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Epidemiology And Trend Of Skin Cancer Incidence In Sistan And Baluchestan Province, Iran.

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ABSTRACT

Skin cancer is one of the most common cancers worldwide. More specifically, it is the leading cancer for Iranian men and the second most common cancer in Iranian women. Being aware of the epidemiological situation and the trend of the disease is necessary for further studies and better planning for prevention. This study aims to investigate the epidemiology, and trend of skin cancer incidence in Sistan and Baluchestan province. This study was A reanalysis of available data that extracted from the National Cancer Registry System and the Disease Management Center of Iranian Ministry of Health between 2003 and 2008. Age Standardized incidence rates (ASIR) were calculated using the world standard population. The crude incidence rate (CIR) were also computed. During the study period, the total number of 323 skin cancer cases occurred. Among these cases, there were 188 men and 135 women. In this regard, the incidence of skin cancer in Sistan and Baluchestan province is decreased and the rate of incidence declined from 3.84 and 3.76 in 2004 to 1.95 and 1.79 in 2008 (in women and men, respectively). Moreover, in both sexes, skin cancer incidence is increased with age. And the incidence rate was higher in men than in women. the age-specific incidence rates of skin cancer in Sistan and Baluchestan province is decreased, but the total number of sufferers is increasing.

This study recommends educating people about skin cancer prevention and identification of its risk factors.

Keywords: Epidemiology, trend, skin cancer, incidence, iran

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INTRODUCTION

Nowadays, the prevalence of non-communicable diseases is rapidly rising in the world[1-3]. The main reasons for this issue are population ageing, increasing and prolonged exposure to risk factors, and changing lifestyles[3-6]. One of the non-communicable diseases is cancer, being responsible for 9% of all deaths and the second leading cause of deaths in the world[7]. Cancer, defined as an abnormal growth of cells, can affect any tissue or organ of the body[1].

Skin cancer is one of the most common cancers worldwide[8]. Statistics show that skin cancer is the most common form of cancer in the Middle East[9]. Moreover, in Iran, skin cancer is the leading cancer in men and the second most common cancer among women[10, 11]. This form of cancer includes 5.2 to 32.7 percent of the total number of recorded cancers in Iran[12]. Although the number of deaths caused by skin cancer is low, it has huge negative economic impacts on the health care system and substantial morbidity. Skin cancer also leads to significant physical and psychological sufferings that are much more painful than dying from it[13-15].

There are two major types of skin cancers including malignant melanoma and non-melanoma skin cancers. A non-melanoma skin cancer includes basal cell carcinoma and squamous cell carcinoma and is one of the most common types of cancers[16]. Approximately 40 percent of all malignancies are allocated to NMSC [17].

Skin cancer is caused by many factors; these factors are categorized into two groups: host factors and environmental factors. Host factors include genetic factors[18], chemical exposure (arsenic) and smoking. Environmental factors include: geographic position, temperature and air pressure, sunshine hours, and exposure to ultraviolet radiation[19, 20]. Environmental factors are the most important risk factors for skin cancers[21]. With respect to the sun radiation in most seasons, and due to not using proper protective equipment -such as clothing and hats-when working outdoors, the incidence of skin cancer is expected to be high in Iran[22, 23]. Pattern and incidence of this cancer is significantly different due to the ethnicity and geographic location of the population[24, 25]. Since the intensity of UV radiation in the southern regions of Sistan and Baluchestan province is too high, it is important to evaluate skin cancer in this province[26].

Although skin cancer is one of the most common cancers, it is also considered to be one of the most preventable cancers[27, 28]. With regard to this issue and since the first step to plan for cancer prevention and treatment is being aware of the epidemiological situation and trend of the disease[29]; this study is conducted to investigate the epidemiology, rate, and trend of skin cancer incidence in Sistan and Baluchestan province.

METHODS

This secondary data analysis study was carried out based on longitudinal program the province of Esfahan in Iran that have national registry of cancer (NCR) which is trying to identify all cases of cancer occurring in Iran. Data used in this study were obtained from NCR, and disease control and prevention of ministry of health and medical education in Iran for 2005–2008 [30]. More details about cancer registry in Iran were previously published [31, 32]. In this study, data on the incidence of skin cancer were selected according to the International Classification of Diseases‑Oncology(ICD10) with the code C44 for age groups and sex [33]. Age Standardized incidence rate (ASIR) were calculated using the world standard population. The crude incidence rate (CIR) were also computed. To describe incidence time trends for 4 years studied.

RESULTS

Cancer registry center statistics show that in 2004 to 2008 the trend of skin cancer incidence in Sistan and Baluchestan province is downward. The reduction is observed for both sexes. In 2004 the age-standardized incidence rate of skin cancer per 100,000 persons was 3.76 and 3.84 for men and women, respectively. In 2008, this rate changed into 1.79 and 1.95 per 100,000 populations (Figure 1).

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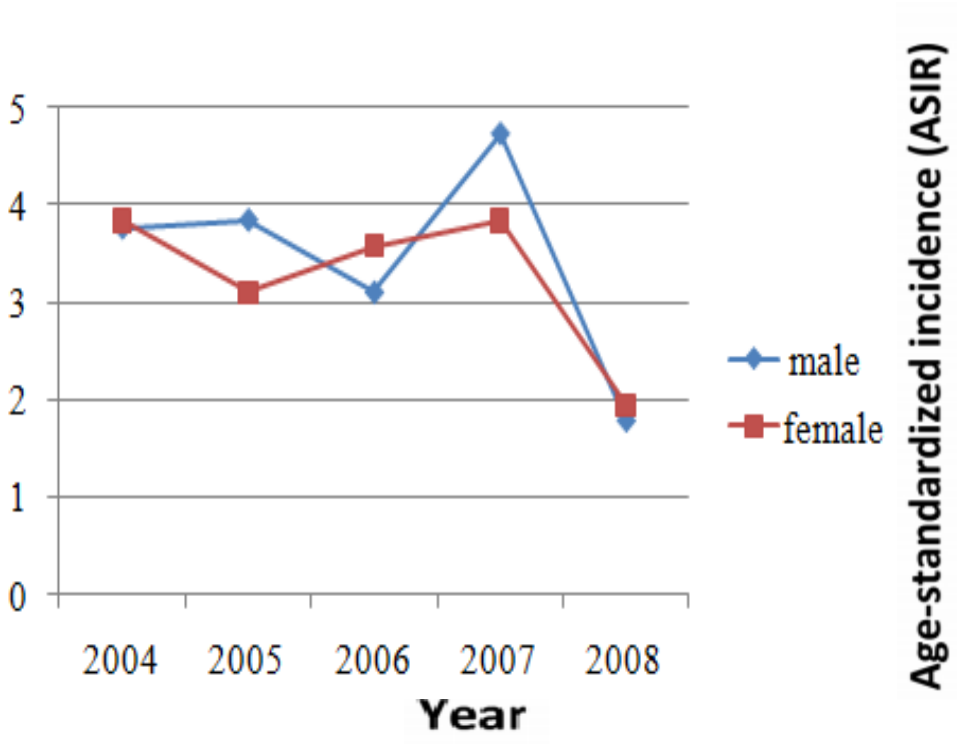

Fig.1. ASIR trend of skin cancers in Sistan and Baluchestan by sex between 2004 and 2008

Furthermore, the results of this study show that the number of skin cancer cases reported during these years in Sistan and Baluchistan province is totally 323 cases, among them are 188 men and 135 women. The highest incidence rate belongs to the year 2007, 78 cases, and the lowest incidence rate belongs to the year 2006, 57 cases.

Another result of this study is that there is a difference in standardized incidence ratio in different age groups. So that, by increasing age the incidence rate of skin cancer increases. The age group 80 to 84 has the highest standardized incidence ratio in both sexes. Moreover, during the study period, the trend of reducing skin cancer incidence is determined in all groups. Sexually, the incidence of skin cancer in men was higher than women. So that, the sex ratio (men to women) was 1.39. (Table 1).

Table1. ASIR of skin cancers by sex in Sistan and Baluchestan during 2004 to 2007

year	2004		2005		2006		2007	
Age	Female	male	Female	male	Female	male	Female	male
0-4	0.00	0.00	0.00	0.00	0.00	0.98	0.00	0.00
5-9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10-14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15-19	0.00	0.00	0.00	0.00	0.00	0.00	0.61	0.00
20-24	0.00	0.00	0.00	2.60	0.00	0.00	0.82	0.87
25-29	0.00	0.00	0.00	0.00	0.00	0..97	0.00	0.00
30-34	1.30	0.00	1.19	0.00	1.19	2.38	0.00	0.00
35-39	7.67	1.48	0.00	5.44	0.00	1.36	1.41	5.4
40-44	3.38	3.45	1.55	1.59	1.55	1.59	12.55	1.59
45-49	4.59	6.00	2.11	3.68	4.22	3.68	12.66	9.19
50-54	18.05	3.39	4.74	3.12	2.37	12.48	14.74	9.36
55-59	15.48	7.37	14.24	3.39	14.24	10.17	21.36	13.55
60-64	28.98	19.38	26.66	17.82	17.78	11.88	26.66	20.79
65-69	0.00	7.46	9.85	10.29	19.69	10.29	4.92	24.01
70-74	0.00	48.74	11.32	24.91	11.32	0.00	16.98	14.94
75-79	0.00	22.42	19.25	27.50	48.12	13.75	0.00	48.13
80-84	28.74	88.13	26.43	81.07	79.30	0.00	26.43	40.54
85+	0.00	0.00	0.00	108.75	0.00	81.57	0.00	27.19

DISCUSSION

The results of this study show that the incidence of skin cancer in Sistan and Baluchestan province has declined. Moreover, Noorbala et al's survey show that the incidence rate of skin cancer in Iran is lower than western countries, this may be caused by different dressing habits [34]. According to the study conducted in Yazd and also Hall et al's survey, in the tropic regions using sunscreen, walking in the shade, and wearing protective clothing was higher in people who have got sunburned during their life- compared to those who have not experienced getting sunburned. This may be because people who have experienced getting sunburned, became aware that getting sunburned can increase the risk of being diagnosed with skin cancer. So, they adopted more protective behaviors. In other words, the main purpose of adopting protective behaviors is to prevent getting sunburned for the second time [35].

However, generally, skin cancer is one of the most common cancers in Iran[36, 37] and its incidence rate is increasing[4]. Abedipour's survey showed that Weste Azerbaijan, Tehran, Markazi, and Lorestan provinces have the highest incidence rate in skin cancer. The lowest incidence rate is also belongs to Gorgan province[38]. Part of this increase in incidence may be due to more accurate records for cancer incidence and more coverage of the Iran's cancer registry system[39, 40]. More exposure to sun light, more ageing population, being exposed to different risk factors, increasing the outdoor activities, changes in clothing habits, Ozone depletion, genetic disorders and in some cases the immune system are the key factors that increase skin cancer incidence rate[41, 42]. Investigating the sex frequency distribution during 2004-08 showed that the incidence rate of skin cancer has always been considered to be higher in men than in women. In most cases, in different parts of the world men are significantly more diagnosed to skin cancer compared with women[43, 44]. In Noorbala et al's study the sex ratio of males to females is 1 to 6, being similar to other population sex ratios[34]. Ghoncheh et al. also reported higher incidence rate of skin cancer in men compared with women[45]. This may be due to men's more contingency with risk factors because of their jobs, men's lifestyle, including underestimating their attractiveness, not performing sun-protective behaviors (using sunscreen products)[46-48].

According to the results of this study, the age group 80 to 84 has the highest age-specific incidence rate. This result is consistent with the findings of previous studies. According to a study conducted in Tehran province, increase in skin cancer incidence in all age groups in Tehran province may be related to more exposing to environmental risk factors and changing the lifestyle. The highest age-specific incidence in 80 to 84 age group may be due to population ageing in the country, including in Tehran province. Since the incidence of many cancers increases with age, increasing the skin cancer incidence can be justified with population ageing[49]. Given that the maximum exposure to sunlight is during childhood and adolescence and by considering the fact that this issue plays a major role in developing skin cancer[34, 50], it is necessary to conduct training programs in this age in areas with high prevalence in order to reduce exposure to sunlight and perform protective activities[51]. On the other hand, if skin cancer is identified and diagnosed in early stages, it would be curable. So skin cancer prevention and early detection is very important[4]. One of the best ways to achieve this goal is educating the population and health service providers- including general medicine- in order to take effective steps to reduce serious damages of this disease by early detection of skin cancer[52, 53].

CONCLUSION

The age-specific incidence rates of skin cancer in Sistan and Baluchestan province is decreased, but the total number of sufferers is increasing. This study recommends educating people about skin cancer prevention and identification of its risk factors.

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