# RESEARCH ARTICLE

# Common Cancers in Khuzestan Province, South West of Iran, during 2005-2011

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**Abstract**

    **Cancer is the third highest cause of premature mortality in Iran. We aimed to determine trend of common cancers in Khuzestan province, Iran. Methods: It was a hospital based survey on 4065 subjects from their hospital files, those had registered as cancer case in Shafa hospital which has known as a biggest center of cancer in khuzestan province, Iran during 2005-2011.All data has entered by SPSS (version 19), descriptive statistic and adjusted odds ratio of common cancers for age and sex were calculated from multiple logistic regression model. Results: From all subjects; (51% & 49%) were male and female respectively. The most frequent age group was 60-50 years and common cancers were breast 16%, colorectal 6.3%, blood 2%, lung 8% and stomach 8%. Conclusion: Prevalence of cancers has increased markedly with age in Khuzestan Providence. Therefore, it is essential to prevent through early prevention, using screening and identifying cases in initial stages.**

**Keywords:** Cancer - trend - epidemiology - Khuzestan- Iran

## Introduction

Cancer is one of the most common causes of death worldwide, which incidence of cancer will be increased approximately 45% in developing countries in 2025 (Parkin, 2005). In some countries, cancer is the second leading cause of death while in Iran, it is the third highest cause of premature mortality. Cancer is considered as one of the most important health problems in many developed as well as developing countries (Mehrabani, 2008; Saki Malehi, 2014). According to the aging of world population, it is predicted to occur approximately 70% of malignancies in the age group above 65 years to 2030 (Balducci, 2005; Jie Liu, 2014). At the present, there are annually 9 million new cases of cancer, 4 and 5 million in developed and developing countries respectively(Jie Liu, 2014).There are approximately 76,000 new cases of cancer annually. Cancers cause 662.4 (DALY) per hundred thousand ,that skin and stomach cancer have respectively first and second (Akbari, 2008; Keramatinia, 2014).

Based on new calculations of International Agency for Research Cancer (IARC), deaths due to cancer were more than 7.6 million people in 2008 worldwide. It is likely to reach to 13.1 million deaths per year in 2030, and developing countries will have the highest rate (i.e70% of cancer deaths (Jemal, 2010; Saki Malehi, 2014).

The rate of death due to cancers is increased in male population while a slightly decrease is observed in women. The increase of cancer death rate in men can developed by

lung cancer, and in women the decrease of this rate can be because of made progress in the treatment cancers such as uterine, stomach, liver, and especially cervix. Increasing the risk of death from lung cancer in either gender is evident and visible. An increase in smoking among female population has led to increase the incidence of lung cancer among them. The frequency of breast cancer is 2.5 times than lung cancer in females, but according to that there are the significant differences in response rates to treatment between these two malignancies, lung cancer is the first cause of death from cancer among women. Considering the different distribution of cancers in the world and the importance of cancer in any country, it is essential to identify and determine the pattern and type of cancers to do planning at national contribution for cancer control (; Mehrabani, 2008; Saki Malehi, 2014). This study aimed to determine trend of common cancers in the Khuzestan province, Iran, during 2005-2011 (Somi, 2006).

## Materials and Methods

It was a hospital based survey on 4065 subjects in Shafa hospital which has known as a main center of cancer in khuzestan province which has located in sought west of Iran during 2005-2011.

We had permission to collect the data from authority of Shafa hospital. Data has collected from hospital files of all subjects those have been registered as cancer patient during 7 years in Shafa hospital. All data has coded,

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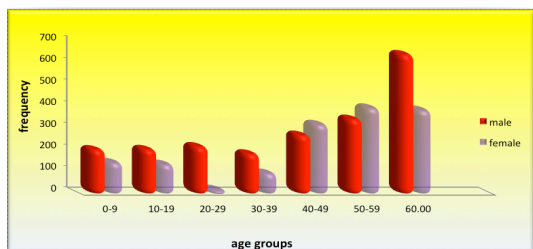
entered and analyzed by SPSS software (version 19), frequency and adjusted odds ratio of common cancers for age and sex were calculated from multiple logistic regression model.
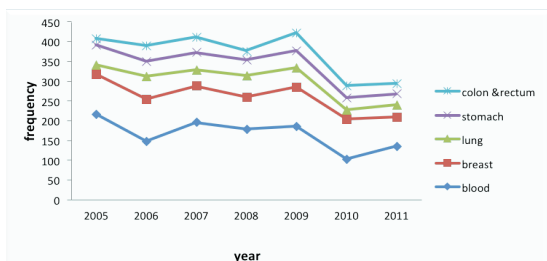
## Results

Findings of this study have shown that 4065 cancer patients had reported. Out of them 51% were male, and 49% were female. The mean age was 50 years (in men 55±10 and in women 57±12). The most frequent age group was 60-50 years (Figure 1).

Trend of cancer has changed over 7 years. In total, trend of cancers in male as well as female had decreased during this time. Almost frequency of cancers in male was more than female. Regression analysis revealed that this trend was significant (p=0.05) (Figure 2, Table 1).

Frequency of five common cancers in male as well as female has shown in figure 3. Common cancers in female were breast, colorectal, and blood, and in male were lung, stomach, and blood.



**Figure 3. Frequency of five common cancers by sex during 2005 - 2011**

## Discussion

Prevalence of common cancers in patients has shown a steady increase with age and incidence of malignancies was more in male than female except breast cancer.

In this study blood cancer had most frequency in patients 28%, and it was highest rate in the men and second highest rate in women. Previous study in Iran, 2008 had performed that Fars and Isfahan had fourth and fifth ranks in this cancer (Jemal, 2010).

In our study, breast cancer in women was first common cancer (16%), and it was confirmed with previous study in Iran, which had shown 23% of all cancers (Akbari 2008; Keramatinia, 2014), also was confirmed with highest rates were seen in North and Sought America and Western European, and it was contrast with minimum level can be observed in Japan( Jemal, 2010) and Asian countries. Factors influencing this increase are not entirely clear, but it can be due to air pollution in Khuzestan, Western lifestyles, consumption of fast foods, obesity, smoking and less physical activity (Colditz, 2005; Popkin, 2006).

Lung cancer is the most common cancer that can be seen all over the world, but its geographical distribution
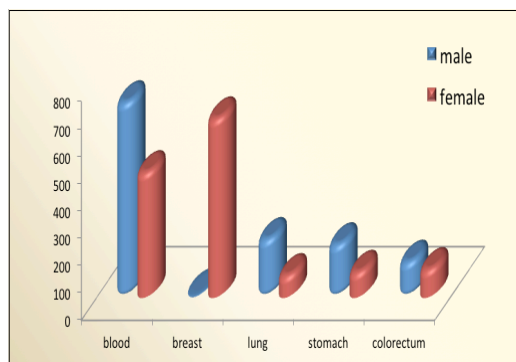


**Figure 1. The Frequency of Five Common Cancers by Age and Sex (2005-2011)**



**Figure 2. Trend of Five Common Cancers in Male and Female Over 7 Years**

**Table 1. Adjusted OR of Common Cancers Using Logistic Regression**

| Cancer Type | Gender | Frequency | Percentage (%) | B | S.E. | p-value | Adjusted OR | 95% C.I.for OR Lower | Upper |
|---|---|---|---|---|---|---|---|---|---|
| Blood | Both | 1158 | 28.5 | -0.693 | 1.225 | 0.571 | 0.5 | 0.045 | 5.514 |
| | Male | 707 | 34.2 | | | | | | |
| | Female | 451 | 22.6 | | | | | | |
| Lung | Both | 280 | 6.9 | -0.45 | 0.06 | 0 | 0.638 | 0.567 | 0.718 |
| | Male | 206 | 10 | | | | | | |
| | Female | 74 | 3.7 | | | | | | |
| Colorectum | Both | 219 | 5.4 | -1.024 | 0.136 | 0 | 0.359 | 0.275 | 0.469 |
| | Male | 123 | 6 | | | | | | |
| | Female | 96 | 4.8 | | | | | | |
| Stomach | Both | 273 | 1.4 | -0.492 | 0.271 | 0.069 | 0.611 | 0.36 | 1.039 |
| | Male | 187 | 1.7 | | | | | | |
| | Female | 86 | 1.1 | | | | | | |
| Breast | Both | 655 | 16.1 | -0.777 | 0.13 | 0 | 0.46 | 0.356 | 0.594 |
| | Male | 7 | 0.6 | | | | | | |
| | Female | 648 | 32.4 | | | | | | |
| Total cancer | Both | 2585 | 100 | 0 | 0.003 | 0.894 | 1.1 | 0.994 | 1.2 |
| | Male | 1230 | 48 | | | | | | |
| | Female | 1355 | 52 | | | | | | |

show obvious and logical changes. It is common in developed countries, especially in North American and Europe, and less common in developing countries, particularly in Africa and South America (Siegel, 2013). As lung cancer epidemic is decreasing but in developed countries has growing trend (Siegel, 2013). In this study, lung cancer included 8% of all cancers and received fifth ranks, more observed in male than female. According to national reports from cancer registries, the frequency of lung cancer in Iran was 4%, and in Busher and Isfahan provinces were 3.6% and 4.3% respectively (Akbari, 2008). The reason could be developed by smoking, air pollution, range of agricultural activities, high levels of toxins, industries and electricity generation plants and strong magnetic fields.

Despite reduction in the incidence of stomach cancer in the world, new cases of cancer are increasing each year because of enhancing human lifespan In Iran, northern, central and western regions, and southern are considered high, moderate an low prevalence respectively (Sadjadi, 2007). Unlike a study in Ardebil- 50% of stomach cancers in Cardiac region- the highest incidence was observed in the non-cardiac region (Hajiani Eskandar SSMH; Somi, 2006). Helicobacter pylori is not necessarily the main cause of stomach cancer in this area, and other factors such as excessive use of tobacco (especially cigarettes), High nitrate diet (Malekzadeh, 2009) and using homemade pickles, widely popular among the people can be considered (Somi, 2006).

Colorectal cancer is one the most common cancers over the world (Akhavan et al., 2014). Different factors like environmental factors, genetic factors, behavioural and metabolic risk factors have been suspected in etiology and outcome of these tumors. Colorectal cancer is the third and fifth common type of cancers seen in Iranian women and men respectively (Azadeh et al., 2008). In our study, colorectal cancer included 6% of all cancers and received fifth ranks, more observed in men (57%). The frequency of this cancer was 6.3% in Fars province and received fourth ranks (Akbari, 2008; Keramatinia, 2014). However, it has been rising in Khuzestan in recent decades in both sexes, depended on dietary habits and lifestyle.

In concluded prevalence of cancers has increased markedly with age in Khuzestan Providence. Therefore, public education and promotion of healthy lifestyle should be actively carried out, and also it is essential to prevent through early prevention, using screening and identifying cases in initial stages.

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