

## **Gastric cancer-Statistical analysis data for 2015 to 2018 in Skopje, Republic of North Macedonia**

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### **Abstract**

Stomach cancer is one of the top five causes of death, especially among the male population. Its incidence increases with age and is most common in people around 50 years of age. The person's diet, lifestyle, genetics and Helicobacter Pylori infection are the main causes of this type of cancer. According to the data obtained from the Center for Statistical Data Processing from the Institute of Public Health in Skopje, men are twice more exposed to malignant neoplasia of the stomach in the period 2015-2018 at the level of Skopje city. In 2015 the number of men with malignant neoplasm of the stomach is 97, while the number of women is 44. For 2016, the number of men is 95 who have been diagnosed, while the number of women is three times lower - 34. In 2017, the number of men with malignant neoplasm of the stomach was 86, while in women the number is lower - 37. In 2018 the number of diagnosed men is a little decreased and counts 74, while in women the number is approximately constant - 33. From 2015 to 2018, the total number of people diagnosed with malignant neoplasm of the stomach is 500, with an average incidence rate of 50.0 per 100,000 inhabitants in the city of Skopje. According to the results, the number of patients is quite large. The male patients outnumber females in proportion 2:1. However, the number of patients has decreased from 2015 (141) to 2018 (107).

**Keywords:** carcinoma, stomach, statistics, incidence

## 1. Introduction

The stomach is part of the digestive tract located between the esophagus and the small intestine. Gastric cancer is the fourth most commonly diagnosed cancer and the second most common cause of cancer-related deaths in the world. Gastric carcinogenesis is a multistage and multifactorial process. While the intestinal type of gastric cancer is often associated with environmental factors, such as *Helicobacter pylori* infection, diet, and lifestyle. The diffuse type is more often associated with genetic abnormalities.

Gastric cancer is often asymptomatic or causes only nonspecific symptoms in the earlier stages. Over time, with the onset of symptoms, it is likely that the cancer has reached an advanced stage and usually has a poor prognosis. Gastric cancer usually has the following symptoms: early stage (Indigestion or burning sensation, loss of appetite, especially for meat, abdominal discomfort or irritation), middle stage (weakness and fatigue, flatulence, especially after meals), late stage (abdominal pain in the upper abdomen, nausea and sometimes vomiting, diarrhea or constipation, weight loss, bleeding dark blood – crushed, dysphagia).

Barium endoscopy is used in the diagnosis of gastric cancer. The barium coating helps identify certain abnormalities of the lining of the stomach. If certain suspicious changes are seen on endoscopy, biopsy forceps may be passed through the endoscopic tube to take tissue for microscopic inspection, known as biopsy. Computed tomography is used to obtain additional information about the tumor.

Risk factors are: long storage of the food, salty food, canned food, foods poor in antioxidants, alcohol, cigarettes, reduced intake of fresh fruits and vegetables, small amounts of fat and protein, high salt intake, complex carbohydrates and nitrates. However, old age is a major risk factor and the disease is more common in men.

Surgical treatment is the only curative procedure in the treatment of gastric cancer. Chemotherapy and radiotherapy are used as adjunctive to surgery or as palliative methods. Depending on the location of the cancer, part of the stomach can be removed through a procedure called partial gastrectomy. In a procedure known as a total gastrectomy, the entire stomach is removed. [1-8]

## 2. Material and methods

For the purposes of the research, data were taken on patients diagnosed with gastric cancer from the Center for Public Health Skopje, R. N. Macedonia in the period of 2015 to 2018ie within 4 years. To obtain the results, a large number of registered cases of cancer were analyzed.

## 3. Results and discussion

*Table 1. Number and rate of newly registered cases of malignant neoplasm of the stomach (C16) in Skopje, period 2015 - 2018*

Year	Gender	Malignant neoplasm of the stomach (C16)	
		Number	Rate/100000
2015	Men	97	31.8
	Women	44	14.0
	<b>Total</b>	<b>141</b>	<b>22.8</b>
2016	Men	95	30.9
	Women	34	10.7
	<b>Total</b>	<b>129</b>	<b>20.7</b>
2017	Men	86	27.7
	Women	37	11.5
	<b>Total</b>	<b>123</b>	<b>19.5</b>
2018	Men	74	23.9
	Women	33	10.3
	<b>Total</b>	<b>107</b>	<b>17.0</b>

According to the data obtained from the Center for Statistical Data Processing from the Institute of Public Health in Skopje, men are twice as exposed to malignant neoplasia of the stomach in the period 2015-2018 at the level of the city of Skopje.

In 2015 the number of men with malignant neoplasm of the stomach is 97, while the number of women is 44. The incidence of gastric cancer per 100,000 inhabitants in the city of Skopje for men is 31.8 while for women is 14.0. The total number for 2015 is 141 patients diagnosed with malignant neoplasm of the stomach and an incidence rate of 22.8 per 100,000 inhabitants.

For 2016, the number of men is 95 who have been diagnosed, and the number of women is three times lower and is 34, here the incidence rate is 30.9 for men and 10.7 for women. The total number for this year is 129 diagnosed with an incidence rate of 20.7 per 100,000 inhabitants.

In 2017, the number of men with malignant neoplasm of the stomach was 86 diagnosed with an incidence rate of 27.7 per 100,000 inhabitants, while the number of women was lower and was 37 diagnosed with an incidence rate of 11.6 per 100,000 inhabitants. The total number of fights is 123 diagnosed in 2017 with an incidence rate of 19.5 per 100,000 inhabitants.

In 2018, we have reduced the number of diagnosed men to 74, with a rate of 23.9 per 100,000 inhabitants, while among women we have a fairly constant number and it is 33 with a rate of 10.3 per 100,000 inhabitants. The total number is 107 diagnosed with gastric cancer with an incidence rate of 17.0 per 100,000 inhabitants.

From 2015 to 2018, the total number of people diagnosed with malignant neoplasm of the stomach is 500, with an average incidence rate of 50.0 per 100,000 inhabitants in the city of Skopje.

Due to the low prevalence of the disease in Macedonia, routine screening for this disease is not recommended, except in cases where there is a family history of the disease.

In RN Macedonia, after diseases of the circulatory system, malignant neoplasms are the second most common cause of death. In the period 2010-2018, the mortality rate ranges from 180.3 per 100,000 population in 2010 to 179.8% 000 in 2018. In the period 2010-2018, the mortality rate from malignant neoplasms over the age of 65 has a downward trend and ranges from 881.1 in

2010 to 805.1 in 2018 per 100,000 population. The mortality rate from malignant neoplasms in the age group over 65 is higher in the male population.

In RN Macedonia, the incidence of gastric cancer since 1999. in women is ranked second, after breast cancer, while in men after lung cancer. In the United States, according to statistics from the National Institutes of Health in 2005, gastric cancer as the most common type of cancer is not even ranked in the top 10. This difference can be seen between all Western developed and developing countries.

Gastric cancer is most commonly associated with *Helicobacter pylori* infection. It is a bacterium that lives in the gastric mucosa and is transmitted orally. According to the World Health Organization (WHO) *Helicobacter pylori* is the main culprit or the number one carcinogen in the occurrence of gastric cancer. The eradication of *H. pylori* (antibiotic eradication) can significantly reduce the incidence of gastric cancer. It is also thought that this could completely prevent stomach cancer.[9]

#### **4. Conclusion**

According to the results, the number of patients is quite large. The male patients outnumber females in proportion 2:1. However, the number of patients has decreased from 2015 (141) to 2018 (107).

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