

## Gastric cancer in Ecuador - current situation

### Câncer gástrico no Equador - situação atual

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## **ABSTRACT**

Gastric cancer is one of the most frequent cancers and has the worst prognosis worldwide, with a 5-year survival rate of only 15% worldwide. Almost one million new cases are diagnosed each year in the world, representing the fourth cause of death from cancer in the world. And in Guayaquil in 2015, nearly 300 new cases were diagnosed, being the most up-to-date figures in our environment.

**Keywords:** surgery, oncological surgery, stomach cancer.

## **RESUMO**

O câncer gástrico é um dos cânceres mais frequentes e tem o pior prognóstico em todo o mundo, com uma taxa de sobrevivência de 5 anos de apenas 15% em todo o mundo. Quase um milhão de novos casos são diagnosticados a cada ano no mundo, representando a quarta causa de morte por câncer no mundo. E em Guayaquil, em 2015, foram diagnosticados quase 300 novos casos, sendo os números mais atualizados em nosso meio.

**Palavras-chave:** cirurgia, cirurgia oncológica, câncer de estômago.

## **1 DISCUSSION**

Stomach cancer is the fourth cause of cancer-related death in the world. It is a multifactorial disease that depends on both genetic and environmental factors, which can have an impact on its appearance and development. (1)

According to GLOBOCAN figures published in 2018, they indicate that 990,000 cases are diagnosed in the world each year, and 738,000 die, making this the fourth cause of death from cancer in the world(2).

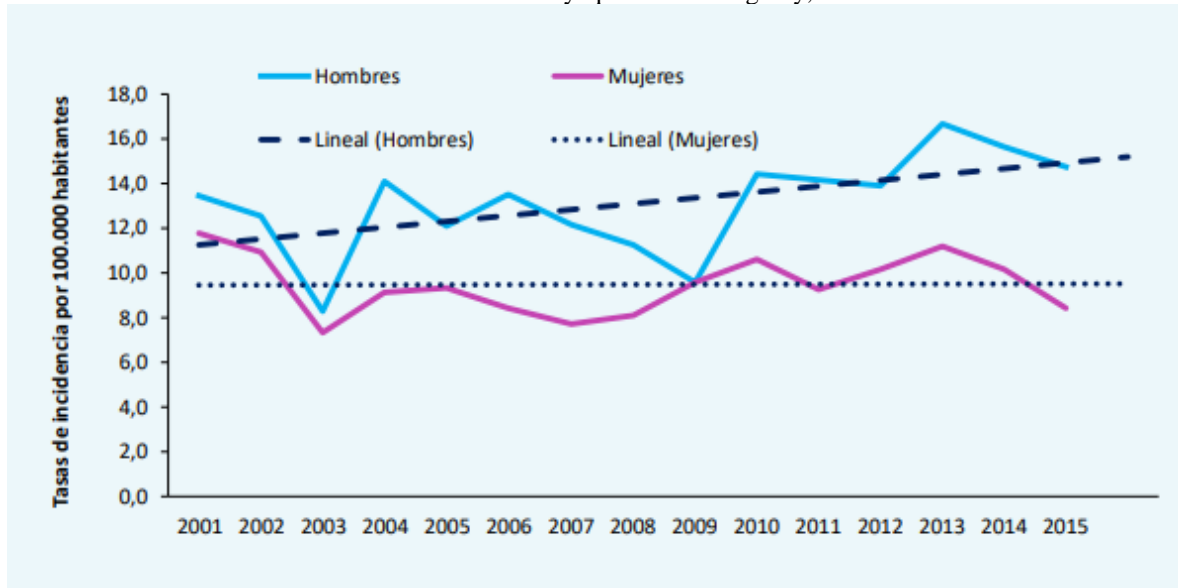
The highest risk areas globally include areas of South and Central America, as well as Eastern Europe and East Asia, and low risk areas include East Africa and North America. (3)

In 2015, 298 new cases of stomach cancer were diagnosed in Guayaquil in both sexes, with 63% in men (4).

The incidence rate is higher in men than in women, 14.7 and 8.4 respectively, per 100,000 inhabitants. The age groups most affected in women were 65 to 69 years old and 75

years and older; In men the incidence rate increases continuously from the 45 to 49 years of age group (4).

Illustration 1 Guayaquil Tumor Registry,



Source: SOLCA 2015 (4)

In the last 5 years, an increasing trend in the incidence rates of stomach cancer has been observed in men; In women, incidence rates have a stable trend (4).

Risk factors include both environmental, genetic and hereditary factors that directly influence this (1)

Most cases are sporadic and only 10% show familial aggregation (5), and cases with a Mendelian inheritance pattern comprise less than 3% of the cases described, and the risk of gastric cancer is 3 times higher among people with hereditary family history. (6).

These hereditary factors interact directly with dietary and environmental factors in such a way that they are considered their main genesis. The World Cancer Research Fund stated that fruits and vegetables are protective against gastric cancer and that roasted animal meats and charcoal and foods preserved in salt and smoked foods probably improve the progression of gastric cancer. (7)

Another risk factor that plays an important role is the direct consumption of tobacco and alcohol, it has been described that these increase the risk of gastric cancer by 80%. (8)

The bacteria that has been studied the most is the not so famous *Helicobacter Pylori*, which is a great negative that has been described in the carcinogenesis of gastric cancer by the UN since 1995(9).

Inflammation of the gastric body by *H. Pylori* produces gastric atrophy that induces an increase in PH and hypochlorhydria or achlorhydria which facilitates its colonization, and this leads to dysplasia and subsequent neoplastic changes (10).

Since 1965, Lauren's classification has been used for gastric cancer, and according to this, two types can be found: intestinal and diffuse, sellus ring cell carcinoma is assigned to the diffuse subtype, this being less frequent than the intestinal type(11 )

In 2010, the WHO classification was established, which covered most of it as adenocarcinoma, with several subtypes: tubular, mucinous, papillary and mixed, and the poorly cohesive carcinoma subtype corresponds to the Lauren signet ring type, and this encompasses about 10% of all types of Gastric Cancer. (12)

Clinical suspicion is generally not recommended to establish the diagnosis because when symptoms already appear, it is generally an advanced and possibly metastatic stage. The idea of early detection is supported, several tests are used and the Japanese model is taken for the detection of early gastric cancer. In this country, the detection program began in the 60s with photofluorography with good sensitivity and specificity, but the endoscopic study presents a better result in both sensitivity and specificity, such that it was established as the Gold standard for the diagnosis of this pathology. (13)

Many times when the diagnosis is established, up to 20% can be found together with synchronous tumors in other parts of the digestive tract (14).

Curative treatment when possible is based on surgical resection, limiting endoscopic resection to the initial stages and endoscopic resections of the submucosa(15).

The gastrectomy and the surgical technique used varies greatly depending on the site of the lesion, and subtotal or total gastrectomy can be performed. Likewise, the approach is currently considered to be minimally invasive, such as laparoscopic or robot-assisted, with favorable postoperative results, although this It has only been studied in initial stages (16–18)

Gastrectomy together with D2 lymphadenectomy is recommended for all types of gastric cancer in addition to traditional reconstruction methods such as Billroth I or Billroth II or Roux-en-Y (19)

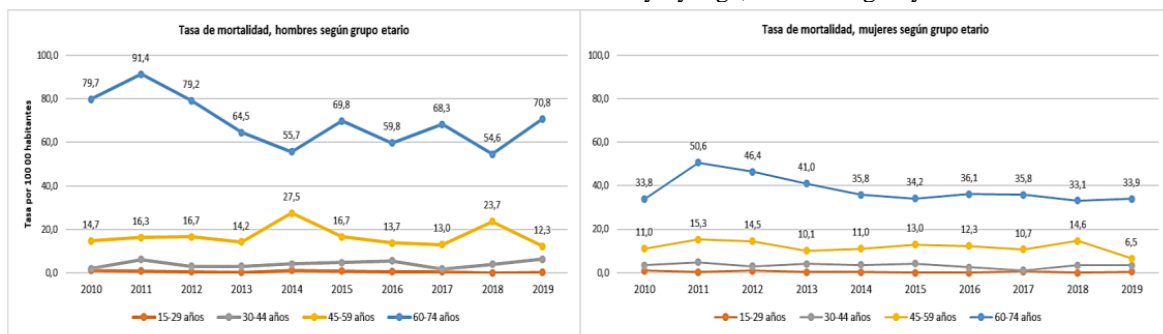
The role of chemotherapy plays a very important role, preferring a neoadjuvant scheme for advanced stages with locoregional lymphadenopathy visible by imaging methods (Stage III)

and always after surgical resection, adjuvant chemotherapy with fluoracil regimens is recommended. (20 , 21 , 22)

In the city of Guayaquil, it has been observed that mortality in general has been showing a sustained trend in this decade; 6.3 deaths were observed in 2010, 5.9 deaths in 2013, 5.4 deaths in 2016 and 5.8 deaths per 100,000 inhabitants in 2019.(4)

Regarding the mortality rate by sex, men were mostly affected, with a sustained trend in recent years, presented in 2010 with 7.7 deaths, 2013 with 6.6 deaths, 2016 with 6.9 deaths. and in 2019, 7.4 deaths per 100,000 inhabitants. The same thing happens with women in 2010 with 4.9 deaths, 2013 with 5.2 deaths, 2016 with 4.8 deaths and in 2019 with 4.1 deaths per 100,000 inhabitants.(4)

Illustration 2 Gastric Cancer Mortality by Age, Tumor Registry.



Source: SOLCA 2015 (4)

**BIBLIOGRAFY**

1. Hartgrink HH, Jansen EPM, van Grieken NCT, van de Velde CJH. Gastric cancer. *Lancet Lond Engl.* 8 de agosto de 2009;374(9688):477-90.
2. Ferlay J, Shin HR, Bray F, Forman D, Mathers C, Parkin DM. Estimates of worldwide burden of cancer in 2008: GLOBOCAN 2008. *Int J Cancer.* 15 de diciembre de 2010;127(12):2893-917.
3. Ang TL, Fock KM. Clinical epidemiology of gastric cancer. *Singapore Med J.* diciembre de 2014;55(12):621-8.
4. Campozano DJT, Feijoo ILJ, Briones DRQ. REGISTRO DE TUMORES SOLCA - GUAYAQUIL.
5. Lauwers GY, Mullen JT, Chelcun Schreiber KE, Chung DC. Familial Gastric Cancers: A Review With Focus on Hereditary Diffuse Gastric Cancer Syndrome. *AJSP Rev Rep.* abril de 2014;19(2):66.
6. Pinheiro H, Oliveira C, Seruca R, Carneiro F. Hereditary diffuse gastric cancer - pathophysiology and clinical management. *Best Pract Res Clin Gastroenterol.* diciembre de 2014;28(6):1055-68.
7. Kim J, Cho YA, Choi WJ, Jeong SH. Gene-diet interactions in gastric cancer risk: a systematic review. *World J Gastroenterol.* 28 de julio de 2014;20(28):9600-10.
8. Moy KA, Fan Y, Wang R, Gao YT, Yu MC, Yuan JM. Alcohol and tobacco use in relation to gastric cancer: a prospective study of men in Shanghai, China. *Cancer Epidemiol Biomark Prev Publ Am Assoc Cancer Res Cosponsored Am Soc Prev Oncol.* septiembre de 2010;19(9):2287-97.
9. Ishaq S, Nunn L. Helicobacter pylori and gastric cancer: a state of the art review. *Gastroenterol Hepatol Bed Bench.* 2015;8(Suppl 1):S6-14.
10. Correa P, Haenszel W, Cuello C, Tannenbaum S, Archer M. A model for gastric cancer epidemiology. *Lancet Lond Engl.* 12 de julio de 1975;2(7924):58-60.
11. Lauren P. THE TWO HISTOLOGICAL MAIN TYPES OF GASTRIC CARCINOMA: DIFFUSE AND SO-CALLED INTESTINAL-TYPE CARCINOMA. AN ATTEMPT AT A HISTO-CLINICAL CLASSIFICATION. *Acta Pathol Microbiol Scand.* 1965;64:31-49.
12. Fléjou JF. [WHO Classification of digestive tumors: the fourth edition]. *Ann Pathol.* noviembre de 2011;31(5 Suppl):S27-31.
13. Karimi P, Islami F, Anandasabapathy S, Freedman ND, Kamangar F. Gastric cancer: descriptive epidemiology, risk factors, screening, and prevention. *Cancer Epidemiol Biomark Prev Publ Am Assoc Cancer Res Cosponsored Am Soc Prev Oncol.* mayo de 2014;23(5):700-13.

14. Montes Lainez HDM, Andrade JC, Vilela NPC. Neoplasia primaria sincronica de estómago, colon y recto: reporte de un caso.
15. Facciorusso A, Antonino M, Di Maso M, Muscatiello N. Endoscopic submucosal dissection vs endoscopic mucosal resection for early gastric cancer: A meta-analysis. *World J Gastrointest Endosc.* 16 de noviembre de 2014;6(11):555-63.
16. Gholami S, Cassidy MR, Strong VE. Minimally Invasive Surgical Approaches to Gastric Resection. *Surg Clin North Am.* abril de 2017;97(2):249-64.
17. Bobo Z, Xin W, Jiang L, Quan W, Liang B, Xiangbing D, et al. Robotic gastrectomy versus laparoscopic gastrectomy for gastric cancer: meta-analysis and trial sequential analysis of prospective observational studies. *Surg Endosc.* abril de 2019;33(4):1033-48.
18. van Boxel GI, Ruurda JP, van Hillegersberg R. Robotic-assisted gastrectomy for gastric cancer: a European perspective. *Gastric Cancer Off J Int Gastric Cancer Assoc Jpn Gastric Cancer Assoc.* septiembre de 2019;22(5):909-19.
19. Santoro R, Ettore GM, Santoro E. Subtotal gastrectomy for gastric cancer. *World J Gastroenterol.* 14 de octubre de 2014;20(38):13667-80.
20. GASTRIC (Global Advanced/Adjuvant Stomach Tumor Research International Collaboration) Group, Paoletti X, Oba K, Burzykowski T, Michiels S, Ohashi Y, et al. Benefit of adjuvant chemotherapy for resectable gastric cancer: a meta-analysis. *JAMA.* 5 de mayo de 2010;303(17):1729-37.
21. Revisão de literatura / Gastric Cancer: A Literature Review. *Braz J Health Rev.* 5 de agosto de 2021;4(4):16439-50.
22. Segundo F de AS, Melo APF de, Medeiros DL, Madruga G de AM, Oliveira HC, França LSB de, et al. Adenocarcinoma gástrico do tipo difusode células em anel de sinete: relato de caso / Signet ring diffus cell gastric adenocarcinoma: case report. *Braz J Health Rev.* 20 de septiembre de 2019;2(5):4111-5.