



Hepatocellular Cancer in the Greater Bay Area, 1989-2006

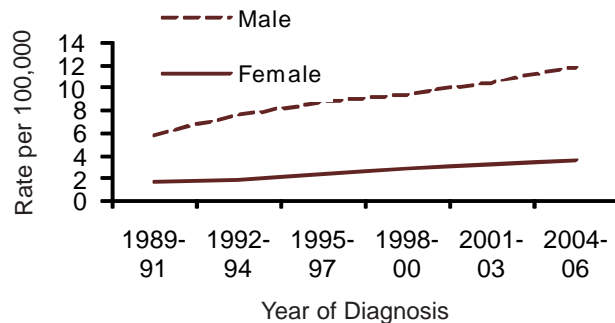
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While liver (hepatocellular) cancer is relatively rare, incidence and mortality rates have been increasing in California and nationwide (1, 2), likely due to the rising prevalence of hepatitis C virus infection over the last few decades (3). The average age of onset is 64 years, with 90% of cases occurring in those who are 45 years and older, though this pattern varies by racial/ethnic group (3). The majority of cases are among those with certain risk factors, including male sex, Asian/Pacific Islander race/ethnicity, chronic hepatitis B or C virus infection, cirrhosis, inherited metabolic diseases, diabetes, obesity, anabolic steroid use, and arsenic exposure (3). Liver cancer is one of the top five cancers among California men in most Asian subgroups (Cambodian, Chinese, Filipino, Hawaiian, Korean, Laotian, Pacific Islanders and Vietnamese), and is the fifth most common cancer among Laotian and Korean women in California (4). The high rates of liver cancer in these subgroups are likely due to chronic hepatitis B virus infection, the most common risk factor for liver cancer in Asia (3). It was estimated that there would be 21,730 new cases of liver and bile duct cancer in the U.S. in 2008, though it is much more common in developing countries in Africa and East Asia (3).

Incidence Trends

Rates of liver cancer more than doubled in the Greater Bay Area over the period 1989-2006 for both men and women. Liver cancer is more common among men than women (Figure 1).

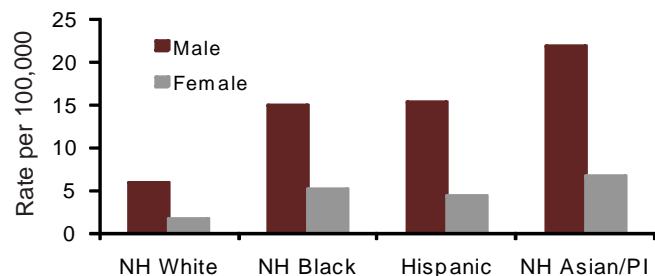
Figure 1. Age-adjusted incidence rates of liver cancer by year of diagnosis, Greater Bay Area, 1989-2006



Racial/Ethnic Patterns

Liver cancer, unlike many other forms of cancer, is highest among non-Hispanic (NH) Asians/Pacific Islanders (PI). It is least common among NH Whites (Figure 2). This pattern is also seen nationwide (2).

Figure 2. Age-adjusted incidence rates of liver cancer by race/ethnicity, Greater Bay Area, 2002-2006

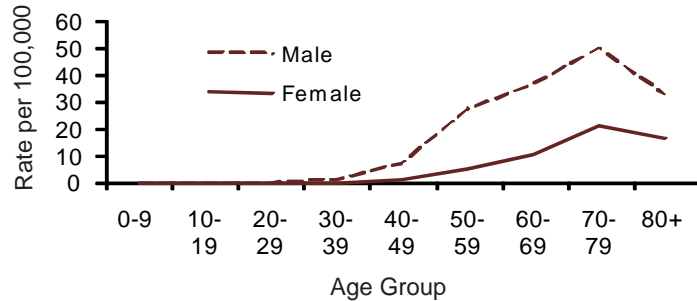




Age-Specific Incidence

Liver cancer incidence rates increase with age, peaking in the 70-79-year old age group. It is generally rare before the age of 40, although less so among Asians/Pacific Islanders (Figure 3).

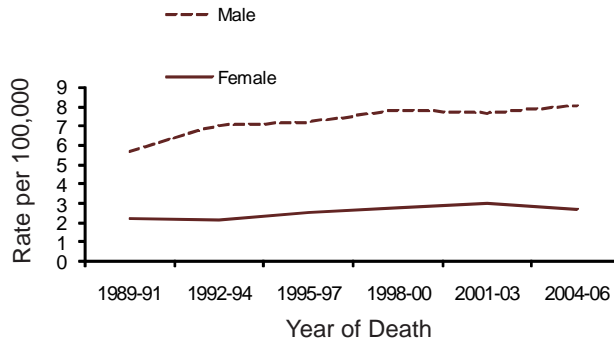
Figure 3. Age-specific incidence rates of liver cancer by age group, Greater Bay Area, 2002-2006



Mortality

From 1989 to 2006, mortality rates for liver cancer in the Greater Bay Area were on the rise, increasing by 30% for men and 18% for women (Figure 4).

Figure 4. Age-adjusted mortality rates of liver cancer by year of death, Greater Bay Area, 1989-2006



References:

1. California Cancer Registry. "Cancer Surveillance Spotlight: Liver Cancer". Located at: <http://www.ccrca.org/Spotlight/PDF/Liver-00.pdf>.
2. National Cancer Institute. "SEER Stat Fact Sheets: Liver and Intrahepatic Bile duct Cancer". Located at: <http://seer.cancer.gov/statfacts/html/livibd.html>.
3. American Cancer Society (2009). "Detailed Guide: Liver Cancer". Located at: http://www.cancer.org/docroot/CRI/CRI_2_3x.asp?dt=25.
4. American Cancer Society, California Division and Public Health Institute, California Cancer Registry. California Cancer Facts and Figures 2009. Oakland, CA: American Cancer Society, California Division, September 2008

Technical Notes: Because age distributions vary by population, a standard statistical procedure called "age-adjustment" was used so that we can examine differences in cancer incidence and mortality rates due to factors other than age. Rates are age-adjusted (using the Year 2000 population standard) unless noted to be age-specific. Race/ethnicity was categorized as four mutually-exclusive racial/ethnic groups: non-Hispanic whites (whites), non-Hispanic blacks (blacks), Hispanics, and non-Hispanic Asians/Pacific Islanders (Asians/Pacific Islanders).

About the data: Cancer data have been collected in Alameda, Contra Costa, Marin, San Francisco, and San Mateo counties since 1973, and in Monterey, San Benito, Santa Clara, and Santa Cruz counties since 1988, forming two parts (Regions 1 and 8) of the California Cancer Registry. These counties, referred to as the Greater San Francisco Bay Area are also part of the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) registry program.

Founded in 1974, the mission of the Northern California Cancer Center is to reduce the burden of cancer through surveillance, epidemiology, prevention research and education. Essential to this mission is collaboration with partners in cancer research, education and the community.