# PREVALENCE OF LIVER CANCERS

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## Abstract

According to WHO data, liver cancer is the third leading cause of cancer death worldwide, killing approximately 662,000 humans each year, mostly in Southeast Asia, the Pacific Rim and sub-Saharan Africa. ***Ye Y. Med J Therapeut Africa. 2007;2:227-8.***

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## Introduction

Primary cancer liver cancer originates in the liver; metastatic or secondary cancer originates in other organs and spreads to the liver. The most prevalent form of primary liver cancer in adults is hepatocellular carcinoma, which begins in hepatocytes, the majority of liver cells. Other forms of liver cancers include cholangiocarcinoma which starts in the hepatic bile duct, angiosarcomas in the blood vessels. Hepatoblastoma is another form afflicting mostly young children. Cancers developing in the bile duct branches inside the liver are known as intrahepatic bile duct (IBD) cancers.(1,2)

Liver cancer is reported to be the third leading cause of cancer death worldwide, killing approximately 662,000 humans each year, mostly in Southeast Asia, the Pacific Rim and sub-Saharan Africa.(3) In the United States an estimated 19,160 humans are expected to be diagnosed with liver and IBD cancer during 2007, with 16,780 humans expected to die from these cancers of whom approximately 70% are men.(4) Liver cancer is among the top 10 causes of death from cancer in the United States: 6th in men and 10th in women.

Liver and intrahepatic bile duct cancer has the greatest disparity between Asian/Pacific Islanders and Whites according to the *United States Statistics Data - 2003* from The Centers for Disease Control and Prevention (CDC). The incidence and death rate of liver and intrahepatic bile duct cancer is highest in Asian/Pacific Islanders, followed by Hispanics and American Indian/Alaska natives. Liver and intrahepatic bile duct cancer are most prevalent in Hawaii, followed by Alaska, District of Columbia, California and Rhode Island.(5) In California with the largest Asian population in the United States, Vietnamese Americans have the highest age-adjusted liver cancer rates among males (54.6 per 10,000), followed by Korean Americans (33.7 per 10,000), Chinese Americans (23.3 per 10,000), Japanese Americans (9.3 per 10,000), while the cancer rate in non-Hispanic White American men is 7.3 per 10,000.(6)

Liver cancer is a "silent killer" because the majority of the patients with an early stage of cancer often do not have any sign or symptoms, which mostly prevents its early detection. It usually causes symptoms in its later stages when the cancer is large or impairs the vital functions of the liver. Symptoms in patients in later stage of liver cancer can include pains in the upper abdomen and weight loss, lack of appetite, weakness or fatigue, nausea and vomiting, and even later, the appearance of abdominal fluid and bloating (ascites), yellow color of the skin and eye (jaundice). These symptoms also result from other terminal liver diseases.

Liver cancer most frequently develops in patients between 35 to 65 years. The average survival of patients with liver cancer after diagnosis at the later stages has been estimated as 3 to 6 months. The overall 5-year relative survival rate after diagnosis of liver cancer is under 10%. Cirrhosis, which scars the liver, is also a consequence of liver cancer, and contributes to the low survival rate.(1,2)

In southeast Asia, the Pacific Rim and sub-Saharan African, as well as worldwide, the biggest risk factor for liver cancer is chronic infection with hepatitis B virus (HBV), the second biggest risk factor is infection with hepatitis C virus (HCV). In the United States, liver cancer is most likely to follow HCV.(3) Hepatitis viruses are transmitted between humans in blood and body fluids.

Other risk factors include liver cirrhosis resulting from alcohol abuse and chronic infection in United States with HBC or HCV in United States, diabetes and obesity. Long-term tobacco use and exposure to some chemicals, such as aflatoxins, vinyl chloride and thorium Dioxide (thorotrast), arsenic and anabolic steroids, also can increase the risk of liver cancer. Men and those with a positive family history for liver cancer also have high risk to develop liver cancer.(1,2) Therefore, avoiding infections with HBV or HCV can help to prevent most liver cancer. Vaccination against HBV to children and adults in high risk has helped to prevent liver cancer worldwide.(3) Limiting alcohol use and eliminating the exposure to chemicals such as aflatoxins, thorotrast, arsenic and anabolic steroids also help to reduce the incidence rate of liver cancer.

Liver cancer is rarely found early because it often does not cause symptoms until its later stages and

small cancers are difficult to find by physical examinations. Early screening for liver cancer in high-risk HBV carriers and in patients with cirrhosis due to HBV or HBC chronic infection may be the only effective way of improving the early detection. The tests detecting liver cancer include physical examinations, alpha-fetoprotein blood test, ultrasound, computed tomography scans, magnetic resonance imaging, angiography, laparoscopy, biopsy. Treatments of primary liver cancer depend on the stage of the cancer and the condition of the liver as well as patient's overall health. Liver cancer may be cured by surgery only in early stages if it is localized, resectable and not spreading, and only if the rest of the liver is healthy. If the liver has cirrhosis, or if the cancer is large or late stage, liver transplantation may be a yreatment option. Other treatments (such as radiofrequency ablation, percutaneous ethanol injection, cryosurgery, hepatic arterial infusion, chemoembolization and chemotherapy) on later stage of liver cancer are generally minimally effective although they may help to control the disease and to improve quality of life.(1,2)

While liver cancer is rarer in United States in humans of European descent, the incidence of hepatocellular carcinoma is reported to be rising over last 2 decades in United States with the fastest increasing rates in white males between 45 and 54.(7,8)

HCV infection is a major risk factor contributing to the increased incidence of hepatocellular carcinoma.(9, 10) In a retrospective survey of hepatocellular carcinoma in the liver centers around United States between Jul 1997 and Jun 1999, HCV infection were seen in 46.5% of 691 patients with HCC studied, followed by no sign of viral infection (33.1%), HBV infection (15.4%), both HBV and HCV infection (4.7%).(9)

HBV vaccinations and better treatments for hepatitis are calculated to be able to prevent about 50% of liver cancer cases worldwide.(3) Serum profiling using a specific protein chip system is reported to be useful for early detection and prediction of hepatocellular carcinoma in patients with chronic HCV infection.(11)

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