum, while acute pain is the presenting symptom in 10 percent. In another 10 percent, the presenting manifestations of testicular cancer are attributable to metastatic disease; symptoms vary with the site of metastasis. Approximately 5 percent have gynecomastia. [75]

The presentation is different in Leydig cell tumors, which account for 2 percent of testicular tumors. Only 10 percent are malignant, and the clinical presentation is dominated by

symptoms of excess estrogen and reduced testosterone. There is a bimodal distribution of these tumors; they are found in 6 to 10 year old boys who present with precocious puberty, and in 26 to 35 year old men who present with a testicular mass, gynecomastia, impotence, and loss of libido. Sertoli cell tumors are even less common and also present with symptoms of excess estrogen.[76, 77]

Epidemiology- It was estimated that 8400 new cases of testicular cancer were diagnosed in the United States in 2009. Because of dramatic advances in therapy, only 380 deaths from testicular cancer occured.[1]

The factors responsible for the increased prevalence of testicular cancer are unclear. A variety of hypotheses have been proposed, including in utero exposure to diethylstilbestrol (DES), earlier exposure to viruses or other environmental agents, and testicular trauma [78 - 82] . However, these factors fail to completely account for increase in testicular cancer.

The observed increase has been restricted to white males. Testicular cancer is less common in African Americans, with the prevalence in African Americans estimated to be one-fourth that of whites [83] .

The worldwide prevalence is lowest in Africa and Asia, and highest in the Scandinavian countries, Germany, Switzerland, and New Zealand [84] . However, this may be changing. In a review of data on testicular cancer prevalence from nine registries of the NCI SEER database, the testicular cancer among black men started to increase in 1988, and doubled between 1988 to 1992 and 1998 to 2001 . The seminoma rose by twice as much as nonseminoma (124 versus 64 percent increase). The reasons for this increase are unknown.[85]

Risk factors - There are a number of known risk factors for testicular neoplasia, including cryptorchidism, a personal or family history of testicular cancer, infertility or subfertility, and HIV infection. All of these risk factors predispose to the development of carcinoma in situ and invasive testicular cancer.[86 -92].

CHAPTER TWO

2.1: LITERATURE REVIEW:

Cancer accounted for 12.5% of all deaths worldwide in 2005; by 2020, new cases of cancer are projected to reach about 15 million every year, 70% of which will be in developing countries, including over one million in the African Region. Cancer is a leading cause of death around the world. WHO estimates that 84 million people will die of cancer between 2005 and 2015 without intervention.[1]

Each year on 4 February, WHO supports International Union Against Cancer to promote ways to ease the global burden of cancer. Preventing cancer and raising quality of life for cancer patients are recurring themes.

The following are cancer's profile as done by others in different countries;

The pattern of urological malignancies in Zambia, as seen at the University Teaching Hospital (UTH) in Lusaka:

Bowa et al, 2005, performed a retrospective study of urological cancers in Zambia, based on histopathology reports of specimens reviewed at the UTH Pathology Laboratory in Lusaka, Zambia, between January 1990 and December 2005.In total, 8829 cancers were diagnosed during the study period, of which 749 (8.5%) were urological malignancies affecting the kidney, bladder, prostate, testis or penis. 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 bladder cancer (21.1%) and penile cancer (18.6%). The histological type of bladder cancer was mainly squamous cell carcinoma (46.2%), transitional cell carcinoma (23.4%) and adenocarcinoma (22.2%); other types (8.2%) included rhabdomyosarcoma, small cell carcinoma and lymphoma. The majority of patients (79%) with bladder cancer were between 56 and 65 years of age[93]

Another study done in Indonesia also was looking in the Pattern of urological malignancy, in 10 years between 1976 and 1985, 202,111 patients were admitted to Hasan Sadikin Hospital, Bandung. Of these, 211 (0.1%) had a urological malignancy. Bladder tumors were commonest and constituted 39%. Testicular tumors accounted for 24%, renal tumors 18%, prostatic carcinoma 13% and penile tumours 6%. Bladder tumours were predominantly transitional cell carcinoma; only 2 patients presented with squamous cell tumors associated with bladder stones. In 50 cases of testicular tumor, 72% were seminomas and 22% were embryonic cell carcinomas. Wilms' tumours accounted for 21 of 39 cases of renal malignancy; the other 18 were renal carcinomas [94, 95]

Kidney Cancer

Around 208,500 new cases of kidney cancer are diagnosed in the world each year, accounting for just under 2% of all cancers.[96] The highest rates are recorded in Northern America and the lowest rates in Asian and African regions.[97]

In the United States in 2008, there were around 54,390 new cases of kidney cancer and 13,010 deaths from the disease.[98] . In the UK, 8,757 people were diagnosed with kidney cancer in 2008, and the disease caused 3,848 deaths.

The most recent estimates of incidence of kidney cancer suggest that there are 63,300 new cases annually in the European Union. In Europe, kidney cancer accounts for nearly 3% of all cancer cases.[99]

In the UK kidney cancer is the eighth most common cancer in men (5,377 new cases diagnosed in 2008), and the ninth most common cancer in women (3,380 new cases in 2008), giving a male:female ratio of over 3:2. The number of cases of kidney cancer in men in the UK has doubled from 7 per 100,000 to 14.8 per 100,000 between 1975-1977 and 2006-2008. In women the rates have more than doubled over the same period, rising from 3.2 to 7.5 per 100,000. [100]

The prevalence of kidney cancer is also increasing in the United States. This is thought to be a real increase, not due only to changes in the way the disease is diagnosed. [101]

Globally the prevalence of kidney cancer varies considerably among different populations and regions . The rates are highest in Western and Eastern Europe, North America, Australia and Scandinavia, intermediate in Southern Europe and Japan, and low elsewhere in Asia, Africa and the Pacific [102] . Within Europe, there is also a considerably variation in prevalence rates. In the United States, prevalence rates are somewhat higher among the black than among the white population [5, 103] . The estimated numbers of new kidney cancers (ICD-9 189) in 2000 were about 36,000 in North America and 46,000 in the European Union, and in the Scandinavian countries about 3,000 [104]

.

Bladder Cancer

In 2008, in the United States there were approximately 537,428 men and women alive who had a history of cancer of the urinary bladder -- 398,329 men and 139,099 women. It is estimated that 69,250 men and women (52,020 men and 17,230 women) will be diagnosed with and 14,990 men and women will die of cancer of the urinary bladder in 2011. From 2004-2008, the median age at diagnosis for cancer of the urinary bladder was 73 years of age .. Approximately 0.1% were diagnosed under age 20; 0.4% between 20 and 34; 1.7% between 35 and 44; 7.4% between 45 and 54; 18.0% between 55 and 64; 27.2% between 65 and 74; 32.0% between 75 and 84; and 13.2% 85+ years of age.[105].

In 2009, there were 71,000 new cases of bladder cancer diagnosed in the United States (53,000 in men and 18,000 in women), with approximately 14,000 deaths. From 1985 to 2005 the number of bladder cancers diagnosed in the United States increased by over 50 percent, while from 1975 to 1996 the five-year survival rate for those diagnosed with bladder cancer increased from 75 to 81 percent. Mortality rates in several western European countries have shown similar downward trends over the last two decades, but are still increasing in some eastern European countries [1,33,34]

Dollin et al reported that, Smoking status and increased amount and duration of smoking were associated with a strong increased risk of urinary tract cancer. Smoking cessation and age at first exposure were negatively associated with the risk of urinary tract cancer. The age- and gender-adjusted SORs for current and former cigarette smokers compared with those for nonsmokers were 3.33 (95% confidence interval [CI], 2.63–4.21) and 1.98 (CI, 1.72–2.29), respectively. Even though the component studies differed in methodology, the results were rather consistent.[106]

Smoking can only partially explain this higher incidence**.** **[107]** One other reason is that the androgen receptor which is much more active in men than in women, plays a major part in the development of the cancer.[112]Certain medications, such as analgesic and cytotoxic drugs, have also been associated with the causation of bladder cancer..[109, 110]

In Tanzania, Kitinya et al in a 1985 study, showed that, Squamous cell carcinoma is the commonest type of bladder malignancy in most areas of northern Tanzania. Of 172 cases of bladder cancer recorded in 9 years, 72% were squamous cell carcinomas. Of these, 46% had Schistosoma haematobium eggs in sections taken from tumour tissue. The geographical distribution of this tumour closely corresponded to the prevalence of Schistosoma haematobium infection. The Mt. Kilimanjaroarea have a low schistosomiasis infection. Although transitional cell carcinoma is rare in all regions of northern Tanzania, the relative frequency of bladder cancer in the Mt Kilimanjaro area was only one-third of that seen in other regions. [111].

An estimated 386,300 new cases and 150,200 deaths from bladder cancer occurred in 2008 worldwide. The majority of bladder cancer occurs in males and there is a 14-fold variation in prevalence internationally. The highest incidence rates are found in the countries of Europe, North America, and Northern Africa. Egyptian males have the highest mortality rates (16.3 per 100,000), which is twice as high as the highest rates in Europe (8.3 in Spain and 8.0 in Poland)

and over 4 times higher than that in the United States (3.7). The lowest rates are found in the countries of Melanesia and Middle Africa[112, 113]

Smoking and occupational exposures are the major risk factors in Western countries, whereas chronic infection with Schistosoma hematobium in developing countries, particularly in Africa and the Middle East, accounts for about 50% of the total burden. [37, 43, 51, 64] A majority of bladder cancers associated with schistosomiasis are squamous cell carcinoma, while those associated with smoking are transitional cell carcinoma. [114]

It is easier to interpret trends in bladder cancer mortality rates than trends in prevalence rates because trends in mortality are affected less by differences in reporting of low-grade tumors. In the United States, mortality rates have stabilized in males and decreased in females from 1997 through 2006, and in Europe declines have been observed in most countries since the 1990s, due in part to reductions in smoking prevalence and reductions in occupational exposures known to cause bladder cancer. [115]

Bladder cancer continues to be the most common cancer among males in Egypt, despite the large decreases in schistosoma-associated bladder cancer.. This is likely the result of a reduction in schistosoma-related bladder cancers being offset by an increase in tobacco-related bladder cancers [116]

In Egypt, bladder cancer has been the most common cancer during the past 50 years. Interestingly, SCC is the most common histopathological type in Egypt, constituting 59 to 81% of reported bladder cancers between 1960 and 1980. Chronic bladder infection with schistosomiasis has been the most important risk factor in Egypt, in contrast to smoking and occupational exposures in Europe[114]

Bladder cancer is the commonest primary male cancers in Indonesia, with an increasing prevalence of 15% per annum in the last decade [94] This is similar to the rest of the world, in which bladder cancer is the 9th most common malignancy and the 13th most common cause

of cancer death worldwide,with an estimated 357,000 new cases and 145,000 deaths annually. The global incidence of bladder cancer has also been increasing steadily in the past ten years [117]. Transitional cell carcinoma of the urinary bladder (bladder TCC) represents the most common histological type, accounting for 80% of all bladder cancers in Indonesia, [95] and over 90% in other countries like Malaysia, Europe and United States. [118 - 121]

Carcinoma of bladder represents 38.5 percent of all urological cancers gathered by the Tanzanian Cancer Registry from 1969 to 1973. [122]. The regional distribution corresponds fairly well with the distribution of schistosomiasis in Tanzania.[123]. Schistosoma haematobium infection ranks second only to malaria as a cause of disease morbidity. In northern Tanzania, commonly the Lake Victoria Zone, it affects approximately 60 to 80 percent of the population. The highest incidences of bladder cancer are recorded from the Mwanza, Coast, Tanga, Mbeya, and Mtwara regions. The male to female ratio is 2: 1 (These findings contrast with those of an earlier report that showed a reverse sex ratio pattern of 1:2.4[111, 124, 125]

Prostate Cancer

A study report by Angwafo, in Yaounde-Cameroon, showed that there are intra- and interracial differences in prostate cancer prevalence and mortality rates worldwide. The environment and migration patterns seem to influence the disparities in cancer statistics. The lowest prevalence rate is recorded in Chinese, followed by other Asians, South Americans, Southern Europeans, and Northern Europeans, in ascending order. However, people of African descent have the highest incidence so far. Until recently, African Americans in Alameda County (California) in the United States had the highest reported prevalence (160/100,000). The prevalence of 314/100,000 recently was reported in African Caribbeans from Jamaica. These high rates contrast with the low prevalence rates reported in continental (Sub-Saharan) Africa. Angwafo et al have reported higher age-adjusted prevalence rates in Yaounde, Cameroon (93.8/100,000). They highlighted the importance of diagnostic methodology, availability of and access to diagnostic techniques and trained manpower, and adjustments for the age distribution of populations when comparing prevalence rates between regions. The

great disparity in cancer statistics over large geographic areas and races has oriented studies toward genes and gene products susceptible to environmental risk factors such as diet, ultraviolet rays, and cadmium, which may be associated with or are causative of prostate cancer. Randomized studies on suspected risk factors and promoters of prostate cancer need to be conducted worldwide. However, caution is in order when inferences are made comparing populations with access to health care to those without.[126]

In Tanzania, Mwakyoma et al in 2010, published a study to correlate histopathological grades of prostate cancer by Gleason's scoring system and pretreatment PSA levels
in patients with prostate cancer. During the period of study, 113 patients were diagnosed to have carcinoma of the prostate. The mean age at diagnosis was 68 years. The predominant histological type was adenocarcinoma (99.1%). The commonest type (45.1%) had moderately differentiated adenocarcinoma. Sixty one percent (61%) of patients had Gleason's score of 5-7 and 81.5% of patients had significant elevation of pretreatment PSA of > 20.0 ng/ml.[127]

In 2011, Quraishi et al published a study, showing that, African American men had among the highest prostate cancer prevalence rates in the world yet rates among their African counterparts are unclear. Also theycompared reported rates among black men of Sub-Saharan African descent using data from the International Agency for Research on Cancer (IARC) and the National Cancer Institute Surveillance, Epidemiology, and End Results Program for 1973-2007. Although population-based data in Africa are quite limited, the available data from IARC showed that rates among blacks were highest in the East (10.7-38.1 per 100,000 man-years, age-adjusted world standard) and lowest in the West (4.7-19.8). These rates were considerably lower than those of 80.0-195.3 observed among African Americans. Rates in Africa increased over time (1987-2002) and have been comparable to those for distant stage in African Americans. These patterns are likely due to differences between African and African American men in medical care access, screening, registry quality, genetic diversity, and Westernization. Prevalence rates in Africa will likely continue to rise with improving

economies and increasing Westernization, warranting the need for more high-quality population-based registration to monitor cancer prevalene in Africa. [128].

Prostate cancer is the second most frequently diagnosed cancer and the sixth leading cause of cancer death in males, accounting for 14% (903,500) of the total new cancer cases and 6% (258,400) of the total cancer deaths in males in 2008in the industrialized West countries. Prevalence rates vary by more than 25-fold worldwide, with the highest rates recorded primarily in the developed countries of Oceania, Europe, and North America, largely because of the wide utilization of prostate-specific antigen (PSA) testing that detects clinically important tumors as well as other slow-growing cancers that might otherwise escape diagnosis. In contrast, males of African descent in the Caribbean region have the highest prostate cancer mortality rates in the world, which is thought to reflect partly difference in genetic susceptibility [129, 130]

Temporal trends in prevalence rates in countries with higher uptake of PSA testing such as the United States, Australia, Canada, and the Nordic countries followed similar patterns .Rates rose rapidly in the early 1990s, soon after the introduction of PSA testing, followed by a sharp decline due to a smaller pool of prevalent cases. In other high-income countries with a low and gradual increase in the prevalence of PSA testing, such as Japan and the United Kingdom, rates continue to increase slightly. [138, 139]

Death rates for prostate cancer have been decreasing in many developed countries, including Australia, Canada, the United Kingdom, the United States, Italy, and Norway in part because of the improved treatment with curative intent [133, 134]. The role of PSA testing in the reduction of the prostate cancer mortality rates at the population level has been difficult to quantify. A large US-based randomized trial on the efficacy of PSA testing in reducing mortality from prostate cancer found no benefit, [112] while another similar European-based trial found a modest benefit.[135, 136]

Penile Cancer

Penile cancer is a rare disease in industrialized countries. As an example, the prevalence in the United States was 0.58 per 100,000 between 1993 and 2002, based upon data from the Surveillance, Epidemiology and End Results (SEER) database [137]

In contrast, penile carcinoma is a far more serious health problem in less developed areas of the world, such as parts of Africa, Asia, and South America. In those areas, penile carcinoma can account for 10 to 20 percent of all malignancies in men [58, 138, 139] .

Barnholtz-Sloan et al studied the incidence trends of primary penile cancer in the United States using data from The National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) database of 1,817 men. They found that the overall incidence of primary malignant penile cancer has been decreasing over the past 3 decades. The overall incidence was 0.84 per 100,000 from 1973-1982, 0.69 from 1982-1992, and 0.58 from 1993-2002. Most of the cancers were squamous cell and originated on the glans. From 1993-2002, the incidence was highest among Hispanics (1.01 per 100,000), followed by Alaskan Native Americans (0.77 per 100,000) and African Americans (0.62 per 100,000).[137].

Penile cancer is rare in circumcised men, particularly if they were circumcised as a neonate. Seyam et al studied penile carcinoma in 22 men who had been circumcised. Eighteen of these patients came from the Southwest part of Saudi Arabia and had undergone late ritual circumcision. This practice, known as "Tihamah" circumcision, involves removing an extensive amount of skin, including some of the pubic skin. This procedure results in extensive cicatrization, which is probably the underlying cause of the resulting squamous cell cancer. Radiation therapy was attempted in a few of the patients, with unsuccessful results, whereas the group treated with surgery had a median survival of 34 months.[140] .

On a retrospective case study. done at Kenyatta National Referral Hospital, Nairobi. There were 55 patients with penile cancer representing 0.1% of all malignanciesduring the study

period. The mean age was 47.9 years with a peak incidence between 40-61 year age groups. Penile cancer was the most rare urological tumour representing 5.1%. The most common was prostate cancer (56.0%), followed by bladder cancer (25.0%), kidney cancer (7.9%), and testicular cancer (6.1%). Thirty eight patients (69.1%) presented with advanced disease, Jacksons stages III and IV. The majority (96.4%) of the patients had glandular and preputial involvement. Histologically, 56.4% had well differentiated squamous cell carcinoma, (23.6%) had moderately differentiated and (20.0%) had undifferentiated carcinoma. Forty patients (72.7%) were circumcised, nine patients (16.4%) were circumcised as adolescents and three patients (5.5%) circumcised as adults. Twenty five patients had partial penectomy with radiotherapy and or chemotherapy. Eight patients had total penectomy and radiotherapy while four patients had local excision and radiotherapy. Eleven other patients had radiotherapy either alone or combined with chemotherapy. Two patients had circumcision only and inguinal lymphadenectomy was effected on five patients after penectomy and radiotherapy [141].

Cancer of the penis represents less than 0.5% of cancers in men. Incidence rates are less than 1 per 100,000 in Western countries, with higher rates found in Latin America such as Brazil, Colombia, and Peru, Uganda, and specific regions in India and Thailand. The geographical correlation between the incidence of penile and cervical cancers and the concordance of these two cancers among married couples suggested the common aetiology of HPV infection. HPV DNA is detectable in approximately 40-50% of all penile cancers. HPV DNA is detectable among penile intraepithelial neoplasias with the basoloid histological type, ranging from 75-80% of cases, and decreasing to 30-60% among invasive squamous cell carcinomas (SCC). The majority of penile carcinomas are squamous cell carcinomas (SCC), and it has been observed that some cases of penile SCC are HPV DNA negative. HPV DNA positvity among penile cancers varies with histopathological type, with a prevalence of 47% in basaloid/warty types, 75% in purely basaloid types, and 11% in keratinizing SCC. Among HPV-DNA positive cases, HPV-16 is the most common type [142]

In Tanzania the highest geographic prevalence of penile cancer are noted around Lake Victoria, the Mbeya region, and other areas where circumcision is not customarily practiced. Many Bantu tribesof Tanzania circumcise as an initiation rite on the attainment of manhood. The age at circumcision ranges between 9 and 16 years and depends on the tribal custom and the frequency of initiation rites. [124]

Most tribal groups in the eastern part of the country practice circumcision. However, in some tribes of the Southern highlands of Tanzania circumcision is not practiced routinely and yet the prevalence of penile cancer has been observed to be rare. An explanation for this observation remains unclear. These findings may possibly reflect the differences in hygienic measures, such as habits of ablution or relative frequency of infections. At Shirati Hospital in northern Tanzania all cases of penile cancer occurred in uncircumcised Luo. [130] The African experience has confirmed the prophylactic effects of circumcision and its greatest effectiveness when performed in infancy. [125]

Testicular Carcinoma

Epidemiologic evidence suggests that the prevalence of testicular cancer has been increasing worldwide since the early 1900s [143 -145] . As examples: A study performed in Connecticut showed a 3.5-fold increase in the incidence of testicular germ cell cancer, both seminoma and nonseminomatous GCT, in the 1990s compared to the 1950s [158] . In data from the Surveillance Epidemiology and End Results (SEER) database of the National Cancer Institute, the overall prevalence of testicular germ cell tumors among American men rose 44 percent (from 3.35 to 4.84 per 100,000 men) between 1973 to 1978 and 1994 to 1998. The prevalence of seminoma rose 62 percent, while the for nonseminomatous GCTs rose only 24 percent. A review based upon data from 12 European countries found that the incidence of GCTs was increasing by 1 to 6 percent per year in the various countries. In contrast, mortality rates decreased or were stable in most regions, reflecting improvements in treatment. [159]

Greenlee et al reported that, testicular cancer accounted for 1.1% of all cancers in males in 2000. [147] The prevalence was reported to be lower in non-whites than whiteswhile a study on a black population showed that, while there was a low prevalence of germ cell tumours, non-germ cell tumours had a similar incidence to that in the white series Testicular tumours arise from germ cells in 94 - 97% of cases. The tumours are classified into seminoma (classic, anaplastic and spermatocytic variants) and non-seminomatous germ cell tumours (embryonal carcinoma, teratocarcinoma, teratoma, choriocarcinoma, and yolk sac tumours). Non-germ cell tumours include gonadal stromal tumours and miscellaneous neoplasms.,[148, 149]

The treatment of germ cell tumours has greatly evolved from extirpative surgery only, to cisplatin-based chemotherapy, radiotherapy and retroperitoneal lymph node dissection. These methods have now made the condition being potentially curable, with documentation of excellent survival figures in the developed world. [150] .

However, in the developing world, treatment outcome is still poor.. Reasons for this trend include lack of well-established first-line medical treatment that leads to late diagnosis and referral, and unavailability of treatment, poverty and reluctance to accept chemotherapy and radiotherapy. [151, 152]

2.2: STATEMENT OF THE PROBREM

Urological malignancies are important growing health problem, presenting a challenge to urologists, radiologist and oncologists in their prevalence and its management in different parts of the world, including the Sub-Saharan countries facing these problems and Tanzania is among this trend. [153]

Magoha et al, at Kenyatta Hospital-Kenya, studied on Prostate cancer prevalance in black Africans was grossly misunderstood and underestimated in the past. Prostate cancer prevalence is on the increase and currently is perhaps the most common urological malignancy affecting black Africans. Its prevalence and clinical characteristics is similar to that of the Africans in diaspora but different from all other races. There currently exists significant evidence which suggests a common enhancing genetic predisposition in black men to prostate cancer. There is very urgent need for further investigation of this phenomenon through randomised controlled muIticentre studies involving indigenous black Africans and black men in diaspora. [154]

A study by Bowa K and collegues in Zambia, 2008 showed the urological cancer represents 16.5% of all new malignancy seen annually. [93].

Little is known in Tanzania concerning the prevalence of urological malignancies. However a study done in Tanzania by Mwakyoma HA and Magandi JL on To correlate histopathological grades of prostate cancer by Gleason's scoring system and pretreatment PSA levels in patients with prostate cancer, these study also showed high prevalence of prostate cancer which gave the way for more research to be done in our setup to know the prevalence of other urological cancers. [127]

These patients once they are admitted at Muhimbili National Hospital and diagnosed with urological malignancy, stay in the wards for long duration because their care it is quite difficult and involving multidisciplinary approach of the health specialists (surgeons, oncologists, radiologists) from Muhimbili National Hospital and Ocean Road Cancer Institute, and on other occasion social welfare staff are involved to take part in care logistics.

2.3: RATIONALE OF THE STUDY:

The purpose of this study was to analyze information on renal, bladder, prostate, penile and testicular cancers for patients admitted at MNH in urological wards. I reviewed the data from available studies published in the local medical literature in the past decades, as well as papers presented at different places within and outside the country dealing with urological researches and conferences.

Many studies have been done in different African countries on renal, urinary bladder, prostate, penile and testicular cancers.
Tanzania, as among those countries researched in some urological malignancies i.e. prostate cancer, urinary bladder but there are other conditions mentioned above little is known, because of these factors there is a need to do research in order to know the magnitude and distribution of this problem in terms of age, sex, and residential areas.

At Muhimbili National Hospital many patients with urological malignancies are attended, this also reflects the need to do studies in order to find the baseline information concerning these problems in our setting which can give data for further researchers.
The number of patients with urological malignancies in urology wards is increasing and according to monthly registry reports of MNH showed that there is an increase in trend of this disease due to the increase in morbidity and mortality of these urogenital cancers presented every month in surgical department at Muhimbili National Hospital in 2010-11.

Knowing the prevalence of urological malignancy will make extension of care and treatment, to reduce the challenges of management. And helps further researcher for accessing data for their studies.

Lastly, this research is done as partial fulfillment of the requirement for the degree of Master of Medicine in General Surgery of the Muhimbili University of Health and Allied Sciences.

CHAPTER THREE

3.0: OBJECTIVES

3.1: BROAD OBJECTIVE

To determine the profile of urological malignancies among patients admitted to urological surgical wards at Muhimbili National Hospital from March 2010 to February 2011.

3.2 SPECIFIC OBJECTIVES:

1. To determine the sex and age distributionof urological cancers in patients admitted at Muhimbili National Hospital.

2. To determine the histo-pathological findings of urological malignancies at Muhimbili National Hospital.

3. To determine the population affected by urological malignancies among patients admitted at Muhimbili National Hospital.

4. To determine the clinical presentation of these malignancies at time of admission.

CHAPTER FOUR

4.0: METHODOLOGY:

4.1 Study design:

This was a cross-sectional, prospective hospital based descriptive study.

4.2: Study settings:

The study was conducted at Muhimbili National Hospital, a referral teaching hospital located in Dar es Salaam city, Tanzania. The hospital receives patients from all parts of the country referred by district, regional, and Faith-based hospitals including those with referral hospitals. The hospital bed capacity is 1800, and urological wards have 220 beds, with bed occupancy ranging 95-220 patients everyday.

4.3: Study population:

The study cohort included all patients admitted at urological wards- Muhimbili National Hospital, within the period of the study, involving female and male patients coming with signs and symptoms of urological cancers.

4.4: Inclusion Criteria:

All patients diagnosed with urological malignancies.Patients willingness to participate in the study and to sign informed consent form.

4.5: Exclusion Criteria:

Patients with urological signs and symptoms but confirmed to have no urological malignancies.

Refusal /or inability to give informed consent.

All patients below 14 years of age. The age between 0 to 13 years are admitted in children wards.

4.6 SAMPLE SIZE:

The sample size for urological malignancies will be calculated using a single proportion formula[155]:

$$\mathbf{n= \frac{z^2\, p\, (100- P)}{\varepsilon^2}}$$

Where: n = Minimum sample size designed,

z = the point on standard normal deviation corresponding to 95% Confidence Interval which is 1.96, (Zx of 1.96 approximated to 2)

p = The proportion of urological malignancy in patients seen at MNH (80%),

ε = Margin of error set at 5%

$$n = \frac{(2)^2 x 80 x 20}{(5)^2}$$

n = 256

The number of patients with urological malignancy planned to be recruited in this study were 256 patients.

4.7: Duration of the study:

The study was conducted between March 2010-February 2011.

4.8: Study tools:

Three hundred and six structured questionnaire were filled by the investigator/data collector in the urological wards.

4.9: Data Collection:

Data was collected from the patient during admission, and a history of the illness was taken and documented in the treatment file. This followed by a thorough clinical examination including local examination of the affected area. i.e testicles, penis. Abdominal examination for renal masses and urinary bladder mass, digital rectal examination for prostate.

Also data were collected from laboratory registries, as this is a clinical research, histological and blood results were included for each patient.

4.10: STATISTCAL DATA ANALYSIS:

Data was analyzed by SPSS (Statistical Package for the Social Sciences) 10.

4.11: ETHICAL ISSUES:

Informed consent was obtained from patients by explaining to them the aim of the study, then a form which contains all the information concerning the research was given to each patient who could give consent or a close relative who gave consent on behalf of the patient. Then the patient or her/his relative was required to read the information and asked to sign the form if he/she agreed to participate.

All patients' information were kept confidentially and not accessed by people not concerned with this study.

4.12: Ethical clearance:

The study was ethically cleared by MUHAS research and publication committee.

CHAPTER 5

RESULTS:

A total of three hundred and six patients were recruited in this study between March 2010 and February 2011, the male to female ratio of urological cancers was 3.2 to 1 (233male and 73female) , of those, the frequency of urological malignancies was as follows: 138(45%) were due to prostate cancer, 130(42%) bladder cancer, 26(9%) renal cancer, and only seven patients of penile cancer, and five cases of testicular cancer were enrolled. Table 1.

The mean age of the patients admitted with urological malignancies was 58.9 years with a range of 14-91 years.

Table 1: The proportion of urological cancers according to sex at Muhimbili National Hospital.

Site of cancer	Male	Female	TOTAL
Prostate	**138(59%)**	**-**	**138(45%)**
Bladder	**71(31%)**	**59(81%)**	**130(42%)**
Renal	**12(5%)**	**14(19%)**	**26(9%)**
Penile	**7(3%)**	**-**	**7(2%)**
Testicular	**5(2%)**	**-**	**5(2%)**
TOTAL	**233(100%)**	**73(100%)**	**306(100%)**

Socio-demographic Characteristics

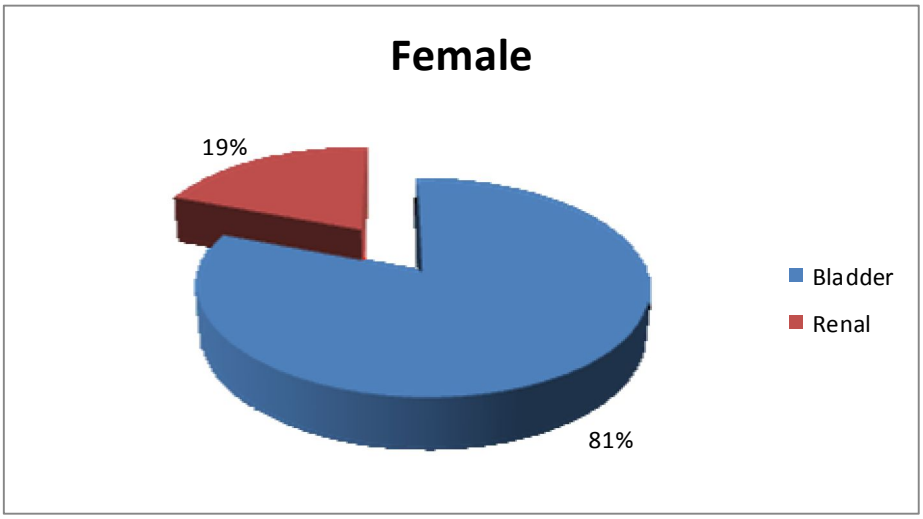
The socio-demographic characteristics of respondents are summarized in table 2.

A total of 306 respondents were involved and participated in the study, of which 67% came from coastal area along regions close to Indian Ocean, including Dar es Salaam, Pwani(Coast), Morogoro, Tanga, Mtwara, Lindi. And other 33% were patients referred from Shinyanga, Tabora, Singida, Dodoma, and very few from referral hospitals of Mbeya, KCMC and Bugando. One hundred and thirty eight (45%) were patients in age group 51-70 years. Both males and female were involved in the study, 233 males (76%) and females were 73 (24%). This reflects that more males are affected by urological cancers than females. Eighty three percent of patients have no knowledge of urological cancer as the disease they are suffering from. Twenty percent believed on cultural beliefs and attended for herbal treatments, seventy two percent (72%) neither believed on cultural beliefs nor used local herbal before came to hospital.

Table 2: Socio-demographic characteristics of the study population (n=306)

Socio-demographic characteristics		Frequency	Relative frequency
Age:	**14-30**	**9**	**3%**
	31-50	**52**	**17%**
	51-70	**138**	**45%**
	71-90	**101**	**33%**
	91+	**6**	**2%**
Sex:			
	Males	**233**	**76%**
	Females	**73**	**24%**
Population of Concern:			
	Coastal Area	**205**	**67%**
	Mainland	**101**	**33%**
Knowledge of Urological Cancers:			
	Yes	**52**	**17%**
	No	**254**	**83%**
Cultural beliefs/Traditional medicine use before hospital:			
	Yes	**61**	**20%**
	No	**220**	**72%**
	Neither	**25**	**8%**

Figure 1: Showing the proportion of urological cancer in females at MNH



RESULTS: The majority of females with urological malignancies attended at Muhimbili National Hospital had bladder cancer as shown in the chart above.

Table 3 : Urological cancer proportion by Age-group in male patients admitted at MNH-Dar es Salaam.

Age group in years	Prostate cancer	Bladder cancer	Renal cancer	Penile cancer	Testicular cancer
14-30	-	3(4%)	2(17%)	1(14%)	2(40%)
31-50	4(2%)	17(24%)	4(33%)	4(58%)	-
51-70	59(43%)	33(47%)	5(42%)	1(14%)	1(20%)
71-90	70(51%)	17(24%)	1(8%)	1(14%)	2(40%)
91+	5(4%)	1(1%)	-	-	-
TOTAL	138(59%)	71(31%)	12(5%)	7(3%)	5(2%)

RESULTS: Prostate cancer was the leading cause of admission among genitourinary cancers in males, the most affected age-group was between 71 to 90 years. Urinary bladder cancer was the second in diagnosis, the highest frequency was at age-group 51-70 years (47%). Renal cancer age-group 51-70 years had high frequency by 42%, while malignancy penile affected more age group between 31-50 years. Testicular age groups 14-30 and 71-90 showed the same frequency of 40%.

Figure 2. Urological cancers in males by age groups in patients admitted at Muhimbili National Hospital.

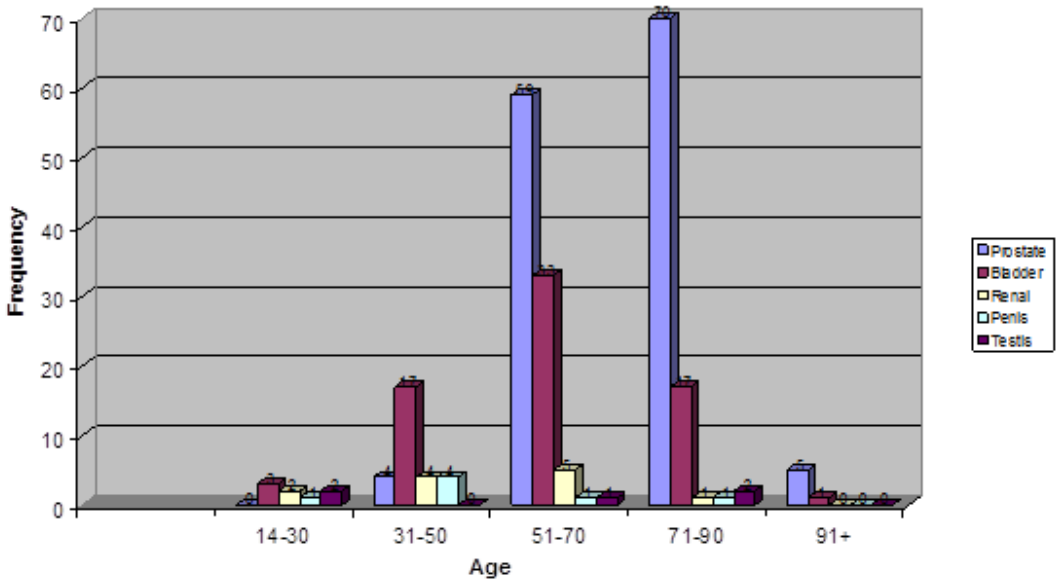
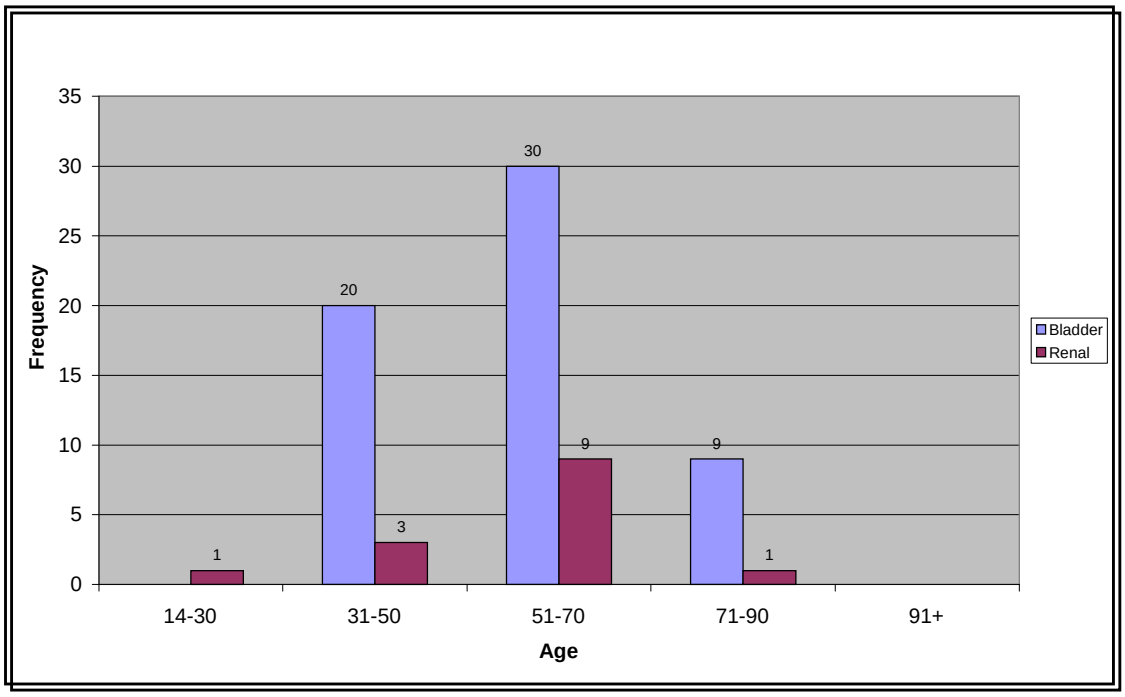


Figure 2: This chart represents the above described table of the proportion of Urological cancer by age group for the male patients at MNH

Figure 3:Urological cancers in females by age groups for patients admitted at Muhimbili National Hospital.



RESULTS: Majority of females admissions were due to bladder cancer and the commonest age group was between 51-70 years (51%), Renal cancer affected thesame age-group (64%).

Table 4: Histology findings of all patients from urology ward at MNH.

Site of cancer	Squamous cell ca	Transtional cell ca	Adenocarcinoma	Renal cell ca	Germ cell ca	Others	TOTAL
Prostate Ca	-	-	125(91%)	-	-	13(9%)	138(100%)
Bladder	70(54%(	23(18%)	20(15%)			17(13%)	130(100%)
Renal Ca	-	-	-	17(65%)	-	9(35%)	26(100%)
Penile Ca	7(100%)	-	-	-	-	-	7(100%)
Testicular Ca		-	-	-	3(60%)	2(40%)	5(100%)

RESULTS: Histopathological findings for the biopsy tissues reviewed by pathologists at Central Pathology Laboratory of Muhimbili National Hospital, specimen took from patients with a diagnosis of Urological Malignancies at urological ward.

Figure 4: The proportion of renal cancer in males and females patients admitted at urology wards at Muhimbili National Hospital.

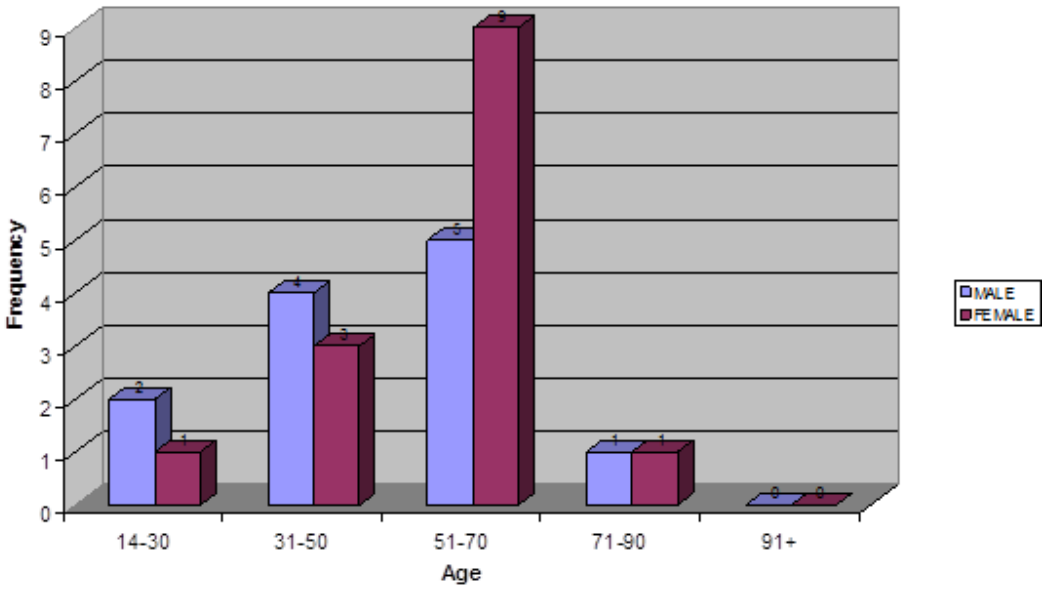
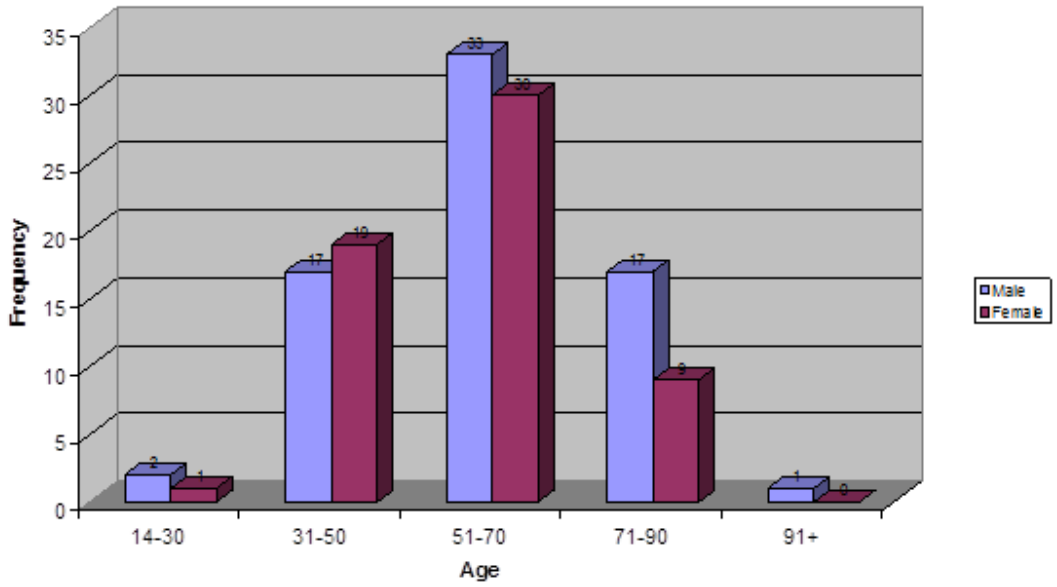


Figure 4: The above chart showed females had higher frequency of renal cancer than males at Muhimbili National Hospital, though 51-70 years is the commonest. The female to male ratio was 1.2:1

Figure 5 : The frequency of bladder cancer by Sex-Age for the patients admitted in Urology wards at Muhimbili National Hospital



RESULTS: The age group between 51-70 years had the highest frequency of bladder cancer, and there were more males than females. The male to female ratio was 1.2:1

CHAPTER SIX

DISCUSION

Urological malignancy is becoming a major health problem. Globally cancers of the prostate, testis, penis, kidney and bladder accounts for 16.5% of all new cases of cancer and 11.7% of cancer deaths.[120, 121]

Prostate Cancer

Prostate cancer is the second most frequently diagnosed cancer among men ; testicular cancer, although relatively infrequent, is nevertheless the most common cancer in men under 45 years of age. Cancer of the penis, by contrast, is rare. Cancers of the kidney and bladder may develop in people of either sex but are roughly as common among men in most age groups, except 51-70 years age group females had higher renal cancer than males, as well in 31-50 years for bladder cancers.[120, 121]

In this study, prostate cancer accounted for the highest frequency over all five urological cancers encounter. Out of 306 patients enrolled in the study, one hundred and thirty eight patients (45%) had prostate cancer. Most patients came with advanced stage and presented with either urinary obstructive symptoms (dysuria, poor urine streaming, sense of incomplete emptying of the bladder), and/orirrigativesymptoms (hesitancy, frequency and urgency). Other had hematuria, back pain and erectile dysfunction. Digital rectal examination was performed on every patient suspected with prostate cancer and every patient was checked for blood PSA and other diagnostic important investigation like ultrasound and trucut biopsy to confirm the diagnosis.

Histopathological findings showed that hundred and twenty five patients (91%) had adenocarcinoma and only 9% presented with other types (table 4). This findings was consistent with other studies done by others. Similar findings were reported in Tanzania by

Mwakyoma et al at Muhimbili National Hospital, whereby they found that 99.1% of patients with prostate cancer had adenocarcinoma of prostate [127]

Bladder Cancer

Bladder cancer is among the top ten most common diseases admitted at urological unit at Muhimbili National Hospital. In this study, urinary bladder cancer constituted 42 percent of all urological malignancies found at Muhimbili National Hospital among both males and females. This percentage reflects an increase of urinary bladder cancer prevalence when compared to the past data of 1969 to 1973 had only 38.5%. [123].

Table 4, shows various types of histopathological types of Urinary bladder malignancy at MNH. According to these findings, squalors cell carcinoma was thecommonest accounted the higher frequency more than half (54 %) of all histological observations tested during the study, this findings related to a study done in Egypt whereby SCC encounterthe highest. [120]. Transitional cell carcinoma was second at 18 percent, whereby adenocarcinoma presented with only 15 percent of all histological findings, but in Indonesia Transitional Cell Carcinomawas first followed by other types [94, 95]. Others were 13 percent.

During the study period at total of one hundred and thirty patients with bladder cancers were enrolled, out of this, 71 were males and 59 females, (table 2), the prevalence of bladder cancer was higher in males compared to females, with a ratio of 1.2:1. This ratio is lower as compared to research reported in Indonesia (6:1), Sri-Lank (6:1), United State (4:1), the higher male to female ratio on their studies was attributed to fewer female smokers compared to male and lesser females exposure to industrial carcinogens, or other female protective factors[166, 169], these factors yet studied here in Tanzania.

The most affected age-group was 51- 70 years, with a mean age of 55 years. The peak age of onset of the disease was seen to be from fifth decade (Figure 2& 5).

Bladder cancer was the second diagnosis cause of urological malignancy admission at Muhimbili National Hospital, followed by prostate cancer, which is contrary to research done in Indonesia at Hasan Sadikin Hospital, Bandung[94, 157] , but the same occurrence as in Zambia study by Bowa et al [93].

At Muhimbili National Hospital urologic unit, among women admitted, bladder cancer was the commonest cause admission than renal cancers by 81% and 19% respectively (figure 2 and 4).In women the age group between 51-70 years was more affected than the other age groups.

Patients with bladder cancer came with different presentation as hematuria, dysuria, recurrent urinary tract infection, passage if shreds in urine, abdominal pain, or mass, lower limb edema.

Renal Cancer

In this study, kidney cancer represented the fourth in frequency among urological malignancies intervened. Twenty six patients were seen, among these, their histopathological review revealed that, seventeen patients had renal cell carcinoma (65%), others Transitional Cell Carcinoma, Oncocytoma, Collecting ducts and renal sarcoma, both from the parenchymal epithelial represented 35%. This data related to a study done in United States in 2006 by Nguyen et al, reported that Renal Cell Carcinoma was predominant by 85% of all renal cancers and most arose from renal cortex, and TCC represented less than 10%, and other uncommon renal tumors represented by less than 1% of the total. [6].Contrary to study done in Indonesia, showed only 18% of renal cell carcinoma among kidney cancers, majority were nephroblastoma which was included in that study but to my research was not included. [95, 157] This study showed that the male to female ration was 1:1.2, females had high frequency of 14 patients out of total of twenty six. The age group most affected was 51-70 years, with mean age of 52.5 years. (figure 2,3&4).

Penile cancer

Cancer of the penis is a rare disease worldwide.[145] It showed lower prevalence in most developed countries. In less developed countries, it is more a serious health problem especially in Africa, Asia and South America. [158].

During the period of the study, seven patients with penile cancer were enrolled, biopsy were taken from the penile lesion and sent for histopathological review. All results revealed squamous cell carcinoma 100%) [57, 59]. This is similar to other studies performed by Magoha et al at Kenyatta National Hospital. [141, 142]

The age mostly affected was 31-50 years with a mean of 42.5 year. (figure2).

Testicular Cancer

Testicular cancer was the least malignancy found in patients seen during this study as only five in number out of total 306 intervened. of these three patients had germ cell tumor, and the two had other types. (Table 4).

The most common age group affected was 31 to 50 years, the mean age was 47 year. (Figure2)

Patients presented with testicular masses, pain and testicular heaviness, also lower abdominal pain and mass.

CHAPTER SEVEN

7.0: CONCLUSION AND RECOMMENDATIONS

7.1: CONCLUSION

Urological malignancy was found to be a significant health problem affecting both males and females in our population.

Most of these patients attended to medical care late and hence presented here at Muhimbili National Hospital, urologic unit with advanced stage of the disease which increases its morbidity and mortality.

The high prevalence of diagnosed prostate cancers combined with the ageing of the working population created challenges for urological cancer service care to these patients.

This high prevalence of prostate cancer patients, givesan importance of way forward about the need for conducting a population-based screening program to detect many asymptomatic patients, and those patients attending to primary health providers who have minimal skills of diagnosing early prostate cancer.As introduction of PSA test showed early diagnosis of prostate cancer in the developed countries of Oceania, Europe, and North America, largely because of the wide utilization of prostate-specific antigen (PSA) testing that detects clinically important tumors as well as other slow-growing cancers that might otherwise escape diagnosis.[138, 139, 143, 144]

Also other urological malignancies presented at Muhimbili national hospital urological wards in late stages, all giving challenges in their management.

All these data reflecting that, urological malignancy, is the disease which needs to be delt upon as the big health problem in Tanzania, which affects both sexes of all age groups.

7.2: RECOMMENDATIONS

Prostate and bladder cancer showed high prevalence of the disease, it is important to pay attention whenever we get any patient with urological signs and symptoms by adequate investigation as can reduce detecting these problems in advanced stage.

Early diagnosis can reduce giving patients palliative care rather than curative, as we have seen most of our patients of prostate cancer treated by BSO 110(83%) out of 132 patients operated due to prostate cancer, and Channel TURP 18(13%), radical prostatectomy 5(4%) according to operation registry of urological unit at MNH.

Bladder carcinoma was the second most cause of urological malignancies at MNH, whereby histopathological findings revealed SCC(54%), the patients from coastal zone area as water-borne disease was affected more, the regional distribution of urinary schistosomiasis favors the high prevalence of Squamous Cell Carcinoma of bladder.[123]

Also there is a need for the Ministry of Health &Social Welfare to improve diagnostic tools in District and Region hospitals, for example ultrasound machine, PSA reagents, cystoscope instruments, etc. Ultrasonography machine will help on detecting prostate, bladder, testicular and renal masses.

Government is also supposed to encourage specialists i.e. urologists to go and work in peripheral hospital (district and regional) by increasing payments for those who accept working far from the cities.

According to finding concerning knowledge of urological cancers to be very low among patients seen during the research (table 2), it is wise to advice the government to educate the population (community) of Tanzania to know the early sign and symptoms of urological cancers, this can make early patients attendance to health care, in order to reduce its

prevalence, morbidity and mortality and costs of managing them, as it is done to Malaria and HIV prevention.

Also establish policy of schistosomiasis eradication by preventing snail breeding sites to break the life cycle of infection, and mass prophyraxis of anti-schistosomiasis as was done once in 2007 to primary school children in high risk areas. This prevention was supposed to cover all population of high risk of urinary schistosomiasis including adults.

8.1: REFERENCES

1. Jemal, A, Siegel, R, Ward, E, et al. Cancer statistics, 2009. CA Cancer J Clin 2009; 59:225.

2. Patel, PH, Chaganti, RS, Motzer, RJ. Targeted therapy for metastatic renal cell carcinoma. Br J Cancer 2006; 94:614.

3. Parkin, DM, Pisani, P, Ferlay, J. Estimates of the worldwide incidence of eighteen major cancers in 1985. Int J Cancer 1993; 54:594.

4. Kosary, CL, McLaughlin, JK. Kidney and renal pelvis. In: SEER cancer statistics review, 1973-1990, Miller, BA, Ries, LAG, Hankey, BF, et al. (Eds), Natl Cancer Inst, Bethesda 1993. (NIH publication no. 93-2789, XL.1XI.22).

5. Chow, W-H, Devesa, SS, Warren, JL, Fraumeni, JF. Rising incidence of renal cell cancer in the United States. JAMA 1999; 281(17):1628-1631.

6. Nguyen, MM, Gill, IS, Ellison, LM. The evolving presentation of renal carcinoma in the United States: trends from the surveillance, epidemiology, and end results program. J Urol 2006; 176:2397.

7. Stafford, HS, Saltzstein, SL, Shimasaki, S, et al. Racial/ethnic and gender disparities in renal cell carcinoma incidence and survival. J Urol 2008; 179:1704.

8. Cooperberg, MR, Mallin, K, Ritchey, J, et al. Decreasing size at diagnosis of stage 1 renal cell carcinoma: analysis from the National Cancer Data Base, 1993 to 2004. J Urol 2008; 179:2131.

9. Kane, CJ, Mallin, K, Ritchey, J, et al. Renal cell cancer stage migration: analysis of the National Cancer Data Base. Cancer 2008; 113:78.

10. Pantuck, AJ, Zisman, A, Belldegrun, AS. The changing natural history of renal cell carcinoma. J Urol 2001; 166:1611.

11. Hollingsworth, JM, Miller, DC, Daignault, S, Hollenbeck, BK. Rising incidence of small renal masses: a need to reassess treatment effect. J Natl Cancer Inst 2006; 98:1331.

12. Woldrich, JM, Mallin, K, Ritchey, J, et al. Sex differences in renal cell cancer presentation and survival: an analysis of the National Cancer Database, 1993-2004. J Urol 2008; 179:1709.

13. Siemer, S, Hack, M, Lehmann, J, et al. Outcome of renal tumors in young adults. J Urol 2006; 175:1240.

14. Thompson, RH, Ordonez, MA, Iasonos, A, et al. Renal cell carcinoma in young and old patients--is there a difference?.J Urol 2008; 180:1262.

15. Cook, A, Lorenzo, AJ, Salle, JL, et al. Pediatric renal cell carcinoma: single institution 25-year case series and initial experience with partial nephrectomy. J Urol 2006; 175:1456.

16. Estrada, CR, Suthar, AM, Eaton, SH, Cilento, BG Jr. Renal cell carcinoma: Children's Hospital Boston experience. Urology 2005; 66:1296.

17. Motzer, RJ, Bander, NH, Nanus, DM. Renal-cell carcinoma. N Engl J Med 1996; 335:865.

18. Ries, LA, Eisner, MP, Kosary, CL, et al. SEER Cancer Statistics Review, 1973-1997. Bethesda Maryland: National Cancer Institute, 2000.

19. Lee, CT, Katz, J, Shi, W, et al. Surgical management of renal tumors 4 cm. or less in a contemporary cohort. J Urol 2000; 163:730.

20. Mandel, JS, McLauglin, JK, Schlegofer, B, et al. International renal cell cancer study. IV. Occupation. Int J Cancer 1995; 61:601.

21. Wolk, A, Gridley, G, Niwa, S, et al. International renal cell cancer study. VII. Role of diet. Int J Cancer 1996; 65:67.

22. Beck, SD, Patel, MI, Snyder, ME, et al. Effect of papillary and chromophobe cell type on disease-free survival after nephrectomy for renal cell carcinoma. Ann Surg Oncol 2004; 11:71.

23. Bosniak, MA, Birnbaum, BA, Krinsky, GA, Waisman, J. Small renal parenchymal neoplasms: Further observations on growth. Radiology 1995; 197:587.

24. Schlomer, B, Figenshau, RS, Yan, Y, et al. Pathological features of renal neoplasms classified by size and symptomatology. J Urol 2006; 176:1317.

25. Richie, JP, Skinner, DG. Renal neoplasia. In: The Kidney, 2nd ed, Brenner, BM, Rector, F (Eds), WB Saunders, Philadelphia 1981. p.2109.

26. Tannenbaum, M. Ultrastructural pathology of human renal cell tumors. Pathol Annu 1971; 6:249.

27. Thoenes, W, Storkel, S, Rumpelt, HJ. Histopathology and classification of renal cell tumors (adenomas, oncocytomas and carcinomas): The basic cytological and histopathological elements and their use for diagnostics. Pathol Res Pract 1986; 181:125.

28. Storkel, S, van den Berg, E. Morphologic classification of renal Cancer. World J Urol 1995; 13:153.

29. Patard, JJ, Leray, E, Rioux-Leclercq, N, et al. Prognostic value of histologic subtypes in renal cell carcinoma: a multicenter experience. J Clin Oncol 2005; 23:2763.

30. Zisman, A, Chao, DH, Pantuck, AJ, Kim, HJ. Unclassified Renal Cell Carcinoma: Clinical Features and Prognostic Impact of a New Histological Subtype. J Urol 2002; 168:950.

31. Presti, JC Jr, Rao, PH, Chen, Q, et al. Histopathological, cytogenetic, and molecular characterization of renal cortical tumors. Cancer Res 1991; 51:1544.

32. Weiss, LM, Gelb, AB, Medeiros, LJ. Adult renal epithelial neoplasms. Am J Clin Pathol 1995; 103:624.

33. Jemal, A, Murray, T, Ward, E, et al. Cancer statistics, 2005; CA Cancer J Clin 2005; 55:10

34. Pelucchi, C, Bosetti, C, Negri, E, et al. Mechanisms of disease: The epidemiology of bladder cancer. Nat Clin Pract Urol 2006; 3:327.

35. Feldman, AR, Kessler, L, Myers, MH, Naughton, MD. The prevalence of cancer. Estimates based on the Connecticut Tumor Registry. N Engl J Med 1986; 315:1394.

36. Vercelli, M, Quaglia, A, Parodi, S, Crosignani, P. Cancer prevalence in the elderly. ITAPREVAL Working Group. Tumori 1999; 85:391.

37. Michaud, DS, Clinton, SK, Rimm, EB, et al. Risk of bladder cancer by geographic region in a U.S. cohort of male health professionals. Epidemiology 2001; 12:719.
38. Lynch, CF, Cohen, MB. Urinary system. Cancer 1995; 75:316.

39. Scosyrev, E, Noyes, K, Feng, C, Messing, E. Sex and racial differences in bladder cancer presentation and mortality in the US. Cancer 2009; 115:68.

40. Hinotsu, S, Akaza, H, Miki, T, et al. Bladder cancer develops 6 years earlier in current smokers: analysis of bladder cancer registry data collected by the cancer registration committee of the Japanese Urological Association. Int J Urol 2009; 16:64.

41. Linn, JF, Sesterhenn, I, Mostofi, FK, Schoenberg, M. The molecular characteristics of bladder cancer in young patients. J Urol 1998; 159:1493.

42. Schulz, MR, Loomis, D. Occupational bladder cancer mortality among racial and ethnic minorities in 21 states. Am J Ind Med 2000; 38:90.

43. Jones, TD, Wang, M, Eble, JN, et al. Molecular evidence supporting field effect in urothelial carcinogenesis. Clin Cancer Res 2005; 11:6512.

44. Hartmann, A, Schlake, G, Zaak, D, et al. Occurrence of chromosome 9 and p53 alterations in multifocal dysplasia and carcinoma in situ of human urinary bladder. Cancer Res 2002; 62:809.

45. Hafner, C, Knuechel, R, Stoehr, R, Hartmann, A. Clonality of multifocal urothelial carcinomas: 10 years of molecular genetic studies. Int J Cancer 2002; 101:1.

46. Louhelainen, J, Wijkstrom, H, Hemminki, K. Allelic losses demonstrate monoclonality of multifocal bladder tumors. Int J Cancer 2000; 87:522.

47. Kogevinas, M, 't Mannetje, A, Cordier, S, et al. Occupation and bladder cancer among men in Western Europe. Cancer Causes Control 2003; 14:907. .

48. Steineck, G, Plato, N, Norell, SE, Hogstedt, C. Urothelial cancer and some industry-related chemicals: an evaluation of the epidemiologic literature. Am J Ind Med 1990; 17:371.

49. Brennan, P, Bogillot, O, Cordier, S, et al. Cigarette smoking and bladder cancer in men: a pooled analysis of 11 case-control studies. Int J Cancer 2000; 86:289.

50. Brennan, P, Bogillot, O, Greiser, E, et al. The contribution of cigarette smoking to bladder cancer in women (pooled European data). Cancer Causes Control 2001; 12:411.

51. Morrison, AS, Buring, JE, Verhoek, WG, et al. An international study of smoking and bladder cancer. J Urol 1984; 131:650.

52. Kramer, BS, Brown, ML, Prorok, PC, et al. Prostate cancer screening: what we know and what we need to know. Ann Intern Med 1993; 119:914.

53. Miller, DC, Hafez, KS, Stewart, A, et al. Prostate carcinoma presentation, diagnosis, and staging: an update form the National Cancer Data Base. Cancer2003; 98:1169.

54. Walsh PC, Marschke P, Ricker D, et al: Patient-reported urinary continence and sexual function after anatomical radical prostatectomy. *Urology* 55:58, 2000. [PMID:10654895]

55. Catalona WJ, Carvalhal GF, Mager DE, et al: Potency, continence and complication rates in 1,870 consecutive radical retropubic prostatectomies. *J Urol* 162:433, 1999. [PMID: 10411052]

56. Cooperberg, MR, Moul, JW, Carroll, PR. The changing face of prostate cancer. J Clin Oncol 2005; 23

57. Burgers, JK, Badalament, RA, Drago, JR. Penile cancer. Clinical presentation, diagnosis, and staging. Urol Clin North Am 1992; 19:247.

58. Parkin, DM, Muir, CS, Whelan, SL, et al. Cancer incidence in five continents. IARC Sci Publ 1992; 6:892.

59. Lucia, MS, Miller, GJ. Histopathology of malignant lesions of the penis. Urol Clin North Am 1992; 19:227.

60. Schellhammer, PF, Jordan, GH, Robey, EL, Spaulding, JT. Premalignant lesions and nonsquamous malignancy of the penis and carcinoma of the scrotum. Urol \Clin North Am 1992; 19:131

61. Micali, G, Innocenzi, D, Nasca, MR, et al. Squamous cell carcinoma of the penis. J Am Acad Dermatol 1996; 35:432.

62. Sufrin, G, Huben, R. Benign and malignant lesions of the penis. In: Adult and Pediatric Urology, 2nd ed, Gillenwater, JY (Ed), Year Book Medical Publisher, Chicago 1991.

63. Kini, MG. Cancer of the penis in a child aged two years. Indian Med Gaz 1944; 79:66.

64. Hegarty, PK, Kayes, O, Freeman, A, et al. A prospective study of 100 cases of penile cancer managed according to European Association of Urology guidelines. BJU Int 2006; 98:526.

65. Kochen, M, McCurdy, S. Circumcision and the risk of cancer of the penis. A life-table analysis. Am J Dis Child 1980; 134:484.

66. Maden, C, Sherman, KJ, Beckmann, AM, et al. History of circumcision, medical conditions, and sexual activity and risk of penile cancer. J Natl Cancer Inst 1993; 85:19.

67. Dillner, J, von Krogh, G, Horenblas, S, Meijer, CJ. Etiology of squamous cell carcinoma of the penis. Scand J Urol Nephrol Suppl 2000; :189.

68. Shabad, AL. Some aspects of etiology and prevention of penile cancer. J Urol 1964; 92:696.

69. Melicow, MM, Ganem, EJ. Cancerous and precancerous lesions of the penis: a clinical and pathological study based on 23 cases. J Urol 1946; 55:486.

70. Miralles-Guri, C, Bruni, L, Cubilla, AL, et al. Human papillomavirus prevalence and type distribution in penile carcinoma. J Clin Pathol 2009; 62:870.

71. Narayana, AS, Olney, LE, Loening, SA, et al. Carcinoma of the penis: analysis of 219 cases. Cancer 1982; 49:2185.

72. Lynch, DF Jr, Schellhammer, PF. Tumors of the penis. In: Campbell's Urology, ed 7, Walsh, PC, Retik, AB, Vaughan, ED Jr, Wein, AJ (Eds), WB Saunders, Philadelphia 1998.

73. Walsh, TJ, Grady, RW, Porter, MP, et al. Incidence of testicular germ cell cancers in U.S. children: SEER program experience 1973 to 2000. Urology 2006; 68:402.

74. Gourlay, WA, Johnson, HW, Pantzar, JT, et al. Gonadal tumors in disorders of sexual differentiation. Urology 1994; 43:537.

75. Schottenfeld, D, Warshauer, ME, Sherlock, S, et al. The epidemiology of testicular cancer in young adults. Am J Epidemiol 1980; 112:232.

76. Gabrilove, JL, Nicolis, GL, Mitty, HA, Sohval, AR. Feminizing interstitial cell tumor of the testis: Personal observations and a review of the literature. Cancer 1975; 35:1184

77. Grem, JL, Robins, HI, Wilson, KS, et al. Metastatic Leydig cell tumor of the testis. Report of three cases and review of the literature. Cancer 1986; 58:2116.

78. Zheng, T, Holford, TR, Ma, Z, et al. Continuing increase in incidence of germ-cell testis cancer in young adults: experience from Connecticut, USA, 1935-1992. Int J Cancer 1996; 65:723.

79. Ekbom, A, Richiardi, L, Akre, O, et al. Age at immigration and duration of stay in relation to risk for testicular cancer among Finnish immigrants in Sweden. J Natl Cancer Inst 2003; 95:1238.

80. Hentrich, MU, Brack, NG, Schmid, P, et al. Testicular germ cell tumors in patients with human immunodeficiency virus infection. Cancer 1996; 77:2109.

81. Powles, T, Bower, M, Daugaard, G, et al. Multicenter study of human immunodeficiency virus-related germ cell tumors. J Clin Oncol 2003; 21:1922.

82. Shankar, S, Davies, S, Giller, R, et al. In utero exposure to female hormones and germ cell tumors in children. Cancer 2006; 106:1169.

83. Gajendran, VK, Nguyen, M, Ellison, LM. Testicular cancer patterns in African-American men. Urology 2005; 66:602.

84. Nichols, CR. Testicular cancer. Curr Probl Cancer 1998; 22:187.

85. McGlynn, KA, Devesa, SS, Graubard, BI, Castle, PE. Increasing incidence of testicular germ cell tumors among black men in the United States. J Clin Oncol 2005; 23:5757.

86. Raman, JD, Nobert, CF, Goldstein, M. Increased incidence of testicular cancer in men presenting with infertility and abnormal semen analysis. J Urol 2005; 174:1819.

87. Carcinoma-in-situ of the undescended testis. Urol Clin North Am 1982; 9:377.

88. Batata, MA, Chu, FC, Hilaris, BS, et al. Testicular cancer in cryptorchids. Cancer 1982; 49:1023.

89. Lutke Holzik, MF, Rapley, EA, Hoekstra, HJ, et al. Genetic predisposition to testicular germ-cell tumours. Lancet Oncol 2004; 5:363.

90. Forman, D, Oliver, RT, Brett, AR, et al. Familial testicular cancer: a report of the UK family register, estimation of risk and an HLA class 1 sib-pair analysis. Br J Cancer 1992; 65:255.

91. Chaganti, RS, Houldsworth, J. Genetics and biology of adult human male germ cell tumors. Cancer Res 2000; 60:1475.

92. Rapley, EA, Crockford, GP, Teare, D, et al. Localization to Xq27 of a susceptibility gene for testicular germ-cell tumours. Nat Genet 2000; 24:197.

93. Elem B, Patil PS. Pattern of urological malignancy in Zambia. A hospital-based histopathology study . Br J Urol 1991; 67(1): 37-39.

94. Umbas R (2007). Bladder cancer: 10 years experience from two tertiary care hospitals in Indonesia. Indonesian J Surg, 35, 17-22.

95. Matalka I, Bani-Hani K, Shotar A, et al (2008). Transitional cell carcinoma of the urinary bladder: a clinicopathological study. Singapore Med J, 49, 790-4.

96. Lindblad, P. and Adami H.O, Kidney Cancer, in Textbook of Cancer

97. GLOBOCAN 2002, Cancer Incidence, Mortality and Prevalence Worldwide 2002 estimates. 2006.

98. "Kidney Cancer". National Cancer Institute, U.S. National Institutes of Health. http://www.cancer.gov/cancertopics/types/kidney. Retrieved 2009-03-03

99. Ferlay, J., et al., Estimates of the cancer incidence and mortality in Europe in 2006. Ann Oncol, 2007. 18(3): p. 581-92

100. Quinn M, Babb P, Brock A, et al. Cancer Trends in England &. Wales 1950-1999.Vol. SMPS No. 66:TSO, 2001. 8.

101. Lynch, Charles F.; West, Michele M.; Davila, Jessica A.; Platz, Charles E. (2007). "Chapter 24: Cancers of the Kidney and Renal Pelvic". In Horner, M-J; Young, JL; Keel, GE et al.. SEER Survival Monograph: Cancer Survival Among Adults: US SEER Program, 1988-2001, Patient and Tumor Characteristics. SEER Program. NIH Pub. No. 07-6215. Bethesda, MD: National Cancer Institute. pp. 193–202. http://seer.cancer.gov/publications/survival

102. Ferlay J, Bray P, Pisani P, Parkin DM: GLOBOCAN 2000: Cancer Incidence, Mortality and Prevalence Worldwide, Version 1.0. IARC CancerBase No. 5, Lyon, IARCPress, 2001

103. Vaishampayan UN, Do H, Hussain M, Schwartz K: Racial disparity in incidence patterns and outcome of kidney cancer. Urology 2003;62(6):1012–1017.

104. Howe, HL, Wu, X, Ries, LA, et al. Annual report to the nation on the status of cancer, 1975-2003, featuring cancer among U.S. Hispanic/Latino populations. Cancer 2006; 107:1711

105. http//seer. Cancer.gov/csr/1975 2008/results.single Sect 01 table 11 2 pgs.pdf

106. Dolin PJ. An epidemiological review of tobacco use and bladder cancer. *J Smoking Related Dis*1991*;* **2***:* 129–43

107. Hemelt M, Zeegers MP (2000). "The effect of smoking on the male excess of bladder cancer: a meta-analysis and geographical analyses". *Int J Cancer***124** (2): 412–9. doi:10.1002/ijc.23856 PMID 18792102

108. "Scientists Find One Reason Why Bladder Cancer Hits More Men". University of Rochester Medical Center. 2007-04-20.

109. Porpaczy, P, Schramek, P. Analgesic nephropathy and phenacetin-induced transitional cell carcinoma - analysis of 300 patients with long-term consumption of phenacetin-containing drugs. Eur Urol 1981; 7:349.

110. Pedersen-Bjergaard, J, Ersboll, J, Hansen, VL, et al. Carcinoma of the urinary bladder after treatment with cyclophosphamide for non-Hodgkin's lymphoma. N Engl J Med 1988; 318:1028

111. Kitinya J, Pekka A, Eshleman et al,Transactions of the Royal Society of Tropical Medicine and Hygiene ,Volume 80, Issue 6 , Pages 935-939, 1986

112. Platz EA, Giovannucci E. Prostate cancer. In: SchottenfeldD, FraumeniJFJr, eds. Cancer Epidemiology and Prevention. 3rd ed. New York: Oxford University Press; 2006: 1151-1165.

113. Sliverman D, Devesa S, Moore L, Rothman N. Bladder cancer. In: SchottenfeldD, FraumeniFJJr, eds. Cancer Epidemiology and Prevention. 3rd ed. Oxford: Oxford University Press; 2006: 1101-1027.

114. Zaghloul MS, Nouh A, Moneer M, El-Baradie M, Nazmy M, Younis A. Time-trend in epidemiological and pathological features of schistosoma-associated bladder cancer. J Egypt Natl Canc Inst. 2008; 20: 168-174.

115. Karim-Kos HE, de Vries E, Soerjomataram I, Lemmens V, Siesling S, Coebergh JW. Recent trends of cancer in Europe: a combined approach of incidence, survival and mortality for 17 cancer sites since the 1990s. Eur J Cancer. 2008; 44: 1345-1389.

116. Felix AS, Soliman AS, Khaled H, et al. The changing patterns of bladder cancer in Egypt over the past 26 years. Cancer Causes Control. 2008; 19: 421-429.

117. Parkin DM (2008). The global burden of urinary bladder cancer. Scand J Urol Nephrol, Suppl(218), 12-20.

118. Kong CH, Singam P, Hong GE, et al (2010). Clinicopathologicalfeatures of bladder tumours in a single institution inMalaysia. Asian Pac J Cancer Prev, 11, 149-52.

119. Gupta P, Jain M, Kapoor R, et al (2009). Impact of age and gender on the clinicopathological characteristics of bladder cancer. Indian J Urol, 25, 207-410.

120. Department of Health (2001) The NHS Cancer Plan. Available from:www.doh.gov.uk/cancer/cancerplan.htm

121. National Assembly for Wales (2001) Improving Health in Wales: A Plan for the NHS and its Partners. Available from:www.wales.gov.uk/healthplanonline/health_plan/content/nhsplan-e.pdf

122. Hiza PR. Malignant disease in Tanzania. E Afr Med J 1976; 53:82-95.

123. Eshleman JL. A study of the relative incidence of malignant tumours seen at Shirati Hospital, Tanzania. E Afr Med J 1966; 43:273-283.

124. Stirling L. Tanzanian Doctor. Nairobi: Heinemann Educational Books (East African) Ltd, 1977, pp 134-137.

125. Oettle AG. Cancer in Africa, especially in regions south of the Sahara. J Natl Cancer Inst 1964; 33:383-439.

126. Angwafo FF, J Natl Med Assoc. Migration and prostate cancer: an international perspective1998 Nov;90(11 Suppl):S720-3.

127. Mwakyoma H A, Mabandi J L. Prostate cancer; Correlation of gleason's score and pretreatment prostate specific antigen in patients. Professional Med J Jun 2010;17(2): 235-240.

128. Chu LW, Ritchey J, Devesa SS, Quraishi SM, Zhang H, Hsing AW. Prostate Cancer. 2011;2011:947870. Epub 2011 Aug 1. PMID: 22111004 [PubMed - in process]

129. Bock CH, Schwartz AG, Ruterbusch JJ, et al. Results from a prostate cancer admixture mapping study in African-American men. Hum Genet. 2009; 126: 637-642

130. Miller DC, Zheng SL, Dunn RL, et al. Germ-line mutations of the macrophage scavenger receptor 1 gene: association with prostate cancer risk in African-American men. Cancer Res. 2003; 63: 3486-3489.

131. Kvale R, Auvinen A, Adami HO, et al. Interpreting trends in prostate cancer incidence and mortality in the five Nordic countries. J Natl Cancer Inst. 2007; 99: 1881-1887

132. Baade PD, Youlden DR, Krnjacki LJ. International epidemiology of prostate cancer: geographical distribution and secular trends. Mol Nutr Food Res. 2009; 53: 171-184

133. Bray F, Lortet-Tieulent J, Ferlay J, Forman D, Auvinen A. Prostate cancer incidence and mortality trends in 37 European countries: an overview. Eur J Cancer. 2010; 46: 3040-3052

134. Kvale R, Moller B, Angelsen A, et al. Regional trends in prostate cancer incidence, treatment with curative intent and mortality in Norway 1980-2007. Cancer Epidemiol. 2010; 34: 359-367.

135. Schroder FH, Hugosson J, Roobol MJ, et al. Screening and prostate-cancer mortality in a randomized European study. N Engl J Med. 2009; 360: 1320-1328.

136. Andriole GL, Crawford ED, Grubb RL 3rd, et al. Mortality results from a randomized prostate-cancer screening trial. N Engl J Med. 2009; 360: 1310-1319.

137. Barnholtz-Sloan, JS, Maldonado, JL, Pow-sang, J, Giuliano, AR. Incidence trends in primary malignant penile cancer. Urol Oncol 2007; 25:361.

138. Kamat, MR, Kulkarni, JN, Tongaonkar, HB. Carcinoma of the penis: the Indian experience. J Surg Oncol 1993; 52:50.

139. Dodge, OG, Linsell, CA. Carcinoma of the penis in Uganda and Kenya Africans. Cancer 1963; 16:1255.

140. Seyam RM, Bissada NK, Mokhtar AA, et al. Outcome of penile cancer in circumcised men. J Urol. Feb 2006;175(2):557-61; discussion 561. [Medline]

141. Magoha G.A.O. and Kaale R.F Epidemiological and clinical aspects of carcinoma of penis at Kenyatta National Hospital. East Afr. Med. J. 1995; 72:359-361

142. WHO/ICO Information Centre on HPV and Cervical Cancer (HPV Information Centre). Human Papillomavirus and Related Cancers in Tanzania. Summary Report 2010. [Date accessed].Available at www.who.int/hpv.centre

143. Huyghe, E, Matsuda, T, Thonneau, P. Increasing incidence of testicular cancer worldwide: a review. J Urol 2003; 170:5.

144. McKiernan, JM, Goluboff, ET, Liberson, GL, et al. Rising risk of testicular cancer by birth cohort in the United States from 1973 to 1995. J Urol 1999; 162:361.

145. McGlynn, KA, Devesa, SS, Sigurdson, AJ, et al. Trends in the incidence of testicular germ cell tumors in the United States. Cancer 2003; 97:63.

146. Bray, F, Richiardi, L, Ekbom, A, et al. Trends in testicular cancer incidence and mortality in 22 European countries: continuing increases in incidence and declines in mortality. Int J Cancer 2006; 118:3099.

147. Greenlee R, Murray T, Bolden S, et al. Cancer statistics 2000. CA Cancer J Clin 2000; 50(1): 7.

148. Dixon FJ, Moore RA. Tumors of the Male Sex Organs. Washington, DC: Armed Forces Institute of Pathology, 1952.

149. Templeton AC. Testicular neoplasms in Ugandan Africans. Afr J Med Sci 1972; 3(2): 157.

150. Read G, Stenning SP, Cullen MH, et al. Medical Research Council prospective study of surveillance for stage I testicular teratoma. Medical Research Council Testicular Tumour Working Party. J Clin Oncol 1992; 10(11): 1762.

151. Sankarananarayanan R, Swaminathan R, Black RJ. Global variations in cancer survival. Cancer 1996; 78(12): 2461-2464.

152. Oliver RTD. Testicular cancer. Curr Opin Oncol 2001; 13(3): 191-198.

153. Ries LAG (2007). Cancer survival among adults : U.S. SEERprogram, 1988 2001, patient and tumor characteristics, 276p. pp., U.S. Department of Health and Human Services,National Institutes of Health, National Cancer Institute,Bethesda, MD.

154. Magoha, G.A.O. Overview of prostate cancer in indigenous black Africans and blacks of African ancestry in Diaspora 1935-2007;East African Medical Journal Vol 84 No. 9 (Supplement):s3 Sept 2007 –2007

155. Makwaya CK, Kwesigobo G, Semali AJ, et al, A short-course manual for researchers, 2006, pg 99.

156. Goonewardena SA, De Silva WA, De Silva MV (2004). Bladder cancer in Sri Lanka: experience from a tertiary referral center. *Int J Urol*, **11**, 969-72.

157. Sugandi S. Referral pattern of urological malignancy in Indonesia. Br J Urol. 1989 Jan;63(1):1-3. PMID:2537672[PubMed - indexed for MEDLINE]

158. Ornellas, AA. Management of penile cancer. J Surg Oncol 2008; 97:199.

8.2: APPENDACES

8.2.1: Appendix 1: INFORMED CONSENT FORM (English Version):

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCIES.

DIRECTORATE OF RESEARCH AND PUBLICATIONS.

INFORMED CONSENT FORM:

ID-NO. ____

Consent to participate in a study:

Greetings! Madam/Sir

My name is ……., I am doing this research with an objective of study on the profile of urological malignancies among patients seen at MNH adult wards from March 2010-February 2010.

Purpose of the Study

The study is conducted in partial fulfillment of the requirements for the degree of Master of General Surgery of Muhimbili University of Health and Allied Sciences. It intends to generate information that may be used to improve diagnosis and treatment modalities which can be uniformly adapted to all hospitals in treating patients with urological malignancies.

Participants

If you agree to join the study, you will be interviewed in order to answer a series of questions in the questionnaires prepared for the study.

Confidentiality

All information collected on the forms will be entered into computers with only the study identification number. Confidentiality will be observed and unauthorized persons will have no access to the data collected.

Benefits

If you agree to take part in this study, the information you provide will enable us to explore the profile of urological malignancies in all patients attending MNH surgical wards, and the results from this study may be used in improving diagnosis and treatment modality to be uniformly set in the country.

Risks

We do not expect that any harm will happen to you because of participating in this study.

Right to withdraw and Alternatives

Taking part in this study is completely voluntary. You can stop participating in this study at any time, even if you have already given your consent. Refusal to participate or withdrawal from the study will not involve penalty.

Contact persons

If you have questions about this study, you should contact the Principal investigator:
Dr. Yohana Masonda of Muhimbili University of Health and Allied Sciences, P.O.BOX 65001, DAR ES SALAAM. If you ever have questions about your rights as a participant, you may call Prof. E.F. Lyamuya, Chairperson of the Senate Research and Publications Committee, P. O. BOX 65001, Dar es Salaam. Telephone: +255 22 2152489.

Signature

Do you agree?

Participant agrees…..... Participant does not agree……..

I …….have read the contents in this form. My questions have been answered.

I agree to participate in this study.

Signature/thumb of the participant…….

Signature/thumb of the witness ……

Signature of the Investigator ……...

Date of signed Consent ……

8.2.2: Appendix 2: Informed Consent Form (Kiswahili Version)

CHUO KIKUU CHA AFYA NA SAYANSI ZA TIBA MUHIMBILI,

KURUGENZI YA TAFITI NA UCHAPISHAJI

FORM YA RIDHAA

Namba ya utambulisho _____
Ridhaa ya kushiriki kwenye utafiti.

Shikamoo ,
Naitwa …….nashughulika kwenye utafiti huu kwa lengo la kuangalia kujua uwiano wa ongezeko la magonjwa ya saratani yanayoathiri njia ya mkojo, ili kuweza kupanga njia rahisi ya kuyagundua mapema, pia kuwa na muundo wa matibabu yake unaofanana kwa hospitali za hapa nchini.

Lengo la utafiti
Utafiti huu unafanyika katika kutimiza sehemu ya matakwa ya shahada ya uzamili ya upasuaji ya Chuo Kikuu cha Afya na Sayansi ya Tiba Muhimbili.
Utafiti huu unalenga kutoa taarifa ambazo zitasaidia ili kujua uwiano wa tatizo la saratani zinazoathiri njia ya mkojo, ili kuweka njia rahisi ya kuzigundua mapema, na kuwa na matibabu sahihi ya kufanana kwa hospitali za hapa nchini.

Mshiriki
Ukikubali kushiriki katika utafiti huu, utasailiwa ili kuweza kujibu maswali toka kwenye dodoso lililoandikwa kwa ajili ya utafiti huu.

Usiri

Taarifa zote zitakusanywa kupitia dodoso zitaingizwa kwenye ngamizi kwa kutumia namba ya utambulisho. Kutakuwa na usiri na hakuna mtu yeyote asiyehusika atakayepata taarifa zilizokusanywa.

Kutokana na maelezo haya, nakuomba uwe mmojawapo wa wagonjwa watakaojumuishwa katika utafiti huu.

Faida

Kama utakubali kushiriki kwenye utafiti huu taarifa utakazotoa zitatuwezesha kuangalia uwiano wa saratani zinazoathiri njia ya mkojo ili kuweza kuweka njia rahisi ya kuzigundua mapema na kuweka uwiano wa matibabu yake kwa hospitali hapa nchini.

Madhara

Hatutegemei madhara yoyote kukutokea kwa kushiriki kwako kwenye utafiti huu.

Haki ya kujitoa au vinginevyo

Ushiriki kwenye utafiti huu ni wa hiari. Unaweza kujitoa kushiriki katika utafiti huu muda wowote hata kama umekwishatoa idhini yako. Kukataa kushiriki au kujitoa kwenye utafiti hakutahusisha adhabu yoyote.

Nani wa kuwasiliana naye

Kama una maswali kuhusiana na utafiti huu, wasiliana na mtafiti mkuu Dkt Yohana Masonda wa Chuo Kikuu cha Afya na Sayansi ya Tiba Muhimbili ,P.O.Box 65001,DSM. Kama una swali kuhusu stahili zako kama mshiriki unaweza kumpigia simu Prof.E.F.Lyamuyaa, Mwenyekiti wa Kamati ya Utafiti na Uchapishaji wa Chuo Kikuu cha Afya na Sayansi ya Tiba Muhimbili, P.O.BOX 65001,DAR ES SALAAM. Simu +255 22 2152489

Sahihi

Je umekubali ?

Mshiriki amekubali……., Mshiriki hajakubali…….

Mimi …… nimesoma maelezo ya fomu hii. Maswali yangu yamejibiwa.Nakubali kushiriki katika utafiti huu.

Sahihi ya mshiriki ……

Sahihi ya Mtafiti ……

Tarehe ya kutia sahihi ya idhini ya kushiriki ……

8.2.3 APPENDIX 3: THE QUESTIONNAIRE (English Version)

TOPIC: THE PROFILE OF UROLOGICAL MALIGNANCIES AT MNHADULT SURGICAL WARDS MARCH 2010-FEBRUARY 2011.

(A)PATIENT INTRODUCTION

Serial number_____

1. Hospital admission no._____
2. Patient's name_____
3. Sex: Male ( ) Female ( )
4. Age _____ years.
5. Address: _____
6. Occupation_____
7. Date of admission_____
8. Date of Discharge_____

(B) HISTORY OF ILLNESS

1. Symptoms of Urological malignancy

(i) Dysuria [ ]
(ii) Hematuria [ ]
(iii) Frequency [ ]
(iv) Hesitance { }
(v) Dribbling [ ]
(vi) Poor streaming [ ]
(vii) Incomplete emptying [ ]
(viii) Intermittency [ ]
(ix) Nocturia [ ]
(x) Urgency [ ]

(xi) Urge incontinence [ ]
(xii) Erectile dysfunction [ ]
(xiii) Passage of shreads in urine [ ]
(xiv) Bone pain [ ]
(xv) Urine or fecal incontinence [ ]
(xvi) Paraesthesia or weakness of lower extremities [ ]
(xvii) Abdominal pain [ ]
(xviii) Abdominal mass [ ]

2. History of urinary schistosomiasis in the past
(i) YES ( )
(ii) NO ( )
3. Do you know anything concerning cancer disease?
Explain_____
_____

4. Do you know anything concerning urologic cancers? YES ( ) NO ( )
Explain _____
_____
5. When did the problem you have start? _____
6. How did the problem start?
Just mention symptoms _____
_____
_____
7. There is/are any other person(s) in
your family had/having this problem?
YES ( ) NO ( )
If YES, where did he/she treated _____

8. Do you know any cultural or traditional medicine being used to treat your current problem? YES ( ) NO ( )

If YES, explain_____

(C) SOCIAL HISTORY

(i) Marital status:

(a)Single ( ), (b) Married ( ), (c) Divorced ( ), (d) Widow ( ) (e) Widower ( )

(ii) Are you smoking, or ever smoked cigarette in your life?

YES( ) NO( ).

If yes, what number of pieces per day___ and for how long (in years)___ ?

If stopped, how many years passed since stopped? _____

(iii) Education level;

(a)Primary( ), (b)secondary( ), (c) Others(specify)_____.

(iv) Religion: Muslium( ), Christian( ), Others( )

(D) PHYSICAL FINDINGS

(i) Cachexic ( )

(ii) Regional lymphadenopathy ( )

(iii) Abdominal mass ( ) consistency _____ (soft, firm, hard)

(iv) Penile sores or ulcer ( )

(v) Testicular mass ( ) consistency_____(soft, firm, hard)

(vi) DRE- Mass ( ) consistency_____(soft, firm, hard)

(E) Type of laboratory investigation taken:

(i) PSA

(ii) Prostate trucut biopsy

(iii)Cystoscopy +/- Biopsy

(iv)Blood urea/creatinine

(v)Urine routine

(vi)IVU

(vii)Abdominal-pelvic USS

(ix) CT Scan

(x) Excisional biopsy (penile ulcers)

(F) TREATMENT MODALITY

(i) Are you circumcised? (Only male patients)

YES( ) NO( )

If NO, why? _____

(ii) Conservative (specify) _____

(iii) Endoscope (specify) _____

(iv) Open surgery (specify) _____

8.2.4: APPENDIX 4

DODOSO LA UTAFITI

YAH: UWIANO WA MAGONJWA YA SARATANI YANAYOATHIRI NJIA YA MKOJO KWA WAGONJWA WANAOLAZWA HOSPITALI YA TAIFA MUHIMBILI WODI ZA UPASUAJI WATU WAZIMA KUANZIA MWEZI March 2010- February 2011.

A) UTANGULIZI

Namba ya dodoso _____

1. Namba ya hospitali _____
2. Jina la mgonjwa_____
3. Jinsia: Mme ( ) Mke ( )
4. Umri _____(miaka)
5. Anwani anakoishi _____
6. Kazi _____
7. Tarehe ya kulazwa _____
8. Tarehe ya kutoka _____

B) HISTORIA YA UGONJWA:

1.Dalili ya ugonjwa wa saratani ya njia ya mkojo;

i) Mkojo kuuma ( )

ii) Mkojo wenye damu ( )

iii) Kukojoa mara kwa mara ( )

iv) Kusita kukojoa ( )

v) Mkojo kudodoka kwa matone ( )

vi) Mkojo kutoka mwembamba kwa kubana ( )

vii) Mkojo kutoisha kwenye kibofu ( )

viii) Kujikisia kukojoa muda mfupi tu baada ya kukojoa ( )

ix) Kuamka mara kwa mara usiku kwenda kukojoa ( )

x) Kujisikia ulazima wa haraka kukojoa ( )

xi) Mkojo kutoka bila kutaka kukojoa ( )

xii) Kupungua kwa nguvu za kiume ( )

xiii) Kutoka mkojo wenye nyuzinyuzi ( )

xiv) Kuuma kwa mifupa ( )

xv) kutoka mkojo au haja kubwa pasipo kutarajia ( )

xvi) Ganzi au kukosa nguvu miguuni ( )

xvii) Kuuma kwa tumbo ( )

xviii) Uvimbe tumboni ( )

2.Historia ya kuugua ugonjwa wa kichocho cha mkojo siku za nyuma

i) NDIYO ( )

ii) HAPANA ( )

3.Je unajua chochote kuhusu ugonjwa wa saratani ?

i) NDIYO ( )

ii) HAPANA ( )

Eleza unachofahamu kuhusu saratani

_____

_____

4. Je ulishasikia kuhusu ugonjwa wa saratani ya njia ya mkojo?

Eleza unachofahamu_____

_____

5. Tatizo lako limeanza lini?_____

6. Je tatizo lako lilianzaje?

Taja dalili ulizoziona _____

_____

_____

7. Je kuna mtu/ndugu yoyote katika familia yako mwenye tatizo kama lako?

NDIYO ( ) HAPANA ( )

Kama jibu ni ndiyo, alitibiwa/anatibiwa wapi?_____

_____

8. Je kuna mila/desturi ama tiba za asili ulizowahi kutumia kutibu tatizo lako hili?

NDIYO ( )

HAPANA ( )

Kama jibu ni ndiyo, eleza ulitibiwaje?_____

_____

_____

C) HISTORIA YA KIJAMII

i) NDOA

a) Hujaoa/hujaolewa ( )

b) Umeoa/ umeolewa ( )

c) Mmetengana ( )

d) Mjane ( )

ii) Je unavuta sigara ?

NDIYO ( ) HAPANA ( )

Kama jibu ni ndiyo, ni vipande vingapi au pakiti ngapi kwa siku ?_____

Na umevuta kwa miaka mingapi ? _____

Kama umeacha, ni miaka mingapi imepita?_____

iii) ELIMU;

a) Msingi ( )

b) Sekondari ( )

c) Nyinginezo (Zitaje) _____

iv) DINI:

a) Mwislamu ( )

b) Mkristo ( )

c) Zinginezo ( ) Taja _____

D) DALILI BAADA YA KUPIMWA NA DAKTARI

i) Kukonda kusiko kwa kawaida	( )	
ii) Kuvimba tezi mwilini	( )	
iii) Uvimbe tumboni	( )	[kilaini, kigumu, kigumu sana]
iv) Vidonda sehemu za siri/zakari	( )	[kilaini, kigumu, kigumu sana]
v) Uvimbe kwenye kende/korodani	( )	[kilaini, kigumu, kigumu sana]
vi) Kivimbe kwenye njia ya haja kubwa	( )	[kilaini, kigumu, kigumu sana]

E) Vipimo ulivyowahi kuchukuliwa kwa uchunguzi wa tatizo lako :

(i) PSA

(ii) Prostate trucut biopsy

(iii)Cystoscopy +/- Biopy

(iv)Blood urea/creatinine

(v)Urine routine

(vi)IVU

(vii)Abdominal-pelvic USS

(ix) CT Scan

(x) Excisional biopsy (penile ulcers)

F) MATIBABU:

(i) Je umetahiliwa ?(wanaume tu)

NDIYO ( ) HAPANA ( )

Kama jibu hapana, kwa nini?

_____

ii) Matibabu ya kawaida (Taja)

_____

_____

iii) Matibabu ya endoskopia(Taja_____

iv) Kupasuliwa (Taja)_____