

Annually Incidence of Esophagus Cancer in the Hakkari City of Eastern Anatolia

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ABSTRACT

AIM: Esophageal cancer is one of the common causes of morbidity and mortality in the Eastern Anatolia region of Turkey. Yet no data exists in the literature about the annual incidence of esophagus carcinoma from this region of Turkey.

METHODS: Since September 2011 through August 2012, all endoscopy and pathology records have been retroactively researched. All newly-diagnosed esophagus cancer patients were recorded and patient demographic data were entered spss 16.0. Mean ages of all cases were calculated. The authors calculated crude age-specific and age-adjusted incidence rates (AAIR, world standard population). We used 2011 midyear population estimates supplied by Provincial Health Directorates as denominators.

RESULTS: The annual incidence of cancer in the region was estimated to be 8/100000 (male: 8.8/100000, female: 7.2/100000). The rate of occurrence was one esophageal cancer for every 69 endoscopy interventions. This is quite a high rate.

CONCLUSION: In conclusion, the identified incidence rate is remarkably high. However, our result may be considered as a low incidence value because patients who visited other cities through a violation of the referral chain would result in an increase in these figures. In conclusion, 8/100000 may be accepted as the lowest incidence rate for this region. Considering the area's relatively low

socioeconomic status, high consumption of nitrite- and nitrate-containing food, and preference for drinking extremely hot beverages all potential etiology factors, further studies should be performed to better elucidate the precise etiologic risk factors.

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Key words: Incidence; Esophagus; Cancer; Eastern Anatolia

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INTRODUCTION

Esophageal cancer is one of the common causes of morbidity and mortality in the Eastern Anatolia region of Turkey^[1]. Yet no data exists in the literature about the annually incidence of esophageal carcinoma from this region of Turkey. In this study the authors aimed to find newly diagnosed cases of esophageal cancer and determine the incidence of esophageal cancer in the city of Hakkari. This will be achieved using data from the one and only endoscopy center in this region

METHODS

The city of Hakkari has four central locations; Centrum, Yüksekova, Şemdinli and Çukurca. According to 2011 data from Turkish Statistics Corporation; 147.567 men and 124.598 women live within city borders. Before 2011, no endoscopy unit was located in the city; all of the patients, needing endoscopy were referred to other cities by the first-line health centers. After July 2011, we built an endoscopy unit in Hakkari city and all the patients who lived within city borders and who needed endoscopies were referred to us. Between September 2011 and August 2012 all endoscopy and pathology records have been retroactively researched. All newly diagnosed cases of esophageal cancer were recorded and patient demographic data was entered spss 16.0. Mean ages of all cases was calculated. We calculated crude, age-specific and age-adjusted incidence rates (AAIR, world standard population). We used 2011 midyear

population estimates supplied by Provincial Health Directorates as denominators.

RESULTS

When the endoscopy records between September 2011 and August 2012 were examined, 1523 patients who underwent upper gastrointestinal system endoscopy were allocated. 13 male [age: 61±13 Standart Deviation (SD), 38-80 range] and 9 female (age: 62±11 SD, 43-75 range) patients (total 22 patients, age: 61±12 SD, 38-80 range) with newly diagnosed esophageal cancer were found. Of these, three (14%) were adenocarcinoma and 19 (86%) were squamous cell carcinoma.

Based on the site of occurrence, tumours were located in the middle one-third of the esophagus in 8 (36%) patients and in the lower one-third of esophagus in 14 (64%) patients.

Based on these results, the annual cancer incidence in the region is estimated to be 8/100000 (male: 8.8/100000, female: 7.2/100000). The rate of occurrence was one esophageal cancer for every 69 endoscopy intervention.

DISCUSSION

Previous studies reported that upper gastrointestinal system cancers were more common in the Eastern part of Turkey^[2,3]. In addition, the annual esophageal cancer incidence of Iran, our neighbour on the east border, was reported to be high (109-174/100000)^[4]. Studies from Turkey generally reported the occurrence rate of cancer during endoscopy, but the annual incidence had not been reported before. Furthermore, it is difficult to determine the incidence of newly-diagnosed cancer patients in those cities, as multiple endoscopy centers are present in those cities and geographic conditions make it possible for patients to admit themselves to other centers outside the city.

Hakkari city is located in the southeastern corner of Turkey. It shares contiguous borders with Iran and Iraq. It is not easy to reach Hakkari, as the city is surrounded by steep mountains. Our center is the only endoscopy center in the city and all patients who require endoscopy are sent there from peripheral districts according to the referral chain. Therefore, we conducted a retrospective study to determine esophageal cancer patients in an attempt to identify the annual incidence of the disease in this city. We obtained population data of 2011 from Turkish Statistics Corporation. Online access to population data is possible in our country. Habitants who live in a province are recorded in the system according to their address information. Hakkari province is one of the least developed regions in terms of socioeconomic aspects. Thus, little change of error exists in system records, as financial aid is based on the population data. Our result may be considered as the lowest incidence value, because patients who went to other cities through a violation of referral chain, would only lead to an increase in these figures.

Topcu and friends from Van (the neighbour city of Hakkari) reported that esophagus cancer is most common cancer among women with a proportion of 20.2% and the second most common cancer among men with a proportion of 10.7% among all diagnosed cancer cases in Van region^[1].

Bozkurt *et al*^[5] reported that esophageal cancer is the sixth most common cancer in Şırnak province, it was 3.28% of all cancer types.

For the study of Eser and friends incidence of, esophageal cancer in the eight different regions of Turkey ranges 1.5 to 14.1 per 100000 (average: 4.7). These cities have multiple endoscopy centers. Design of the study is based on hospital registration. The highest incidence of this study 14.1 per 100000 is from Erzurum in the east Anatolia

region^[6].

Turkdogan *et al* reported a rate of one esophageal cancer for every seven esophagogastrosocopy operations in the Van province. Of the patients, 90% were epidermoid and 10% were adenocarcinoma^[2]. In our study, esophageal cancer rate was one cancer for every 69 operations. The ratio of epidermoid /adenocarcinoma was 86% /14%.

Lower socioeconomic status, smoking, alcohol, dietary N-nitroso compounds, consumption of food or beverages at high temperatures are among the suspected etiologic factors^[7-12]. Turkdogan *et al*^[13] reported higher nitrite and nitrate levels in local food when compared to standard levels. In the study of Binici and coworkers, lower consumption levels of fresh fruit and vegetable were considered as additional etiologic factors^[3]. In the study of Onuk and coworkers, no relationship was shown between smoking and alcohol consumption. Lesser consumption of fresh vegetables and fruit, higher consumption of salt and polyunsaturated fat, in addition to the regional habit of drinking hot tea known as kitlama were founded to be positively associated with esophageal cancer. When consuming kitlama tea, locals do not mix the sugar with the tea; rather, they put the sugar under their tongue and it slowly dissolves while they drink the tea. Normally, mixing sugar into the tea reduces the temperature of tea to some degree. In the kitlama method, the tea remains hot; this may increase the risk of esophageal cancer^[14].

In our study, considering the high rate of esophageal cancer, genetic predisposition, lower socioeconomic status, smoking, high nitrite and nitrate containing food consumption and extremely hot beverages may be considered among the risk factors. Our region is similar to the Van province. Türkdogan *et al*^[13] considered high levels of nitrite- and nitrate- in food and water. Similar to Van, in Hakkari province, lower socioeconomic status, high rate of smoking, bread baked by wood fires and bread baked by burning animal manure, cheese with added herbs and hot beverages may be considered as the risk factors, in addition to genetic predisposition.

For the first time, we determined an incidence rate for this region as 8 in 100000. This may be important support for future studies.

CONCLUSION

The identified incidence rate is quite high. However, our result may be considered as the lowest incidence value, because patients who went to other cities through a violation of the referral chain would only lead to an increase in these figures. In conclusion, 8/100000 may be accepted as the lowest incidence rate for this region. Considering the lower socioeconomic status, high nitrite- and nitrate- containing food consumption and extremely hot beverages in etiology, further studies should be performed to better elucidate the etiologic risk factors.

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