How do social factors explain outcomes in Non-Small Cell Lung Cancer Among Hispanics in California?

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Background and Purpose

- Hispanics in the US have a lower age-adjusted incidence and mortality rate from NSCLC compared with non-Hispanic whites despite a lower socioeconomic status. This is termed the “hispanic paradox”

- Previous research demonstrates that nativity may explain the Hispanic paradox with foreign-born Hispanics demonstrating better survival than US-born Hispanics from NSCLC

- Few studies have evaluated the influence of neighborhood factors on survival but no studies have evaluated the influence of nativity, neighborhood factors, and clinical factors on survival from NSCLC

- To evaluate the interplay of neighborhood, clinical and individual factors on survival among Hispanics in California with NSCLC.
Methods

- Hispanic patients between years of 1988-2008 were identified by the California Cancer Registry
- Classification of Hispanic ethnicity was enhanced by the application of the North American Association of Central Cancer Registries Hispanic Identification Algorithm
- Cancer registry or death certificate data on place of birth was used to determine nativity for 90.3% of patients; Validated method using social security numbers imputed nativity for 9.7% of patients with unknown place of birth
- Cancer addresses at diagnosis were geocoded using a parcel-based method and linked to census-block-group level composite index of SES that incorporates 1990 and 2000 US census data on education, occupation, unemployment, household income, poverty, rent, and house values.
- Ethnic enclave composite index was developed through principal components analysis and included 1990 and 2000 US census block group data on % linguistically isolated, % linguistically isolated who speak Spanish, % speaking limited English, % Spanish speaking who spoke limited English, % of recent immigrants, % Hispanic, and % foreign-born.
Results

• n = 14,829 Hispanic patients with NSCLC
  – Majority were male, older than 60, and married
  – >50% presented with advanced stage
    • Foreign-born (59.1%) vs. US-born (54.2%)
  – Majority did not receive treatment
  – Foreign-born compared to US-born were more likely to live in the
    lowest SES neighborhood and highest Hispanic enclaves

• Foreign-born Hispanics had a 13% decreased risk of NSCLC
  mortality compared with US-born Hispanics (after adjustment
  for age, gender, year of diagnosis, marital status and treatment)

• Adjustment for neighborhood factors, specifically SES and ethnic
  enclave, slightly moderated the survival benefit among foreign-
  born relative to US-born Hispanics.
Discussion

• There is a better survival among foreign-born than US-born Hispanics with NSCLC despite lower income, education, and access to medical care among foreign-born Hispanics

• Enclave plays an important, perhaps protective role for foreign-born Hispanics with NSCLC

• Enclave may serve as a proxy for social capital and this study suggests that social factors may help to explain survival advantage among foreign-born Hispanics with NSCLC