



# THE GLOBAL INCIDENCE OF GASTRIC CANCER IN THE 21ST CENTURY: A SYSTEMATIC REVIEW OF POPULATION-BASED STUDIES FROM 2007-2017

Shailja C. Shah<sup>1,2</sup>, Fox Underwood<sup>3</sup>, Wee Khoon Ng<sup>4</sup>, Wai Yin Chan<sup>5</sup>, Daniel Castaneda<sup>1</sup>, N. Vicky Riyat<sup>6</sup>, Hassan Azhari<sup>3</sup>, Siew Ng<sup>5</sup>, Gilaad Kaplan<sup>3</sup>

<sup>1</sup>Mount Sinai Hospital, New York, NY; <sup>2</sup>Vanderbilt University Medical Center, Nashville, TN; <sup>3</sup>University of Calgary, Calgary, AB; <sup>4</sup>Tan Tock Seng Hospital, Singapore, Singapore; <sup>5</sup>Chinese University of Hong Kong, Hong Kong, HK; <sup>6</sup>University of Tennessee HSC, Memphis, TN



## BACKGROUND

- ❖ **Gastric cancer:** 5th most common cancer & 3rd most common cause of cancer-related mortality
- ❖ Disease incidence varies among regions within countries and among ethnicities.
- ❖ **Risk factor:** *Helicobacter pylori* - infects > 4.4 billion people/responsible of 80% of GC
- ❖ Sanitation and effective antibiotic therapy against *H. pylori* have changed the incident rate of gastric cancer over time
- ❖ **AIM:** To determine the global incidence of gastric cancer in the current era.

## METHODS

- ❖ Systematic literature search: EMBASE and MEDLINE
  - population-based studies
  - incidence rates of gastric cancer reported for 2007-2017
- ❖ Choropleth maps generated using QGIS software

## RESULTS

- ❖ 11,781 reports screened, 565 full text articles reviewed and 130 studies reporting gastric cancer incidence rates during or after 2007 were included for analysis.
- ❖ Data from **114 distinct countries** were included. (**Figure 1 and 2**).
- ❖ The **highest overall** incidence rates of gastric cancer were in Iran, Japan, and China (40.1-61.7 per 100,000 person-years).
  - Males:** China, S. Korea, Iran (59.1-193.4 per 100,000 person-years)
  - Females:** Colombia, S. Korea, Iran (27.3-107 per 100,000 person-years)
- ❖ The **lowest overall** gastric cancer rates were in Gambia, Pakistan, Laos, and Timor-Leste (1.3-2.3 per 100,000 person-years).
  - Males:** Ghana, Nepal, and Algeria (0.7-1.8 100,000 person-years)
  - Females:** Ghana, Maldives, and Sudan (0.1-0.9 100,000 person-years).
- ❖ North America: incidence rates ranged from 8.7 to 25 per 100,000 person-years

## CONCLUSIONS

- ❖ There is marked global variation in disease incidence with identifiable populations at very high risk for gastric cancer even in the current era.
- ❖ Preferential targeting of high risk populations and development of preventive strategies or early detection offer the highest potential for cancer alleviation.

No funding received for this work

## RESULTS (con't)

Figure 1: Global Gastric Cancer Incidence per 100,000 persons, Males (2007-2017)

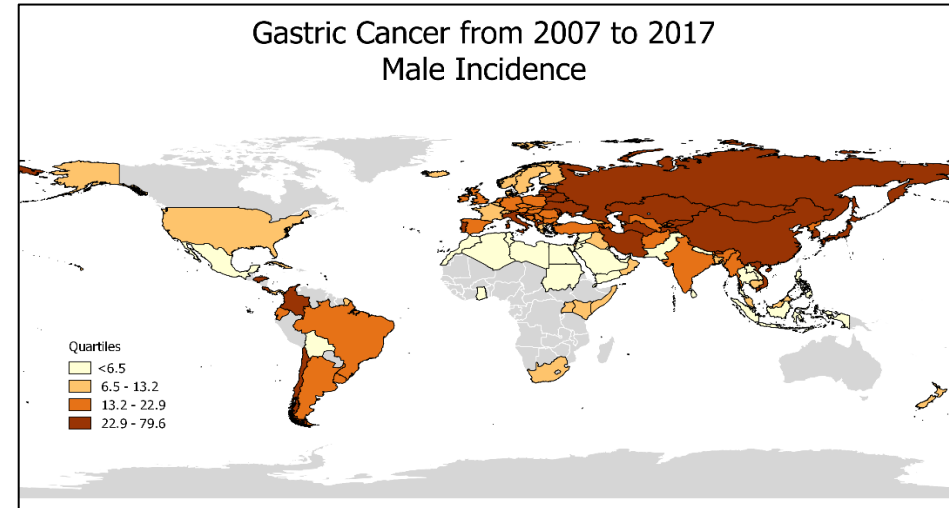


Figure 2: Global Gastric Cancer Incidence per 100,000 persons, Females (2007-2017)

