

Real-World Analysis of Gastric and Gastroesophageal Junction Cancer in Mexico: Demographic and Clinical Characteristics.

Meneses Medina M¹; Díaz Romero M², Flores López Ricardo² , Castillo V³; Betancur-Diaz MA⁴; Medina-González S⁴; Lugo Martínez G⁵; Filio-Rodríguez G⁵.

1. Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubirán | INCMNSZ , Ciudad de México, México., 2. Instituto Nacional de Cancerología |INCan, Ciudad de México, México, 3. Tecnología Informática para la Salud, Ciudad de México, 4. MSD, México, 5. MSD, México.

Background and rationale

Gastric cancer (GC) is recognized as one of the most prevalent malignancies globally, ranking as the fifth most common cancer and the third leading cause of cancer-related mortality worldwide. In 2020, it was estimated that there were over a million new cases of gastric cancer and 769,000 fatalities worldwide. Typically, gastric cancer arises from the progression of premalignant lesions. Timely detection of these early or premalignant lesions is crucial, as prompt treatment can lead to potential cures and improved life expectancy. The histological classifications of gastric adenocarcinoma, according to the Lauren classification, include intestinal, diffuse, and mixed types. Epidemiological research indicates that the intestinal type of gastric cancer is the most common in regions with high incidence rates, predominantly affecting men and older populations, and is linked to chronic inflammation resulting from *Helicobacter pylori*-related atrophic gastritis in the antrum, as well as from reflux at the gastroesophageal junction. Treatment options are primarily determined by the disease stage, the presence of specific biomarkers, and the treatment regimen preferred by the physician. In Mexico, these choices often depend on the availability of treatments. The cancer staging system developed by the American Joint Committee on Cancer (AJCC) (cTNM) has significantly improved treatment decision-making for gastric cancer. Currently, in our country, there is a lack of consensus on the treatment of operable gastric cancer, leading to variations in approaches among different institutions. Moreover, many patients remain under non-oncological care for extended periods before receiving a diagnosis and/or treatment. The development of this study aims to enhance the understanding of the experiences of patients with gastric and gastroesophageal junction cancer, as well as the diverse treatment strategies employed in our country, serving as a step towards illuminating the subject and fostering consensus that prioritizes patient well-being.

Objectives

- To describe demographic characteristics and clinical patterns of newly diagnosed gastric and gastroesophageal junction cancer patients from 2 reference centers in México
- To describe Gastric and gastroesophageal junction cancer patients journey from initial symptoms (Time to diagnosis, Time to treatment)
- To describe treatment patterns stratified by clinical stage and anatomic site

Methodology

This study was conducted as a descriptive, retrospective database analysis utilizing data from two prominent Mexican hospitals: “Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubirán” (INCMNSZ) and “Instituto Nacional de Cancerología” (INCan). The electronic database was meticulously designed and populated by the research teams associated with these institutions, comprising records of patients treated exclusively within their facilities. Data were extracted for adult patients, aged 18 years and older, who were newly diagnosed with gastric or gastroesophageal junction adenocarcinoma between January 1st, 2005, and December 31st, 2019. Inclusion criteria included patients with a pathologically confirmed diagnosis and no prior treatment, while exclusion criteria encompassed those with less than three years of follow-up, a simultaneous diagnosis of other malignancies (with specified exceptions), participation in clinical trials, or incomplete information

Disclosure

This study was funded by MSD Colombia, a subsidiary of Merck & Co., Inc., Rahway, NJ, USA., Sebastian Medina and María A. Betancur are MSD Colombia employees; Gabriela Lugo is a MSD Mexico employee.

Results

A total of 653 patient records meeting the inclusion criteria were analyzed. The distribution of patients by hospital center and gender is shown in Figure 1. Of the total patients, 56.7% (370) were from the Instituto Nacional de Cancerología (INCAN) and 43.3% (283) from the Instituto Nacional de Ciencias Médicas y Nutrición “Salvador Zubirán” (INCMNSZ). Gender analysis revealed that 55% (361) were female and 45% (292) were male, with a similar proportion maintained across both institutions.

• Anthropometric Parameters

The mean age of patients was 54 years, ranging from 20 to 94 years, with a standard deviation of 14.59 years. The mean weight was 58.8 kg, height was 1.59 m, and BMI was 23.31 kg/m². These values were consistent across both centers, with slight variations in height and BMI extremes.

• Alcohol and Tobacco Consumption

The consumption patterns showed a higher prevalence of tobacco use compared to alcohol. 70% of patients had a history of smoking, while only 24% had a history of alcohol consumption. The prevalence of smoking was higher in INCAN patients (81%) compared to INCMNSZ patients (57%) figure 1.

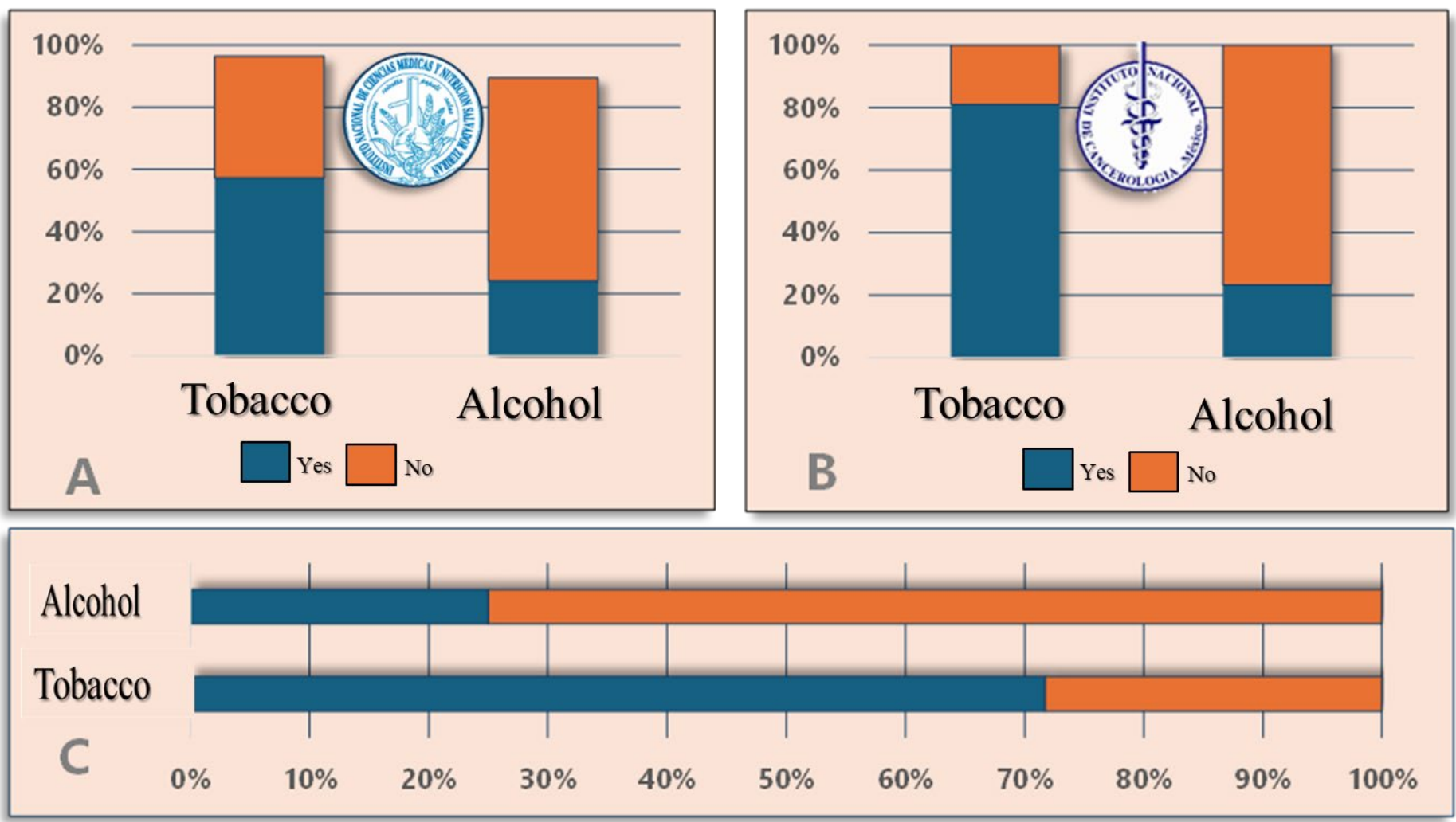


Figure 1: Distribution of alcohol and tobacco consumption globally and by center

• Geographic Distribution

Patients were predominantly from the metropolitan area and the Valley of Mexico, with the highest representation from Ciudad de México (32.7%) and Estado de México (21.9%), Figure 2.



Figure 2. Distribution of entities of origin globally and by center

• Clinical Stages of Gastric Cancer

Most patients were in advanced clinical stages (Stage 4), with 80.86% in this category. This was more pronounced in INCAN patients (86.5%) compared to INCMNSZ patients (73.5%). Early stages (1A and 1B) were less frequent, representing less than 2% of cases Figure 3.

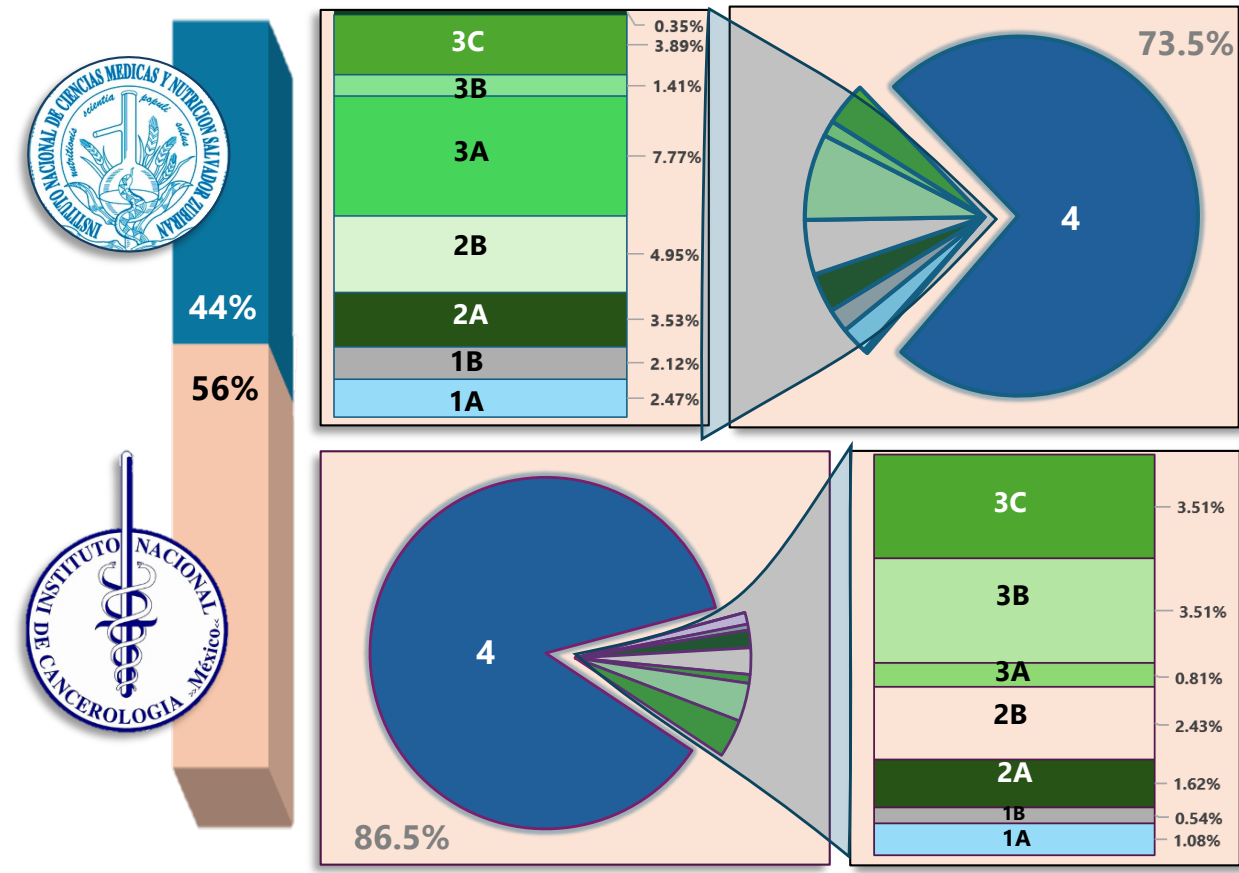


Figure 3. Clinical stages at diagnosis by center

• HER2 Expression

From 653 records included, HER2 receptor expression was reported in n=179 (27.5%), less than one-third of the cases, a total of n=474 (75.5%) were codified as not tested. Among the reported cases, n=148 (22.6%) were negative for HER2 expression, n=18 (2.76%) were positives and n=13 (2.2%) was identified as undetermined.

These findings highlight the demographic, clinical, and behavioral characteristics of gastric cancer patients in these two major institutions, providing insights into the epidemiology and clinical management of the disease.

Patient Journey

In terms of the patient journey, the median time from symptom onset to diagnosis was 123 days. This time to diagnostic varied by stage, with the shortest being 91 days for *In situ* stage and the longest being 152 days for stages IIB-IIIC. The median time to treatment initiation after diagnosis was 50 days overall, with slight variations across stages, suggesting additional delays in accessing or coordinating care.

Conclusions

The significant delays in the early detection of gastric and gastroesophageal junction (GEJ) cancer highlight an urgent need for improved strategies. Most patients in this study were diagnosed at advanced stages, particularly stage IV.

. To address this, it is crucial to implement robust early detection programs, enhance public awareness, and ensure healthcare providers are equipped to recognize early signs.

.Managing risk factors such as tobacco and alcohol consumption is also essential, as these were prevalent among the patients

.Additionally, establishing standardized treatment protocols across healthcare centers will ensure timely and effective care for all patients.

In summary, enhancing early detection, managing risk factors, and standardizing treatment protocols are vital steps to improve clinical outcomes for patients with gastric and GEJ cancers.

References

- 1.**Icaza-Chávez, M. E., Tanimoto, M. A., Huerta-Iga, F. M., Remes-Troche, J. M., Carmona-Sánchez, R., Ángeles-Ángeles, A., Bosques-Padilla, F. J., Blancas-Valencia, J. M., Grajales-Figueroa, G., Hernández-Mondragón, O. V., Hernández-Guerrero, A. I., Herrera-Servín, M. Á., Huitzil-Meléndez, F. D., Kimura-Fujikami, K., León-Rodríguez, E., Medina-Franco, H., Ramírez-Luna M. Á., Sampieri, C. L., Vega-Ramos, B., Zentella-Dehesa, A. (2020). Consenso mexicano sobre detección y tratamiento del cáncer gástrico incipiente. *Revista de Gastroenterología de México*, 85(1), 69-85. DOI: 10.1016/j.rgmex.2019.10.001
- 2.**Sánchez-Barriga, J. J., Gómez-Dantés, H., et al. (2012). Higher mortality rate for gastric cancer in Chiapas within the period of 2000-2012. *Epidemiologic Studies*
- 3.**Everett, S., Lugo, G., Zamanali, N. (2023). Protocol: Gastric Cancer09. *Observational Study on Gastric and Gastroesophageal Junction Cancer in Mexico*
- 4.**GLOBOCAN Project. (2023). Gastric adenocarcinoma as the third cause of cancer death in Mexico. *Epidemiologic Evidence*
- 5.**Gastric Cancer Research in Mexico: A Review. (2023). *Academia.edu*

