Original Article

Evaluation of 5 Years Trend of Occurrence for The Genital System Carcinoma Amongst Women Yazd Province

2006-2010

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Abstract

Introduction: According to some studies in the western countries, %12.7 of total female cancers and %9.8 of all deaths resulted from cancers. And dead's in females are due to genital system carcinoma.

Materials & Methods: The present analytic cross sectional study was done on the cancer registry data of Yazd province for the evaluation of trend of genital carcinoma occurrence amongst females from 2006 to 2010. The trend of cancer incidence was calculated according to age, year of occurrence, family history, income, and job and residence place. Data was analyzed using student T-test and chi-square test.

Results: Higher percentages of cancer were seen amongst age above 50 years, married women and householders. Majority of those had education level of primary (%40.5) and moderate income level (%49.6). The highest incidence rate was related to year 2010 (%30) and uterus cancers including body & endometrial was more common than others (%42.7). The association between cancer incidence and age ($p<.001$) also disease occurrence and marital status ($p=.03$) were statistically significant. Cancers of uterus and cervix among subjects with age above 50 and cancer of ovary among females under 30 years was more common.

Conclusion: our results showed that the incidence rate of genital carcinoma amongst Yazd females had an increasing trend from 2006 to 2010 and socio- economic factors had significant role in causing cancer. This is the same indicator coming from developing countries where community health is influencing from socio-economic and environmental changes.

Key words: Cancer, Genital, Female, Trend, Yazd, Iran

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Introduction

Cancer is one of the most important healthcare problems in the world and also in Iran. In developed countries, after cardiovascular disease, cancer is the second cause of mortality. In our country, after cardiovascular diseases and accidents, it is known as the third leading cause of death [(1)]. According to information obtained from developed countries, 12.7% of all malignancies in women belonged to genital cancers [(2)]. And 9.8% of all cancer mortalities in women are related to these malignancies [(3)].

Cervical cancer is known as: 1) the Second most common women's cancer in the world, 2) The fifth Fatal cancer among women and 3) the most common cancer of women in developing countries [(4)]. 15% of all malignancies in women from developing countries are due to cervical cancer. 70% and 4.4% of incidence of cervical cancer is respectively in developed and developing countries [(5)].

Ovarian cancer is the second most common cancer in women [(6)]; whereas it is more common in developed countries [(7)].The mean age at diagnosis of ovarian cancer is 51 years, while only 10% of the cancer belongs to the age under 40 [(8)]. 90% of ovarian cancer is due to ovarian surface epithelial tumors and its five-year survival rate is 40% [(9)].

Endometrial cancer is the most common cancer of genital tract in developed countries; the highest rate is in the Europe [(9)]. this cancer is responsible for 7% of all cancers In women,, particularly after postmenopausal. And its incidence increases with ageing [(2)].

About 473,000 new cases of cervical cancer and 253,500 related deaths are recorded annually [(4)]. Whereas the annual incidence rate of ovarian cancer is 9-17 cases per 100,000 women [(8)].

In the United States, specific incidence rate of endometrial cancer reaches a peak at age of 70-74 years (100.7)That is 2.85 times greater than what is reported for age 50-54 years (38.9) and in white females younger than 50, were 2.19 times more than black females [(10)].

Vietnam, cervical cancer incidence and mortality rates are respectively 26 and 13.5 cases per 100,000 women. While its annual incidence rate in Mexico City is 50 cases per 100,000 women [(11)]. Incidence rate of ovarian cancer in Japan is 6.4 and in South America is 7.7 and the lowest incidence is for Asia and Africa [(6)].

In 2004, number of deaths from cancer of cervix, ovary and uterus,in Iran, were 326, 205 and 229 cases respectively. and in 2008, 663 cases of cervical cancer, 1096 cases of ovarian cancer and 907 cases for uterine cancer were reported. And raw incidence rates per 1000 were 1.94, 3.21 and 2.67 respectively [(12)]. Since no analytical study has been done in recent years with respect to the secular trends of genital

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system carcinoma amongst women of Yazd provience,in Iran, , the present study aimed to explore the incidence rate of 5 years (2006-2010) occurance according to epidemiological charactristics of person, place and time.

Materials & Methods

This is a descriptive - analytic, cross-sectional study. information from women, with genital cancers (Endometrial, ovarian, cervical, etc…) were diagnosed and recorded by the Pathology Centers of Yazd province, were extracted from the year 2006-2010. Data were collected using questionnaires including items like personal data such as age, occupation, income, education, family history, age of occurrence, location, and also includes information of cancer pathological grading, morphology, topography and the behavior. After obtaining informed consent, information collected through recorded data at health center and also telephone contact with the patient or his/her family. Populations obtained from providence census center during the years 2006 to 2010, were used for the denominator of rates. All available patients from different parts of the province were referred to reference pathology ward of the Yazd providence and after confirmation were included in the study.

After collecting and reviewing information, we analyzed data using SPSS software version 11.5, descriptive statistics (e.g. percentages, ratios, mean, and standard deviation) and statistical tests (such as chi-square, student t-test). To show annual trends of cancers, we used the Proportional charts such as Polygon Diagram.

Results

In this study, data from women who had genital cancers (Endometrial, ovarian, cervical, etc…) diagnosed and confirmed by the Pathology Centers, were extracted from the years of 2006-2010. According to Our findings, during the years 2006 to 2010, 117 new cases of genital cancer were diagnosed in Yazd. Of detected cases, 18.8% were for cervical cancer, 42.7% for uterine cancer, 33.3 %for ovarian cancer and 5.1 % for other types such as Vulvar and vagina. Frequency distributions of demographic characteristics of the patients are shown in Table 1. According to the table, these cancers are more common in women who are over 50 years old, married and housewives; most of them had elementary education level (40.5%), the average income was about 500-700 thousand Tomans. and 76.1% of cases belonged to the Yazd city (center of provincial).

Table 2 shows the frequency distribution of the variables related to onset of clinical characteristics of genital cancers in subjects. Based on table 2, the highest incidence (30%) is for the year 2010. cancers were diagnosed early; thereby most of the patients (36%) referred in the early stages of the disease (grade 1 or 2) and only about 2.6% of them were referred with advanced stages. Of cancers, uterine cancers were the most frequent ones (42.73%) and most of the patients (84.6%) had no family

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background. Only relationship between incidence rate and marital status (p-value= .034) and age (p-value = .001) was significant. The majority of patients were married, and only 5% were unmarried who is related to diagnose with ovarian cancer and these people were not suffering from other types of genital cancers.

According to analysis tests, it is clear that the majority of women aged over 50 years, at the time of diagnosis are at an advanced stage of the disease. Also, 63% of diagnosed cases at the advanced stages were living in Yazd city. Highest frequency of cancer in housewives and employed women were seen for cervical cancer (45%) and ovarian cancer (47.1%) respectively.

The highest incidence of genital cancer amongst low-income people was endometrial cancer (53.33%), and in middle income group was Ovarian cancer (37.9%) and in the high-income group were uterine and ovarian (each one 42.9%).

Figure 1 shows the overall incidence and the incidence of genital cancers during 2006-2010 in Yazd. The general trend is incremental. During 2005 to 2006 the incidence has decreased from 5.7 to 3.7 per 100,000 and afterwards, during 2006 to 2010 it has increased again. In terms of age, most cases belonged to the age group of > 50 (annual incidence = 97.7 per 100,000) and the lowest for the age group < 30 (annual incidence = 6.3 per 100,000). Genital cancer incidence rises with increasing of age.

Table 1: Frequency distribution of demographic characteristics of patients with genital cancer during 2006-2010

Variable		Percent	frequency
Age	30 > years old	11.1	13
	30-50 years old	41.9	49
	50< years old	47	55
Occupation	Housekeeper	38.5	100
	Employed	14.5	17
Education level	Illiterate	31	36
	Primary	40.5	47
	Guidance	9.5	11
	Diploma and higher diploma	19	22
Marital Status	Married	95.7	112
	un Married	4.3	5
Habitat	Yazd	76.1	89
	Around Yazd	23.9	28
Income (Tomans)	<500,000	38.5	45
	500-700,000	49.6	58
	>700,000	12	14

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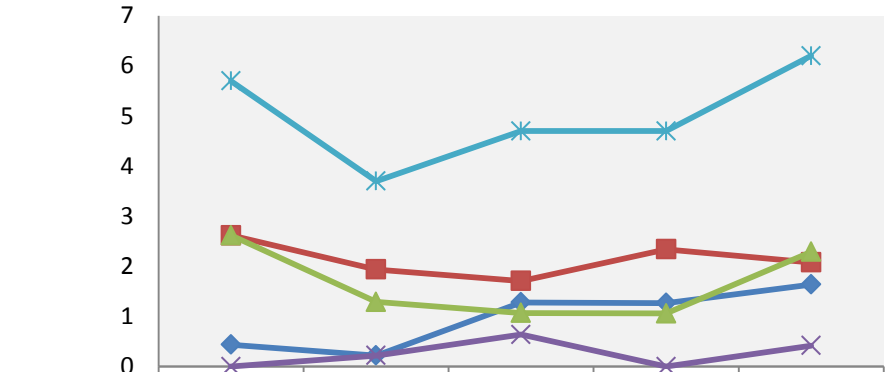
Table 2: Frequency distribution of variables associated with genital cancer incidence and characteristics of studied sample (2006-2010)

Variable		percent	frequency
Years of incidence	2006	22.2	26
	2007	14.5	17
	2008	18.8	22
	2009	18.8	22
	2010	5.6	30
Tumor grade	Grade 1	19.7	23
	Grade 2	16.2	19
	Grade 3	2.6	3
	Grade 4	0	0
	Not Specified	61.5	72
Location of cancer	cervical	18.8	22
	uterus	42.73	50
	ovary	33.3	39
	Other (Vulvar, vagina, ...)	5.1	6
Family history	Yes	15.4	18
	No	84.6	99
Individual's status	Live	80.3	94
	Died	19.7	23

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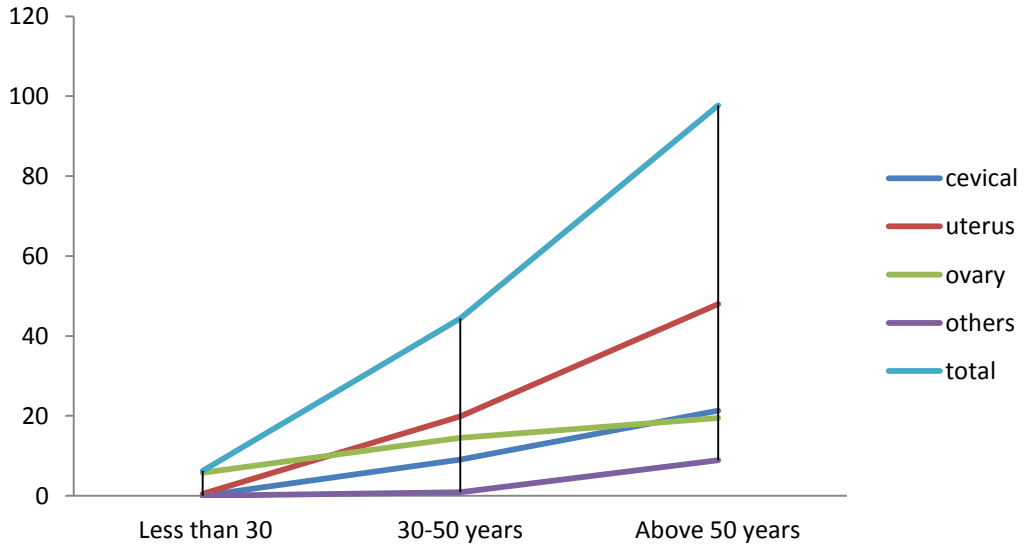
Figure 1: The 5-yeartrend of incidence of genital cancers in women in Yazd province during 2006- 2010 years

(per 100,000 people)



	85	86	87	88	89
cervical	0.44	0.22	1.28	1.27	1.64
uterus	2.62	1.94	1.71	2.34	2.08
ovary	2.62	1.29	1.07	1.06	2.29
others	0	0.22	0.64	0	0.42
total	5.7	3.7	4.7	4.7	6.2

Figure 2: Annual incidence of genital cancer in Yazd by age during 2006-2010 (incidence per 100,000)



Conclusions

Results showed, in the genital cancers, uterine cancer has the highest rate (about 42.7%). Cervical and ovarian cancers are in the second and third rank respectively. In the western

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countries, endometrial cancer is the most common genital cancer (46%) and cervical and ovarian cancers come next [13] which is consistent with our findings. While in Gynecologic Oncology Congress in April 2006, it was reported that the most common genital cancers in women are cervical, ovarian and endometrial cancers [14] that seems to be inconsistent with the mentioned results. In other studies in Tehran Jorjani Hospital [3] Mashhad Ghaem Hospital [15] and pathology centers in Birjand [2] it was reported that the most common genital cancers in women were cervical, ovarian and uterine cancers. Since between genital cancers, cervical cancer is in the lowest rate in Yazd, it can be inferred that over the recent years full effective and reliable screening methods have been applied for this cancer.

According to our findings, most cases of genital cancers were above the age of 50 years (47%). Results of a study done in Birjand showed that 47% of the pathology reports was related to the age 40-59 years [2]. Another study conducted in Tehran by Shahzad et al, The most common age range was 45-54 years [3]. According to the Iran National Cancer Registration in 2008, highest specific incidence of cervical and uterine cancer was in the age group above 85 years and for ovarian cancer was in the age group 55-59 [12]. In this study, the annual incidence of genital cancer increased with age; and it is consistent with findings of the developed countries and mentioned studies [16].

Our finding revealed that 36% of the patients were diagnosed in the early stages and only 2.6% of them were with advanced stages and the majority of women aged over 50 years, at the time of diagnosis were at the advanced stage of the disease. A study performed in Florida about epidemiology of cancer stated that 61% of patients were in the early stages and 27% in advanced stages, and most of this patients were in age group above 65 years [17] that is consistent with our findings.

As a result, the general trend of genital cancers between the years 2006-2010, has been rising. So that after a reduction in 2006-2007, the incidence rate in the year 2007 rose from 3.7 to 6.2 in 2010. In a study conducted by Haghighi et al, the frequency of internal genital neoplasm, were increased; So that the 5.9% and 14.5% was in 1996 to 2005 respectively [2]. Prevalence of The malignancies in Plovdiv was increased from 37.7 in 1986 to 58.64 (per 100,000 cases) in 1996 [18].

In this study, the highest rate of genital cancers was for endometrial cancer. Considering that obesity and diabetes are risk factors for endometrial cancer and these factors are common in Yazd provience, the high rate of this cancer in Yazd is justified. Therefore, to reduce rates of cancer in Yazd, it is recommended to pay more attention to Screening and management for diabetes. And also to prevent obesity, educational programs and Monitoring is suggested.

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In conclusion, our results showed that genital cancer incidence among Yazdi women had an increasing trend during the years 2006- 2010 and social factors had a significant role in it. The results are similar to community health indicators in developing countries, affected by changes in environmental and social factors. Therefore, we recommend educating women through media, videos, brochures and classes and notifying about signs and timely referral.

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