

Hepatocellular carcinoma (HCC) is the most common form of liver cancer, and is the fifth most frequently diagnosed cancer worldwide.¹ HCC is a highly aggressive tumor² and many patients are diagnosed at an advanced stage, when traditional treatment options provide limited benefit.³ One of the most fatal cancers,⁴ HCC has a generally poor prognosis, with a five-year survival rate of less than 7 percent.³

Facts and Figures

- HCC represents 85-90 percent¹ of the estimated 711,000 new cases of liver cancer that were expected to occur worldwide in 2007.⁴
- Globally, HCC is the third most common cause of cancer mortality,¹ and accounted for approximately 680,000 deaths in 2007.⁴
- The incidence of HCC varies by geographical region, with most cases (more than 80 percent) occurring in either Eastern Asia or in sub-Saharan Africa¹ where infection with the hepatitis B and C viruses, major risk factors for HCC, are prevalent.³
- While HCC incidence is relatively low in more developed countries, increased rates have been observed in recent years and are expected to rise due to a growing prevalence of the hepatitis C infection.¹

Risk Factors

- **Gender:** Men are two to four times more likely to develop HCC than women.¹
- **Cirrhosis:** Cirrhosis, a condition that causes irreversible scarring of the liver,⁵ is the strongest clinical risk factor for HCC, and can be caused by multiple factors:
 - **Hepatitis B or C Virus:** Infection with hepatitis B or hepatitis C viruses is a primary cause of liver cirrhosis and greatly increases the risk of developing HCC.³ More than 75 percent of HCC cases worldwide are caused by these viruses.⁶
 - **Alcoholic Liver Disease:** Heavy alcohol intake is strongly associated with the development of cirrhosis and is a well-established risk factor of HCC.¹
- **Alfatoxins:** Alfatoxins are cancer-causing substances produced by mold that can contaminate certain types of food, such as corn or peanuts. Ingestion of alfatoxins can cause DNA damage and genetic mutations associated with HCC.¹
- **Nonalcoholic steatohepatitis (NASH):** NASH, or inflammation of the liver not associated with alcohol intake, is a less common risk factor for HCC, and is mainly attributed to obesity and diabetes mellitus.¹

Diagnosis and Treatment

- Symptoms of HCC are often similar to those of primary liver disease and include abdominal pain or tenderness (particularly in the right-upper quadrant), enlarged abdomen, easy bruising or bleeding and jaundice.⁷
- Surgical resection (or removal of the tumor) is considered the treatment of choice for HCC,³ however recurrence rates are high and only a small proportion of patients are eligible for surgery.²
 - Liver transplantation has shown to be an effective treatment, however its use is limited due to insufficient liver donation.³
- Non-surgical treatment options for HCC include locoregional therapies (such as local tumor ablation and embolization), systemic treatment with chemotherapy³ and targeted therapy.⁸

For additional information, please visit: <http://www.pfizer.com/asco>.

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- ¹ El-Serag H, et al. "Hepatocellular Carcinoma: Epidemiology and Molecular Carcinogenesis." *Gastroenterology*, 2007; 132:2557-2576.
- ² Thomas M, et al. "Opportunities for Targeted Therapies in Hepatocellular Carcinoma." *Journal of Clinical Oncology*, 2005;23:8093-8108.
- ³ Kassahun W, et al. Liver Resection and Transplantation in the Management of Hepatocellular Carcinoma: A Review. *Experimental and Clinical Transplantation*. 2006; 2:549-58.
- ⁴ Garcia M, et al. "Global Cancer Facts & Figures, 2007." American Cancer Society, 2007.
- ⁵ Mayo Clinic. "Cirrhosis." Available at: <http://www.mayoclinic.com/health/cirrhosis/DS00373>. Accessed May 21, 2008.
- ⁶ Parkin D, et al. "Global Cancer Statistics, 2002." *C: A Cancer Journal for Clinicians*, 2005;55:74-108.
- ⁷ Medline Plus. Medical Encyclopedia: Hepatocellular carcinoma. Available at: <http://www.nlm.nih.gov/medlineplus/ency/article/000280.htm#Symptoms>. Accessed November 26, 2008.
- ⁸ Zhang T, et al. Overexpression of Platelet-Derived Growth Factor Receptor a in Endothelial Cells of Hepatocellular Carcinoma Associated with High Metastatic Potential. *Clinical Cancer Research*. 2005; 11(24): 8557-8562.

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