Patterns of Cancer Incidence and Mortality Rates and Trends in Trinidad and Tobago

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BACKGROUND:

Cancer is the second leading cause of death in the Caribbean and has created tremendous challenges for healthcare services and expenditures throughout the region. In the twin island nation of Trinidad and Tobago (TT), cancer is a leading cause of death, much like the rest of the Caribbean. **TT has the highest prostate cancer mortality rate in the world and the highest breast cancer mortality rate in the Americas.** Yet, the literature on the burden of cancer within TT remains relatively barren. Previous studies of cancer in TT have reported cancer site-specific incidence, mortality and survival rates, including for breast, prostate, cervical, and gastric cancers. However, a comprehensive analysis of cancer incidence and mortality has never been reported. **To the best of our knowledge, this is the first epidemiologic study to examine TT cancer rates and trends across all cancer sites, by age, ancestry, geography and gender with a focus on the most prevalent cancers by gender.**

METHODS:

National Cancer Registry of TT 1995-2009

TT Central Statistical Office 2000 and 2010 census

Incidence dataset, all cancers n = 29 512

Mortality dataset, all cancers n = 18 216

Data quality analytics and cleanup

Datasets matched and merged

Rates were age-standardized to the 1960 world standard population

Imputation methodology was used to determine ancestry in cases without race information

- Geospatial mapping - R Statistical Software
- Annual percentage rate changes - NCI Joinpoint Regression Program
- Statistical analyses - Statistical Package of Social Science V.20 (SPSS)

FINDINGS:

Rates and trends. The most commonly diagnosed cancers among men were prostate, lung and bronchus, colon, hematologic and stomach whereas breast, cervix uteri, corpus uteri, hematologic, colon and ovarian cancer were the most commonly diagnosed cancers among women. Incidence rates for these cancers increased over the study period.

Among men, the annual percent changes in the incidence and mortality rates of hematologic cancers were 2.41 and 12.46%, respectively.

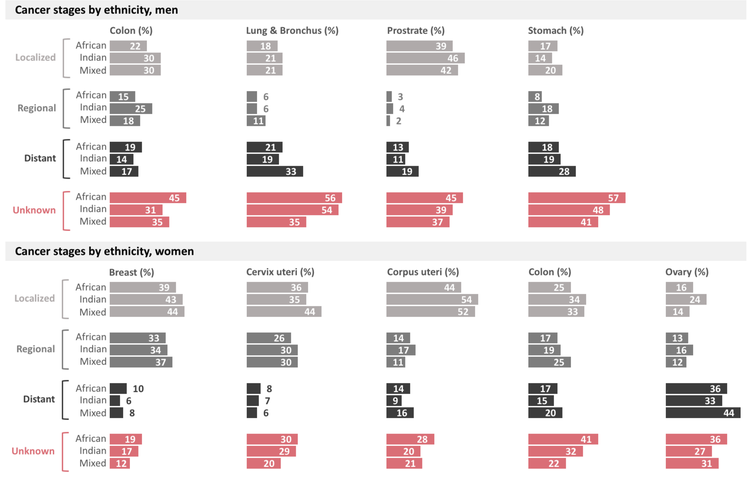
The annual percent changes in the incidence and mortality rates of ovarian cancer were 2.41 and 12.46%, respectively.

Overall cancer incidence rates were 13.4% higher among men than women.

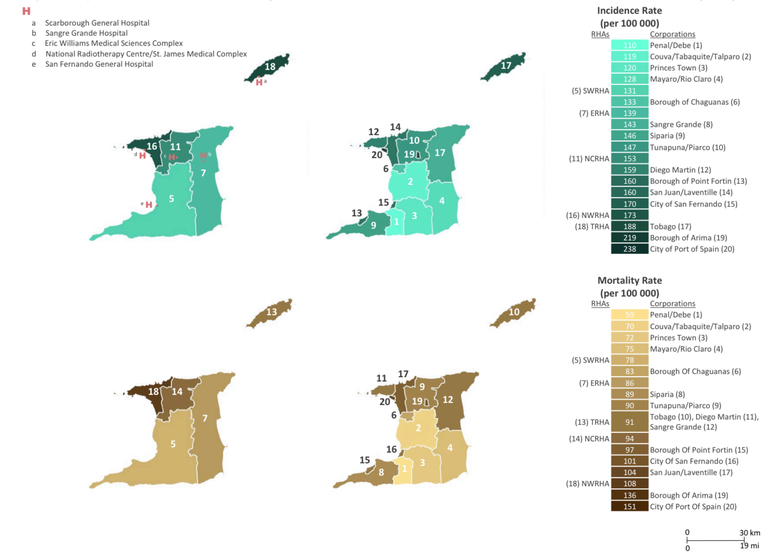
Mortality rates were 22.3% higher among men than women.

TT has an overall cancer case-fatality rate of 61.7%.

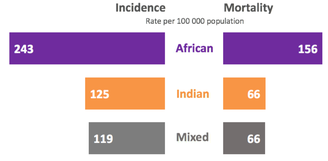
Stage. There was a significant percentage of cancers with unknown stage among men (31-57%) and women (12-41%).



Geography. Geospatial mapping revealed associations between cancer rates and geography.



Ancestry. Highest incidence and mortality rates for all cancers were observed in the TT population of African ancestry.



Age.

The highest burden of cancer were observed among men and women ≥45 years.

Among women, the highest breast and cervical cancer incidence and mortality rates were observed among those 45-54 years old.

DISCUSSION:

In developed countries, prostate and breast cancer rates are decreasing, unlike in TT, where the rates are increasing.

Cancer prevention efforts should be increased since the prevalence of cancers known to be attributable to lifestyle factors are increasing.

The high proportion of cancers diagnosed at distant and unknown stages, highlights the need for improvements in cancer screening and treatment initiatives in TT.

Capacity-building within the Cancer Registry (e.g., to mandate standardized data collection and routine molecular subtyping of tumors) is essential for improved cancer surveillance.

CONCLUSION:

Considering the high burden of cancer in TT, we expect that findings from this study will inform future policies, particularly related to resource allocation across the cancer care continuum in TT.

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