

RESEARCH COMMUNICATION

Incidence of Genitourinary Cancers in the Islamic Republic of Iran: A Survey in 2005**Mohammad Esmaeel Akbari¹, Seyed Jalil Hosseini¹, Alireza Rezaee^{1*}, Mojtaba Mohammad Hosseini¹, Iraj Rezaee¹, Mehrdad Sheikhhvatan²****Abstract**

We here report the incidence of different types of genitourinary cancers among the Iranian population according to the records of the Iran Ministry of Health and Medical Education. In a population-based cancer-registry study in 2005, all recorded data in pathology laboratories, freestanding cancer clinics and treatment centers, physician offices, and other state central registries were obtained with the assistance of Iran Universities of Medical Sciences and sent to the Diseases Management Center in the Health Ministry. The prevalences of urological cancers were as follows: bladder cancer 48.3%; prostate cancer 33.4%; renal cell carcinoma 10.3%; renal pelvis and ureter cancer 0.75%; testicular cancer 6.15%; penile cancer 0.15%; urethral cancer 0.45%; and other unspecified urinary cancers 0.43%. The male to female ratios for the various common urological cancers varied between 1.69 (renal cell carcinoma) and 7.75 (unspecified urinary cancers). The incidence of prostate cancer among our population was dramatically higher than in other countries of Asia. However, bladder cancer was found to be the commonest of the genitourinary cancers, especially in elderly patients, among our population.

Key Words: Genitourinary cancers - incidence - sex ratio - epidemiology

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Introduction

Cancer is a major public health problem entire the world especially in developing countries. Among various types of malignancies, genitourinary cancers have important role that lead to high mortality and morbidity. Furthermore, patterns of these cancers are variable according to time, region, and ethnic groups (Lee et al., 1992). It is, therefore, important to understand the epidemiological features of cancer. Furthermore, improvement of the knowledge toward surveillance of cancer incidence and mortality not only can help to assess the effects of improved diagnostic, screening and intervention measures, but indicates the need for continued promotion of urological cancer screening programs (Cheon et al., 2002). Besides, progress in reducing the burden of suffering and death from cancer can be accelerated by applying existing cancer control knowledge across all segments of the population (Jemal et al., 2006).

In Iran, only limited data are available concerning the incidence of genitourinary cancers. Also, the reported incidence of these cancers was low as compared to the other countries that can at least partly be explained by the lack of nationwide screening programs, young age structure and quality of cancer registration system in Iran

(Sadjadi et al., 2007).

During the last years, the Iran Ministry of Health and Medical Education tried to collect a complete statistical data about different types of cancers and this led to the set of almost forty thousand new cases of cancers in this county. In the present article, we make a report of the incidences of different types of genitourinary cancers among the Iranian population according to the records of the Iran Ministry of Health and Medical Education.

Materials and Methods

In a population-based cancer-registry study in 2005, all recorded data in pathology laboratories, freestanding cancer clinics and treatment centers, physician offices, and other state central registries were obtained with the assistance of staff of Iran Universities of Medical Sciences and sent for analysis to the Diseases Management Center in the Iran Health Ministry. Data submitted were edited for quality and consolidated to remove duplicate cases. Data were then analyzed so that crude, age-adjusted and age-specific annual cancer incidence rates could be produced, and trends in incidence for all cancers and for specific types/sites of cancer by age and sex could be assessed.

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Results

Incidences of urological cancers:

The numbers of each type of urological cancer were as follows: bladder cancer (3,937 cases, 48.3%); prostate cancer (2,722 cases, 33.4%); renal cell carcinoma (842 cases, 10.3%); renal pelvis and ureter cancer (61 cases, 0.75%); testicular cancer (501 cases, 6.15%); penile cancer (12 cases, 0.15%); urethral cancer (37 cases, 0.45%); and other unspecified urinary cancers (35 cases, 0.43%).

Sex distribution of urological cancers:

Of the total 8,147 patients with urological cancers, there were 7,110 males and 1,037 females. Male patients outnumbered females by a ratio of 6.85: 1. Male to female ratios for various common urological cancers varied between 1.69 (renal cell carcinoma) and 7.75 (unspecified urinary cancers) (Table 1).

Age distribution of urological cancers:

The peak incidence of renal cell carcinoma and testicular cancer were noted in the age groups of 60-69 years and 30-39 years, respectively. The peak incidence of other types of cancers was reported in the 70+ age group. Also, the peak of sex ratio in patients with urological cancers was noted in the two age groups of 10-19 years and more than 70 years.

Discussion

It is clear that for reduction of the incidence and mortality rates of genitourinary cancers, epidemiological studies are necessary especially in developing countries with high incidence of these disorders. The epidemiologic pattern of cancers in developing countries differs in many aspects from that of industrialized nations (Basile et al., 2006).

In the present study, we tried to report the incidence of genitourinary cancers in our country and then compare it with the incidences rates of other countries. We found that the most common urological cancers among our population were bladder (48.3%) and prostate (33.41%) cancers. Also, we indicated that the incidence rate of genitourinary cancers were notably higher more in men than women and this difference was especially noted in the two age ranges of 10-19 years (sex ratio:11.34) and more than 70 years (sex ratio:9.74). Similarly, in a study in South Korea, it was shown that the bladder cancer was the most common urological cancer with the incidence of 52% and the peak incidence of urological cancer was noted in the 70+ age group. However, in that study, the incidence of prostate cancer was lower than our study population and estimated as 21.7%. Furthermore, total male to female ratio of urogenital cancers was lower than the present study (5.4 versus 6.85) (Cheon et al., 2002). In another study by Sharma et al. in India in 1994, it was found that the renal and bladder tumors constituted 10.64% and 29.52% of all the malignant tumors of male urogenital tract, however malignant tumors of the testis constituted 0.95% of all urogenital malignancies. Furthermore, they showed that the incidence of prostatic cancer was 20.74% of all

Table 1. Sex Distribution of Urological Cancers in Iran

Type of cancer	Male (%)	Female (%)	Total (%)
Renal cell carcinoma	529 (7.44)	313 (30.2)	842 (10.3)
Renal pelvis/ ureter cancer	40 (0.56)	21 (2.02)	61 (0.75)
Bladder cancer	3,248 (45.7)	689 (66.4)	3,937 (48.3)
Prostate cancer	2,722 (38.3)	0	2,722 (33.4)
Testicular cancer	501 (7.05)	0	501 (6.15)
Penile cancer	12 (0.17)	0	12 (0.15)
Urethral cancer	27 (0.38)	10 (0.96)	37 (0.45)
Other unspecified	31 (0.44)	4 (0.40)	35 (0.43)

malignancies of male urogenital tract or 34.8% of malignancies of male genital tract (Sharma et al., 1994). Comparison of the recent obtained data about the incidence of prostate cancer in Iran to the previous reports showed that the incidence of this organ has been considerably increased over the last 30 years from 1975 to 2005. However, within this period, the incidence of bladder cancer was higher than other types of genitourinary cancers (Habibi et al., 1975). Besides, in a study by Ikemoto et al in Japan in 2003, a high percentage of renal cancers were detected incidentally between 1990 and 1999, whereas prostatic cancers were more likely than other cancers to be detected with the incidence of 10.5% (Ikemoto et al., 2003). However, the investigation in the United States and Canada as two developed countries showed that both countries experienced a gradual rise in prostate cancer incidence rate over the last years and this increasing was more dramatic in the United States than in Canada (McDavid et al., 2004). This increased rate has been also reported in Japan (Nakata et al., 1998), and Slovak Republic (Plesko et al., 2004).

According to the results of our study and similar previous epidemiological investigations, it can be concluded that among various types of genitourinary cancers, the incidence of prostate cancer among our population was dramatically higher than other countries even the region countries. In addition, similar to other populations, bladder cancer is the commonest genitourinary cancers especially in elderly patients among our population. Therefore, public programs should be focused on designation of population-based protocols for the screening and prevention of these common cancers especially in the elderly. Also, determination of the main predictors of the incidence of these malignancies, especially prostate and bladder cancers, for the implementation of these programs .

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