STOMACH AND OESOPHAGUS CANCER AS THE MOST FREQUENTLY OCCURRING CANCER IN MALES AND SECOND MOST FREQUENTLY OCCURRING CANCER IN FEMALES IN VAN

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Morbidity and morality rates are highly affected by upper Gastro-intestinal (GI) system (oesophagus and stomach) cancers (Ca) worldwide. The most commonly occurring cases of cancer in the Eastern Anatolian regions (Van, Erzurum and other neighbouring provinces) is oesophagus and stomach cancer and these are also the cancers most frequently causing death in this region. In Van, the most frequently occurring cancer in males is stomach Ca and the second most frequent is oesophagus cancer. For women in the region, the second most common cancer is oesophagus Ca, followed my stomach Ca in third place. In this study, the total endoscopic prevalence of oesophagus and stomach Ca in Van was found to be 13.5% (6% and 7.5% respectively) and 1 out of every 7 upper endoscopy was diagnosed as one of either oesophagus or stomach Ca. These findings are the highest values of Turkey and leads to the estimation that the prevalence of oesophagus and stomach Ca in Van is 40/100,000 – 50/100,000 of the population in Van. The prevalence in other parts of Turkey is 1-2%. These findings show that cases of oesophagus and stomach Ca in the Eastern Anatolian region is 5-6 times higher than for the other regions of Turkey. It is important to investigate especially the dietary and environmental risk factors in the region due to the high prevalence of these cancers. The regional risk factors were called “T factors”.

1- Smoked foods, use of cowpat as fuel and tandoor style cooking: 90% of patients with upper GI Ca in the Eastern Anatolian region which have low socio-economic status and unhealthy living conditions are located in rural areas. The education level of such persons are also very low. It is highly common for those in living in the rural areas to cook meals by smoking foods in a closed tandoor style way of cooking by using cowpat as fuel. The eating habits of 99% of those with upper GI Ca

are of this manner. In Van, the prevalence of oesophagus cancer in females living in rural areas is 1.5 times higher than for males. Levels of benzapyrene and benzanthracene were found to be low in samples of meat and bread cooked with cowpat that were taken from Van.

2- High Salt Diet: Important sources of nitrate and nitrites are foods pickled in brine, salted fish and bore water (water from wells) in rural areas. Epidemiological studies conducted show that there is a close relationship between the consumption of these kinds of foods and upper GI Ca. It has also been found that consumption of high levels of salt doubles the risk of stomach Ca. A significantly high level of nitrate and nitrites were found in locally traditional food of Van (such as herb cheese, bread cooked with cow dropping fuel) and it was observed that 71% of upper GI Ca patients consumed a high salt diet.

3- Tobacco: A high amount of nitrosamines are found in alcohol and cigarettes. Cigarettes double the risk of stomach Ca. 58% of patients with upper GI Ca smoked 1 packet or more cigarettes for 10 years or more.

4- Tea ("kırtlama" style hot tea[1]): The habit of consumption of hot beverages has been considered as a risk factor in the etiology of oesophagus Ca in the literature worldwide. 82% of patients with upper GI Ca (especially oesophagus Ca) drank 15 glasses or more "kırtlama" style tea for 15 years or more.

5- Toxins (fungus): Microtoxins have been found to be a risk factor for GI and hepatocellular Ca. Aflatoxin and fumonisins come about from fungus that grows on such grains as corn or peanuts that are stored in unhealthy conditions without cold storage. It was found that patients with upper GI Ca in the region consumed high amounts of grains in the daily diets.

6- Teeth: Upper GI Ca patients in the Van region are highly insufficient in mouth-dental hygiene as well as hand and toilet hygiene. Only 7% of patients regularly brush their teeth daily.

7- Soil and Water: It was found that heavy metals (Ca, Cd, Pb, Mn, Ni, Cu) were present in high amounts in the soil and soil products in the volcanic regions of Van. The amounts found were 3.5 – 540 times higher than normal standard values. It was also seen that the level of zinc was 40 times below the standard values. In addition to these, it was also found that the level of uranium was high and the selenium level was low in the region surrounding Mount Süphan and the level of uranium found in Lake Van was also high. A high percentage of patients with upper GI Ca (87%) in Van, especially those in the rural regions, were seen to use bore water. This water was found to contain a high level of nitrite due to

[1] drinking "kırtlama" tea means biting the sugar cube with each sip of tea (translation remark)

bacterial contamination. Another important risk factor is that the urban drinking water pipes has contained asbestos structures for many years.

8- Insufficient Fruits and Vegetables in the Diet: The consumption of fruits and vegetables in the diets, especially of living the rural areas of Van, is significantly low. Only 32% of patients with upper GI Ca included fruits and vegetables in their daily diets. Besides this, the level of vitamin A and E in the Ca cells were found to be significantly low in patients with upper GI Ca.

9- Helicobacter Pylori: The helicobacter pylori (HP) infection is known to be an important factor in the etiology of stomach Ca worldwide. The World Health Organisation (WHO) has announced HP as a category 1 gastric carcinogenic. The prevalence of HP infection is 70-75% and this plays an important role in the etiology of upper GI Ca.

In conclusion, it can be stated that there are many risk factors that play a role in the occurrence of stomach and oesophagus cancer. Education of the public, improvement in bad dietary habits, eating a healthy diet consisting of fruit and vegetables and improvement of the unhealthy living standards, especially in the rural areas is crucial in the fight against stomach and oesophagus cancer in the Eastern Anatolian region.