



## A Study of Cancer Prevalence in Hormozagan Province During 2011

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**ABSTRACT:** The aim of this study was to investigate the prevalence of cancer disease based on cancer registry data in Hormozgan province during 2011. A descriptive study conducted between all the cancer patients who referred to hospitals in Hormozgan province, south of Iran during 2011. Age-standardized incidence (ASR) and CIR were calculated by estimation for the population. The frequency and prevalence were recorded and coded using International Classification for Disease for Oncology (ICD-O). Percent frequency was reported and chi-square test was used for comparison between groups. 392 cases of cancer were recorded including 180 women (45%) and 212 men. The incidence of cancer was 24.69 and in two genders were 25.4 and 23.4 in 100,000, respectively. The most prevalent cancers between men and women were gastrointestinal and breast cancer, respectively. More than half of all cancers were reported in subjects older than 55 years. Gastrointestinal and breast cancer were more prevalent between men and women, respectively.

**Keywords:** Prevalence, Cancer, Neoplasm, Hormozgan

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### INTRODUCTION

In recent decades non-communicable diseases are the most important causes of morbidity and mortality in the world. Cardiovascular disease, diabetes and cancer incidence rate is increasing in the world particularly in developing countries (Mokarian, et al., 2011). About 12.7 million cancer cases and 7.6 million cancer deaths are estimated to have occurred in 2008 worldwide, with 56% of the cases and 64% of the deaths in the economically developing world. Breast cancer in females and lung cancer in males are the most frequently diagnosed cancers and the leading cause of cancer death for each sex in both economically developed and developing countries, except lung cancer is preceded by prostate cancer as the most frequent cancer among males in economically developed countries (Jemal et al., 2011).

Cancer is the third reason of death after cardiovascular disease and accidents in Iran (Naghavi et al., 2009). The prevalence of diseases is partly due to increased life expectancy and adoption of western lifestyle (Brown et al., 2012). Few national programs according to WHO guidelines for cancer screening and prevention are active in Iran (Mousavi et al., 2008). It was reported that the incidence rate is 98-100 to 100,000 populations annually and the most prevalent cancers in male was gastrointestinal and in female was breast cancer (Mousavi et al., 2009). Variation in cancer incidence in geographical locations is due to different lifestyles and risk factors. Diet

and socio-economic position have been identified as important for the etiology of cancer but patterns are changing and inconsistent (Rohani-Rasaf et al., 2013).

Accurate statistics on the cancer burden are essential, both for purposes of research and for setting priorities in healthcare management. So that in vast countries with partial registration coverage, such as Iran, local data are more useful (Moradpour et al., 2013). The prevalence and rate of morbidity and mortality could be helpful for health systems to organize the services, medical management of disease and focus on the type of cancer could be important to study the causes, control of them and lower the frequency of the patients. The aim of this study was to perform an epidemiologic survey of all cancer diseases which were recorded through a cancer registry, hospital based program in Hormozgan province, south of Iran.

### MATERIAL AND METHODS

This is a descriptive study based on Hormozgan cancer Registry data in the Center of Management and Control of Disease during 2011. All the cancer patients who referred to hospitals in Hormozgan province included. Age, gender were recorded. Age-standardized incidence (ASR) and CIR were calculated by the estimation for population in Hormozgan which was obtained from population census in 2011. The software of

medical documents (ADS9) was used. The frequency and prevalence were recorded and coded using International Classification for Disease for Oncology (ICD-O) (Fritz and Ries, 2000).

The data analyzed by SPSS software version 16. Demographic data and Frequency of the patients were reported by crude number and percentage. Chi-square was used for comparison between to gender and  $p < 0.05$  considered significant.

## RESULTS

During 2011; 392 cancer were recorded including 180 women (45%) and 212 men. The incidence of cancer was 0.00024696 and in two genders were 0.0002544 vs. 0.000234, respectively which is 24.69, 25.4 and 23.4 subjects in 100,000.

The five high prevalent cancer in women were breast (27%), gastrointestinal (15.6%), skin (11%), cervix

and ovary (11%), hematologic (5%) and in men were gastrointestinal (18%), prostate (14%), skin (11%), hematologic and lymph node including 11% and 10.9%, respectively. More prevalent gastrointestinal cancers were in stomach and colon segment for men and women, respectively. The frequency and ASR of cancers was showed in table1.

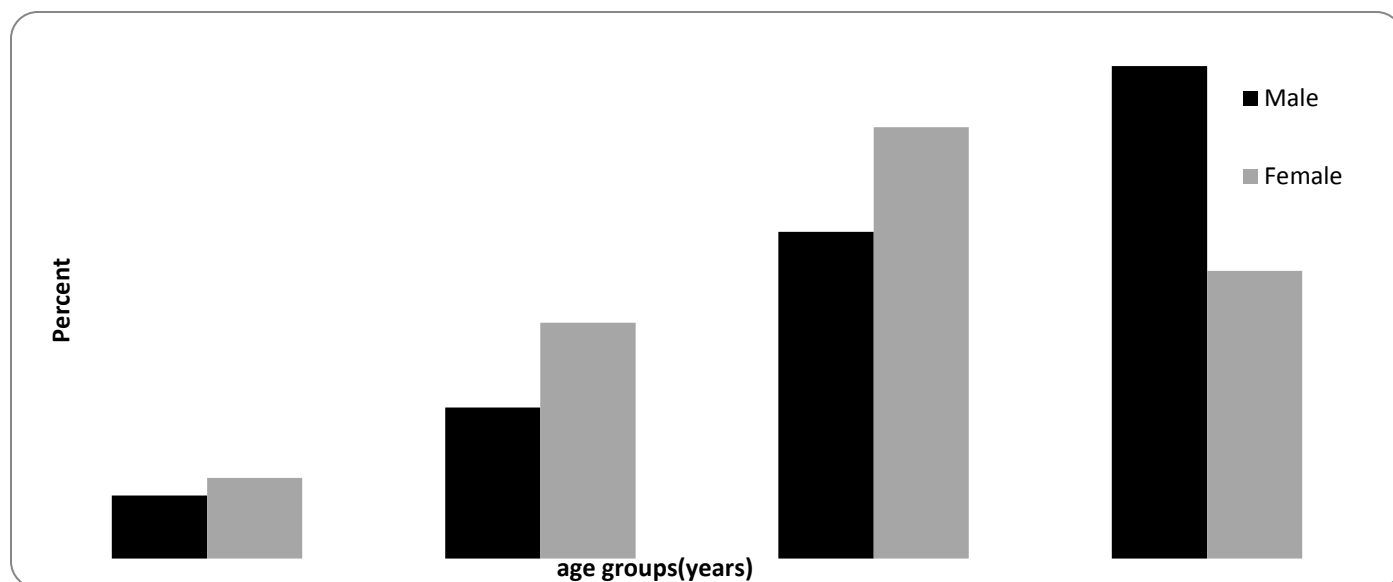
Higher prevalence of cancer was observed in the age group older than 60 years old (39.2%).

More than half of all cancers were reported in subjects older than 55 years. Age pattern of the disease as shown in figure1 was significantly different between male and female subjects ( $p < 0.0001$ ).

Mean age of the men and women with cancer were 56 and 51 years old. 47.7% of female subjects were older than 60 years old and 52% were aged 40-65 years. In female group, women aged 55-60 years had the highest incidence (14%) of cancer but in men group was 11.8%.

Table1- Age standard incidence-rate of cancers per 100,000 population in Hormozgan province during 2011

	ICD	Number		percent		Crude rate per 100000		ASR per 100000	
		male	female	male	female	male	female	male	female
Lip and oral cavity	C00-C06	1	2	0.5	1.1	0.00001	0.00002	0.26	0.22
Parotid and salivary gland	C09-C13	0	1	0	0.6	0	0.00001	0	0.11
Esophagus	C15	4	5	1.9	2.8	0.00004	0.00005	1.05	0.57
Stomach	C16	23	11	10.8	6.1	0.00023	0.00011	6.03	1.26
Small intestine		4	1	1.9	0.6	0.00004	0.00001	1.05	0.11
Colon and rectum	C18-C21	11	12	5.2	6.7	0.00011	0.00012	2.88	1.37
Gall-bladder	C23-C24	0	2	0	1.1	0	0.00002	0	0.22
Pancreas	C25	3	0	1.4	0	0.00003	0	0.78	0
Larynx	C32	3	0	1.4	0	0.00003	0	0.78	0
Lung	C33-C34	8	2	3.8	1.1	0.00008	0.00002	2.10	0.22
Thymus	C37	1	0	0.5	0	0.00001	0	0.26	0
Bone	C40-C41	2	1	0.9	0.6	0.00002	0.00001	0.52	0.11
Hematology system	C42	22	9	10.4	5	0.000022	0.00009	5.77	1.03
Skin	C44	24	19	11.3	10.6	0.00024	0.00019	6.30	2.18
Sarcoma-soft parts	C49	3	2	1.4	1.1	0.00003	0.00002	0.78	0.22
Breast	C50	2	48	0.9	26.7	0.00002	0.00048	0.52	5.50
Cervix uteri	C53	-	11	-	6.1	-	0.00011	-	1.26
Corpus uteri	C54	-	3	-	1.7	-	0.00003	-	0.34
Ovary	C56	-	9	-	5	-	0.00009	-	1.03
Prostate	C61	29	-	13.7	-	0.00029	-	7.61	-
Testis	C62	6	-	2.8	-	0.00006	-	1.57	-
Kidney	C64-C65	5	1	2.4	0.6	0.00005	0.00001	1.31	0.11
Bladder	C67	16	0	7.5	0	0.00016	0	4.20	0
Retinoblastoma	C69	0	3	0	1.7	0	0.00003		0.34
Brain and CNS	C70-C72	4	2	1.9	1.1	0.00004	0.00002	1.05	0.22
Thyroid	C73	2	9	0.9	5	0.00002	0.00009	0.52	1.03
Adrenal	C74	1	0	0.5	0	0.00001	0	0.26	0
Lymph node	C77	19	7	9	3.9	0.00019	0.00007	4.98	0.80
Metaplasia		2	6	0.9	3.3	0.00002	0.00006	0.52	0.68



**Figure1.**Frequency of cancer incidence in male and female patients for different age groups

## DISCUSSION

ASR of cancer in Hormozgan province during 2011 was 24.6 in 100,000. Gastrointestinal and breast cancer were more prevalent in men and women subjects, respectively. Mean age of the patients were 54 years old. The highest prevalence of cancer was in 55-60 years old patients, in both genders.

Gastrointestinal cancer were more prevalent in male than female subjects and stomach cancer were higher than the other kind of gastrointestinal disorders but lower than European countries which the ASR for gastric cancer were reported as follow: 44 in Italy, 25 for French population and 26 in Holland (Botter-Weck et al., 2000), and in south of Iran it has been reported as follow: Fars province 5.5, Khuzestan 0.3, Kerman 10, which was less than northwest; Ardabil 49.1 (Sadjadi et al., 2003). Nutritional habits (low vegetable and fruit consumption), genetic factors and *Helicobacter pylori* infection were mentioned as the causes of gastric cancer (Cover and Peek, 2013).

Like the other studies for female subjects breast cancer ranks first among cancers with a crude incidence rate and ASR of 17.4 and 23.1 (Sadjadi et al., 2003). A few small studies suggest that mean age of breast cancer incidence was lower than women in developed countries (Harirchi et al., 2004). The prevalence of women's breast cancer in Fars province and Tehran was reported 13 and 17.09 per 100000, respectively (Masoompour et al., 2011) and (Mousavi et al., 2006).

The ASR of cancer in the north is more than in the south of Iran and ASR of all cancers per 100,000 in Hormozgan during 2005-6 were reported 38 and 36 for men and women respectively (Mousavi et al., 2008). In our study during 2011, skin cancer was in third place of

cancers for both sexes. Only in a national study by Mousavi et al. skin cancer prevalence reported besides gastrointestinal and breast cancer for men and women, respectively but in regional studies skin cancer paid less attention because of lower rate of incidence. Skin cancer in our province might be due to long exposure to sunlight, or non-protected skin against UV lights which need more attention and specific designed studies for this kind of cancer.

There were limitation in this study including; descriptive cross-sectional nature of the study which could be a background for longitudinal studies in this region of country, and follow up the patients for mortality and surveillance rate. Cancer registries could help to declare the burden of cancers by collecting data and development of effective health-care strategies for cancer patients.

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