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Colorectal Cancer in Hispanics Living Near the U.S.–Mexico Border

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ABSTRACT

Background: The incidence of colorectal cancer (CRC) in the US has declined. The decreasing trend is observed in non-Hispanic Whites, Blacks, and Hispanics. However, close analysis of the trends demonstrates that the decline among Hispanics is less than other races/ethnicities. We investigate the burden of CRC in Hispanics living near the U.S.–Mexico border, a subpopulation of Hispanics composed primarily of individuals of Mexican origin. **Objectives:** The objective of this study was to investigate and compare incidence rates of CRC in non-Hispanic Whites and Hispanics living in counties along the U.S.–Mexico border. **Methods:** Data from the National Institutes of Health National Cancer Institute and State Cancer Profiles were analyzed to obtain CRC incidence rates (per 100,000 population) for persons ≥ 50 years of age residing in counties along the U.S.–Mexico border by race (non-Hispanic White and Hispanic) and gender from 2011 to 2015. **Results:** Incidence rates of CRC in Hispanic men ≥ 50 years of age, living in counties along the U.S.–Mexico border, were higher than the national average for Hispanic men of similar age. In contrast, the incidence of CRC declined or remained stable in non-Hispanic Whites and women. **Conclusions:** Our study unveils a significant disparity in CRC incidence among Hispanics living near the U.S.–Mexico border, disproportionally affecting men ≥ 50 years of age. Socioeconomic and cultural/lifestyle factors are likely contributing to these disparities. (REV INVEST CLIN. 2019;71:306-10)

Key words: Colorectal cancer. Incidence. Hispanics. U.S.–Mexico Border.

INTRODUCTION

Colorectal cancer (CRC) is the third most commonly diagnosed cancer and the fourth most common cause of cancer-related death in the world[1]. In the U.S., it is the second most common cause of cancer-related death in men and third most common in women, accounting for 9% and 8%, respectively, of all cancer-related deaths[2]. The incidence of CRC in the U.S. has declined, primarily attributed to the advent of screening programs. The decreasing trend is observed in non-Hispanic Whites, Blacks, and Hispanics. However, close analysis of the trends demonstrates that despite the advent of screening programs, the decline among Hispanics is less than other races/ethnicities[3]. A variety of factors, including lower screening rates and higher prevalence of obesity, diabetes, metabolic syndrome, and smoking among Hispanics, are thought to be contributing to these racial/ethnic differences[4-9].

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In Mexico, despite the high prevalence of metabolic syndrome and obesity, CRC incidence rates are among the lowest in the world[10] and are likely explained by the fact that the Mexican diet is typically higher in fiber, vegetables, and fruits[11,12]. Although the rates of CRC in Mexicans are among the lowest, the most recent data show that there is an upward trend in incidence in both men and women[10] and is likely attributed to the westernization of diets[13].

Given that Hispanics comprise a significant portion of the U.S. population, it is imperative to explore the patterns of CRC in this population to better understand the disease burden and explore strategies to change future trends. To our knowledge, no other study has investigated the burden of CRC in Hispanics living near the U.S.–Mexico border, a subpopulation of Hispanics composed primarily of individuals of Mexican origin.

METHODS

Incidence statistics for counties along the U.S.–Mexico border were obtained from the National Institutes of Health (NIH) National Cancer Institute and State Cancer Profiles, which calculate data from State Cancer Registries, Centers for Disease Control and Prevention's National Program of Cancer Registries Cancer Surveillance System (NPCR-CSS), and NPCR using Surveillance, Epidemiology, and End Results *Stat software[14]. CRC incidence rates (per 100,000 population) for persons ≥ 50 years of age living in counties along the U.S.–Mexico border were compared by race (non-Hispanic White and Hispanic) and gender from 2011 to 2015. Variability in incidence rates and changes in trends over the 5-year period were reported with 95% confidence intervals. Given that the United States Preventive Services Task Force currently recommends starting screening at the age of 50 years for average risk individuals, only this population was searched. Only descriptive data were reported – a statistical trend test was not used to analyze incidence rates over time.

In this article, data for the following counties are reported: Texas (El Paso, Val Verde, Maverick, Webb, Zapata, Starr, Hidalgo, and Cameron), New Mexico (Dona Ana), Arizona (Yuma, Pima, Santa Cruz, and Cochise), and California (San Diego and Imperial). To ensure confidentiality and stability of rate estimates, counts were suppressed if fewer than 16 cases were reported in a specific area-sex-race category. Counties for which the entire data were contained (< 16 cases, total) include Texas (Hudspeth, Jeff Davis, Presidio, Brewster, Terrell, and Kinney) and New Mexico (Hidalgo and Luna).

RESULTS

From 2011 to 2015, the average annual incidence rates (per 100,000 persons) of CRC in Hispanic men ≥ 50 years of age in 11 of the 15 reported counties along the U.S.–Mexico border were higher than the national average for Hispanic men of similar age. Zapata County in Texas had the highest average incidence rate for Hispanic men during this period. In non-Hispanic White men, the average annual incidence rates were higher than the respective national average in four of the nine counties with reported cases (El Paso, Cameron, Cochise, and Imperial). Data for non-Hispanic White men were not reported for six counties due to there being fewer than 16 cases in each of these counties. Women, in general, fared better. Compared to national rates within their respective groups, the average annual incidence rates for Hispanic and non-Hispanic White women were lower in all counties, except for Starr and Cameron in which rates were higher in Hispanic women and Imperial in which the rate was higher in non-Hispanic White women (Table 1).

Most recent trends in CRC incidence, as reported by the NIH National Cancer Institute and State Cancer Profiles, show that the incidence of CRC has remained relatively stable or fallen in both Hispanics and non-Hispanic Whites at the state and national level. However, this is not the case for Hispanic men living in El Paso County, where an upward trend in CRC incidence was noted (Fig. 1).

DISCUSSION

Our study highlights a significant disparity in the incidence of CRC by ethnicity and place of residence. Of importance, most cancer databases and published literature report data for Hispanics as an aggregate group, which may be masking important differences

Figure 1. Average annual incidence rates of colorectal cancer in persons ≥ 50 years of age living in counties along the U.S.–Mexico border from 2011-2015. All rates are per 100,000 population. Variability in incidence rates (error bars) and changes in trends (↑ rising/↓ falling) over the five-year period are shown with 95% confidence intervals. Data were obtained from NIH National Cancer Institute and State Cancer Profiles, which calculate data from State Cancer Registries, Centers for Disease Control and Prevention's National Program of Cancer Registries Cancer Surveillance System (NPCR-CSS), and NPCR using Surveillance, Epidemiology, and End Results*Stat software.[14]. Data suppressed (< 16 cases).

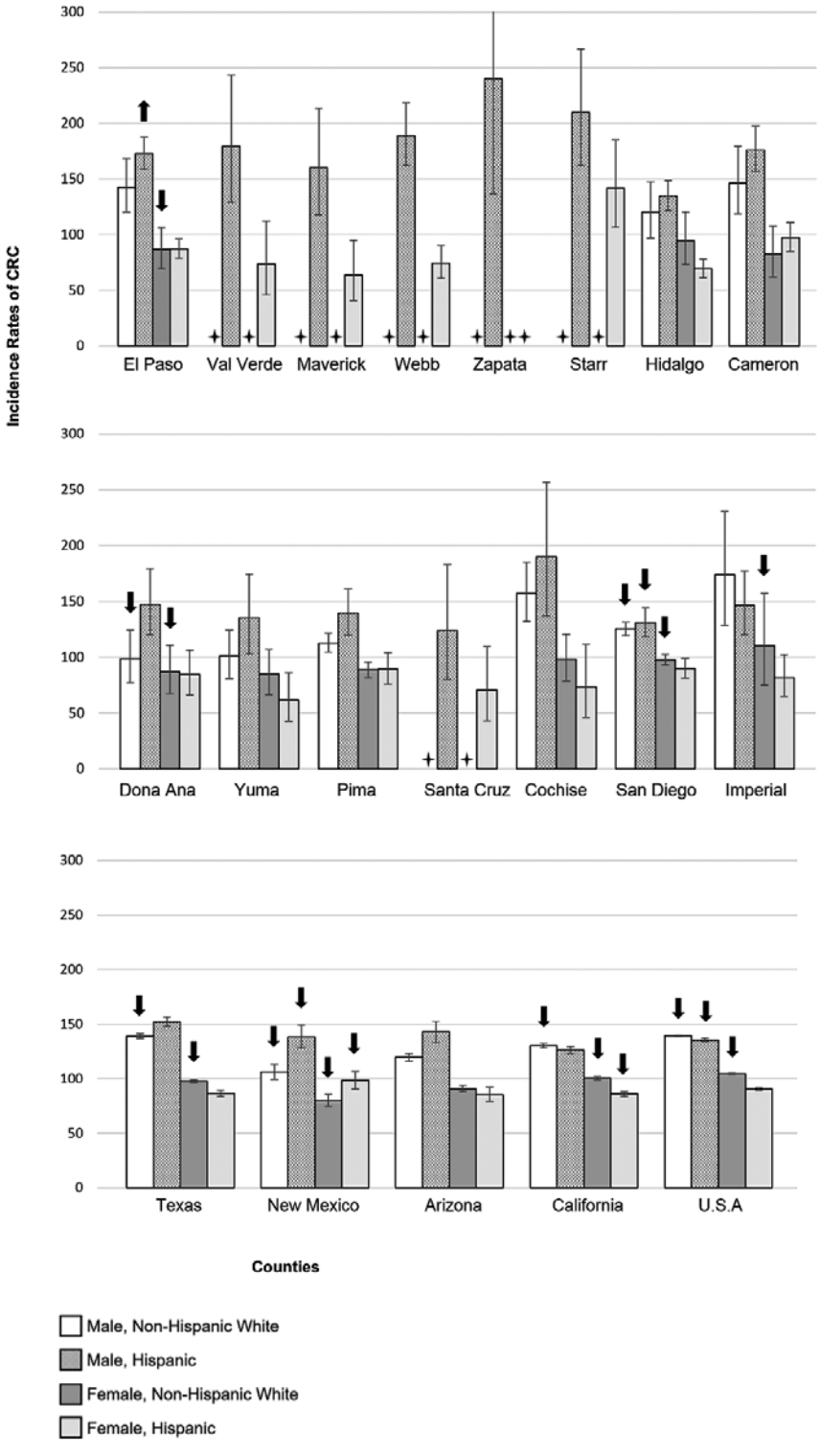

Table 1. Incidence rates of colorectal cancer in Hispanic men ≥ 50 years

Countries	
Zapata (Texas)	239.9 (136.7, 392.1)
Starr (Texas)	209.8 (162.3, 266.9)
Cochise (Arizona)	190.0 (136.9, 256.6)
Webb (Texas)	188.7 (162.1, 218.4)
Val Verde (Texas)	179.4 (128.9, 243.1)
Cameron (Texas)	176.3 (156.8, 197.6)
El Paso (Texas)	172.6 (158.5, 187.5)
Maverick (Texas)	160.4 (117.8, 213.5)
Dona Ana (New Mexico)	147.5 (120.2, 179.2)
Imperial (California)	146.5 (120.0, 177.0)
Pima (Arizona)	139.4 (119.9, 161.1)
Yuma (Arizona)	135.3 (103.0, 174.2)
Hidalgo (Texas)	134.4 (121.5, 148.4
San Diego (California)	130.9 (118.5, 144.3)
Santa Cruz (Arizona)	123.9 (80.0, 183.2)
National	135.6 (133.9, 137.4)

Average annual incidence rates of colorectal cancer in Hispanic men ≥ 50 years of age living in counties along the U.S.–Mexico border from 2011-2015. All rates are per 100,000 population. Variability in rates are reported alongside.

between Hispanic subpopulations. While the majority of U.S. Hispanics are of Mexican origin (64.3%), the population is not equally distributed across the U.S, i.e., Mexican-Americans comprise more than 80% of the Hispanic population in Texas and California[15], with a heavier concentration residing near the U.S.–Mexico border. Our study suggests that Hispanics of Mexican origin may be disproportionately affected by CRC, or Hispanics living in border communities have different risk profiles.

The underlying reason for the rising incidence of CRC in Hispanics, more pronounced in those living in counties along the border, remains to be elucidated but could be attributed to the increasing prevalence of obesity, diabetes, metabolic syndrome, and smoking. Studies have revealed that over 50% of CRC cases are attributable to these lifestyle factors[16]. Moreover, these risk factors have become more prevalent and have disproportionally affected Hispanics[5-9]. In addition, these factors are magnified in the U.S.–Mexico border communities, where rates of obesity and diabetes are more than 1.5 and 1.4 times, respectively, higher than in Hispanics living in other parts of the country[6-7]. Furthermore, border counties, in general, have higher rates of residents living in poverty, which results in lower screening rates and patients delaying care due to costs[17].

Although the rates of CRC in Mexicans are among the lowest in the world, the most recent data show that there is an upward trend in incidence in both men and women[10]. In addition, the rates of cancer incidence and mortality are higher in Northern Mexico[18]. These and our study findings, in addition to lack of evidence to support that genetics plays an important role in the higher incidence of CRC in Hispanics[19-21], suggest that the adoption of more Western lifestyles and associated complications are the main culprits for the higher incidence rates of CRC in border communities.

Limitations to our study include that only U.S. border counties were included in our analysis. Unfortunately, Mexico does not have a population-based cancer registry[18,22]. The development and implementation of a national cancer registry can help bring awareness of future challenges and public policy creation to help prepare for these challenges. In addition, our study did not analyze the rates of CRC in persons (< 50 years of age, and although multiple studies have revealed

that the incidence of CRC is rising among young Hispanics[23-26], whether this is the same in border communities, remains to be explored).

In summary, Hispanics are the largest- and fastest-growing minority group[27]. Furthermore, the median age for Hispanics of Mexican origin is 25 years, the lowest compared to other Hispanic subgroups[28], and as the population ages, it is anticipated that the relative incidence of CRC will rise. Efforts at increasing awareness, decreasing the barriers to CRC screening, and promoting healthy lifestyle habits are needed to change future trends.

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