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Esophagus Cancer Incidence among Females in Golestan Province, Iran (2004)

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The main aim of this study was to find and describe province-specific estimates of incidence in females by age groups for esophagus cancer. The data used in this study were collected in a cancer registry that was conducted by Health Deputy of Golestan province for a period of 1 year (2004). The age distribution was collected according to the following age strata: 0-4, 5-9, 10-14, 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65-69, 70-74, 75-79, 80-84 and 85 above. Esophagus cancer data was identified and collected through the 18 Pathology Laboratory centers (where female populations referred to these centers) in Golestan province. A total of 348 primary cancer cases were captured. From these 32 cases was esophagus cancer. There were 26 squamous cell carcinoma (81.25%), 1 adenocarcinoma (3.12%). Esophagus cancer incidence among females in Golestan province was 7.62/100000. But esophagus cancer with the highest ASR: 127.91/100,000 was in age 75-79. The incidence of esophagus cancer in age over 75-79 has risen sharply and it was the lowest in age 30-34 (ASR: 1.68/100,000). For the present time it can be said that esophagus cancer in females appear to be one of the most prevalent and serious type of cancer (especially squamous cell carcinoma) in Golestan province and esophagus cancer is rising with ageing.

Key words: Females esophagus, cancer incidence, Golestan province

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INTRODUCTION

Cancer is becoming a leading cause of death in many countries of the world. In 1984, over half of the annual world total of 5.8 million new cancer cases was reported from developing countries (Parkin *et al.*, 2005). Many studies demonstrate that cancer incidence among different people are heterogeneous. Esophageal cancer is the sixth most common cause of cancer mortality worldwide. The incidence of this disease shows a striking geographic variation in the world; a 20 fold variation is observed between high-risk China and low-risk western Africa (Parkin *et al.*, 2005). Geographic variability is even more marked when smaller units are studied; for example, when comparisons are made among countries or even within countries. It seems that the environmental carcinogens responsible show important geographic differences (Munoz and Day, 1996). In Europe and North America, 90% of esophageal cancer is caused by tobacco plus alcohol. In the high risk countries of South America, hot beverages, particularly hot mate are important (Parkin *et al.*, 1999). Esophageal cancer is one of the most common malignant tumors with a high incidence in such regions as China, Iran, South Africa, Uruguay, France and Italy (Lu *et al.*, 1999). Some of the highest rates occur in northern China and Northern Iran, where incidence exceeds 100 in 100,000 individuals; in the US., the incidence is less than 5 per 100,000, although rates are nearly quadruple for African Americans (Fisher and Brady, 1998). Annually, it is estimated that 15,560 Americans will be diagnosed with esophageal cancer and 13,940 will die of this malignancy. Of the new cases, it is estimated that 12,130 will occur in men and 3,430 will occur in women (American Cancer Society, 2007). Iran is one of the known areas with a high incidence of esophageal cancer. Most of the patients in Iran have been reported from the North and Northeast regions of the country. In one survey by the Iran Cancer Institute, 9% of all cancers and 27% of gastrointestinal cancers were esophageal carcinoma. The male to female ratio was 1.7/1 (Ghavamzadeh *et al.*, 2001). A recent report from Ministry of Health shows that more than 70% of deaths are caused by cardiovascular diseases, injuries and cancers, while fewer than 3% of deaths are the consequence of infectious or parasitic diseases. Therefore understanding and quantifying the burden of cancer as one of the three major causes of death in the country is essential (Naghavi, 2000). Study of cancer cases in this region during the 1996-2000 period showed that Age-Standardized Rates (ASR) for esophageal cancer in females was 36.3/100000 (Semnani *et al.*, 2006). In 2002 and 2003 two separate reports of population based cancer

registries were published from Iran. These reports showed that Age-Standardized Rates (ASR) for esophageal cancer in females was 14.4/100000 (Sadjadi *et al.*, 2002). The main aim of this study was to find and describe province-specific estimates of incidence by age groups for esophagus cancer in the year 2004.

MATERIALS AND METHODS

The data used in this study were collected in a cancer registry that was conducted by Health Deputy of Golestan province in Iran for a period of 1 year (2004). This study focuses on female cancer registry. Golestan province is located in North of Iran (South East of Caspian Sea). The collected data included population distribution by gender (female) and age, divided into five-year intervals. The age distribution was collected according to the following age strata: 0-4, 5-9, 10-14, 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65-69, 70-74, 75-79, 80-84 and 85 above. Different cancer data was identified and collected through the 18 Pathology Laboratory centers (where male populations referred to these centers) and using a structured questionnaire, trained personnel conducted in-person interviews to collect information on esophagus cancer in the Golestan province. The newly diagnosed cases detected by histopathological, cytological examinations. These were then sent to the Cancer Registry Office of the province and to the registry unit in the Health Deputy. Age-specific rates, annual age-adjusted rates (ASRs) per 100,000 person years were calculated using the direct methods of standardization to the world population. The data were summarized in a data sheet and coded using the ICD-O. The data were recorded at different levels due to a need for correct registration. This has been done by iarccrgtools-203 software.

RESULTS

A total of 348 cases with cancer from all sites were captured during the one year period, 2004. From these 32 (9.20%) was females esophagus cancer. There were 26 squamous cell carcinoma (81.25%), 1 adenocarcinoma (3.12%). The incidence for squamous cell carcinoma was the highest in Golestan province. The results from Golestan province Cancer Registry for the year period 2004 show that cancer of esophagus is the second common cancer of women. The Annual Specific Rate (ASR) is 7.62 per 100,000 in females. The highest esophagus cancer incidence among females in Golestan province was in age 75-79 (ASR: 127.91/100,000). The esophagus cancer incidence according to age specific

Table 1: Esophagus cancer incidence among females in Golestan province in 2004

Ages (year)	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
Persons	69465	84583	112921	123107	89519	67719	59689	52192	35723	29885	28116	21321	13615	8240	8614	3909	2923	1818
Incidence rates (per 100000)	.*	-	-	-	-	-	1.68	1.92	2.80	3.35	17.78	14.07	36.72	46.54	46.44	127.91	34.21	55.01

*: - No cancer incidence

was as follow: in ages 0-4, 5-9, 10-14, 15-19, 20-24 and 25-29 no esophagus cancer incidence (ASR: 0.00/100,000), in age 30-34 (ASR: 1.68/100,000), in age 35-39 (ASR: 1.92/100,000), in age 40-44 (ASR: 2.80/100,000), in age 45-49 (ASR: 3.35/100,000), in age 50-54 (ASR: 17.78/100,000), in age 55-59 (ASR: 14.07/100,000), in age 60-64 (ASR:36.72/100,000), in age 65-69 (ASR: 48.54/100,000), in age 70-74 (ASR: 46.44/100,000) in age 75-79 (ASR: 127.91/100,000), in age 80-84 (ASR: 34.21/100,000) and in age over 85 (ASR: 55.01/100,000). The incidence of esophagus cancer in age 75-79 has risen sharply and in age 30-34 it was the lowest. The esophagus cancer incidence according to age specific is shown in Table 1.

DISCUSSION

Esophagus cancer is a relatively rare form of cancer, but some world areas have a markedly higher incidence than others: China, India and Japan, as well as the United Kingdom, appear to have a higher incidence, as well as the region around the Caspian Sea. Annual incidence is between 0.6-6 per 100,000 for females (Stewart *et al.*, 2003). The findings of this study showed that esophagus cancer is one of the most common cancers in the Golestan province among females. The registry showed that the annual ASR for esophagus cancer was 7.62 per 100000 populations among females (the second common cancer). Comparison of the ASR for esophagus cancer among females in Golestan province with those of esophagus cancer worldwide show that the Golestan province is lower –risk areas than other places. The incidence of esophagus cancer rises from age 30 years old (ASR: 1.68/100,000) and is highest in age 75-79 years old. There are many factors for incidence of esophagus cancer. Diet certainly plays an important role. Risk is increased by high intakes of some traditionally preserved salted foods, especially salted fishes and cucumber. Risk is probably increased with the use of pesticide in agricultural products in this area such as some cucumber, tomatoes, strawberry and etc., using deposed wheat's and corns contaminated with aflatoxin, hot tea drink habiting, change in lifestyle, the high caloric and fatty diet intake. Risk is decreased by high intakes of fruits and vegetables which may be in part related to their vitamins A, C and E

content (Cheng and Day, 1996). Excessive use of tobacco and alcohol has clearly been shown to be a risk factor for esophagus cancer (Warwick and Harrington, 1973). In fact, it is estimated that 90% or more of the risk of esophageal cancer in Western Europe and North America can be attributed to tobacco and alcohol (Munoz and Day, 1996). The incidence of esophageal cancer in the Golestan province was lower when compared with other places in the world, which may be related to the relatively low consumption of alcohol in the region. The increasing consumption of cigarettes smoking has also been clearly accepted as increasing the risk of esophagus cancer (WCRF, 1997). However there are cases of esophageal cancer in people of this area who have never taken alcohol nor smoked cigarettes in their lifetime. This finding calls for further study, as there is a high prevalence of smoking in some cities of Golestan province, which maybe tends to increase esophageal cancer rates. Compared with the data of 1999-2000 (Semnani *et al.*, 2006), 2002 and 2003 (Sadjadi *et al.*, 2002) the incidence of esophageal cancer is much lower. This decrease can be attributed to better economic status and personal health, better nutrition and changing in high-risk behavior (Malekzadeh *et al.*, 2004; Pourshams *et al.*, 2005). Clinicians should follow recommended screening guidelines and encourage their patients before age 30 and older (in this area). Clinicians should also ensure that patients at high risk for esophagus cancer are identified and offered appropriate referrals and treatment. Continued research is needed on the causes, prevention and treatment of esophagus cancer. In this area the incidence of esophagus cancer is started from age 30 years old onward. The age specific esophagus cancer among females maybe is the second cause of cancer deaths (after breast cancer) in Golestan province. For the present time it can be said that esophagus cancer (especially squamous cell carcinoma) in females appear to be one of the most prevalent and serious type of cancer after stomach cancer in Golestan province and is rising with ageing. Thoughtfully designed epidemiological and clinical studies are pivotal to unravel the details of why and how these are happening and help to plan what should be done to combat effectively with these still deadly diseases. Therefore, further studies to look for the etiology and possible risk factors seem logical.

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REFERENCES

- American Cancer Society, 2007. Cancer Facts and Figures. Atlanta, Ga: American Cancer Society.
- Cheng, K.K. and N.E. Day, 1996. Nutrition and esophageal cancer. *Cancer Causes Control*, 7 (1): 33-40.
- Fisher, S. and L. Brady, 1998. Esophagus. In: Principles and Practice of Radiation Oncology, Perez, C.A. and L.J. Brady (Eds.). 3rd Edn. Philadelphia, PA: Lippincott-Raven, pp: 1241-1256.
- Ghavamzadeh, A., M. Iravani, M. Jahani, M. Rastegarpanah and A. Moussavi, 2001. Esophageal cancer in Iran. *Semin Oncol.*, 28 (2): 153-157.
- Lu, S., P. Lin, G. Wang, X. Luo and M. Wu, 1999. Comprehensive prevention and treatment for esophageal cancer. *Chin. Med. J.*, 112 (10): 918-923.
- Malekzadeh, R., M. Sotoudeh and M.H. Derakhshan *et al.*, 2004. Prevalence of gastric precancerous lesions in Ardabil, a high incidence province for gastric adenocarcinoma in the Northwest of Iran. *J. Clin. Pathol.*, 57 (1): 37-42.
- Munoz, N. and N. Day, 1996. Esophageal Cancer. In: *Cancer Epidemiology and Prevention*, Schottenfeld, D. and J.F. Fraumeni (Eds.). 2nd Edn. Oxford University Press, New York, pp: 681-706.
- Naghavi, M., 2000. Death report from 10 provinces in Iran. Tehran, Ministry of Health.
- Parkin, D.M., P. Pisani and J. Ferlay, 1999. Global cancer statistics. *CA Cancer J. Clin.*, 49 (1): 33-64.
- Parkin, D.M., F. Bray, J. Ferlay and P. Pisani, 2005. Global cancer statistics. 2002. *CA Cancer J. Clin.*, 55 (2): 74-108.
- Pourshams, A., M. Saadatian-Elahi and M. Nouraie *et al.*, 2005. Golestan cohort study of oesophageal cancer: Feasibility and first results. *Br. J. Cancer*, 92(1): 176-181.
- Sadjadi, A., M. Nouraie, M.A. Mohagheghi, A. Mousavi-Jarrahi, R. Malekezadeh and D.M. Parkin, 2002. Cancer occurrence in Iran in 2002, an international perspective. *Asian Pacific J. Cancer Prev.*, 6 (3): 359-363.
- Semnani, S., A. Sadjadi, S. Fahimi, M. Nouraie, M. Naeimi, J. Kabir, H. Fakhri, H. Saadatnia, M.R. Ghavamnasiri and R. Malekzadeh, 2006. Declining incidence of esophageal cancer in the Turkmen Plain, Eastern part of the Caspian Littoral of Iran: A retrospective cancer surveillance. *Cancer Detect. Prev.*, 30 (1): 14-19.
- Stewart, A., B.W. Stewart and P. Kleihues, 2003. World cancer report Lyon: IARC, ISBN 9283204115.
- Warwick, G.P. and Harrington, 1973. Some aspects of the epidemiology and etiology of cancer of esophagus with particular emphasis on Transkei, South Africa. *Adv. Cancer Res.*, 17 (81): 229.
- WCRF, 1997. Panel. Diet, nutrition and the prevention of cancer: A global perspective. Washington, DC, USA: World Cancer Research Fund.