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## Hepatocellular Carcinoma Fact Sheet

### The Disease

Hepatocellular carcinoma (HCC), also known as primary liver cancer, is the most common form of liver cancer and is responsible for 80 percent of the primary malignant liver tumors observed in adults.<sup>1</sup> For patients diagnosed with HCC the prognosis is poor because symptoms usually don't appear until late in the disease.<sup>2</sup>

### Key Statistics

- HCC is the fifth most common cancer worldwide<sup>1</sup>, with a five-year relative survival rate of about seven percent.<sup>3</sup>
- HCC disproportionately affects men, with four times as many men developing HCC as women.<sup>3</sup>
- HCC causes more than 500,000 deaths annually worldwide.<sup>3</sup>
- In 2000 approximately 564,000 cases of HCC were reported worldwide (11,500 in the United States and 50,000 in Europe), and more than 549,000 people (about 12,300 Americans and over 56,000 Europeans) died of HCC.<sup>4</sup>
  - The disease is most prevalent in Eastern and South Eastern Asia, and Middle Africa.<sup>4</sup>
    - Of the 564,000 cases worldwide approximately 271,500 were reported in Eastern Asia (with 221,000 in China and 33,000 in Japan alone)
  - The disease is least prevalent in Northern Europe, Central America and South Central Asia.<sup>4</sup>

### Risk Factors & Symptoms

Risk factors for HCC include:<sup>5</sup>

- On-going (chronic) infection with hepatitis B virus (HBV) and/or hepatitis C virus (HCV)
- Family history of liver diseases
- Cirrhosis (widespread disruption of normal liver structure by fibrosis and the formation of regenerative nodules that is caused by various chronic progressive conditions affecting the liver)
- Long-term exposure to aflatoxins
- Tobacco use
- Long-term use of anabolic steroids
- In some parts of the world, water contaminated with arsenic

Symptoms of HCC include:<sup>6</sup>

- Weight loss (for no known reason and without trying to lose weight)
- On-going lack of appetite
- Feeling very full after a small meal
- Swelling in the area of the stomach
- Ongoing stomach pain
- Yellow-green color to the skin and eyes (jaundice)
- Becoming sicker if you have chronic hepatitis or cirrhosis
- Pain around the right shoulder blade.<sup>3</sup>

## Treatment<sup>5</sup>

- Treatment options for HCC depend on the stage of the malignant disease, underlying liver function, which is a determinant of the usually co-existing cirrhosis, as well as the patient's overall condition.
- The three main types of treatment for liver cancer are surgery (including liver transplantation), locoregional treatment modalities and chemotherapy. Sometimes two or more of these methods are combined.
- Surgery offers the only chance to cure liver cancer. If the cancer is found at an early stage and the rest of the liver is healthy, surgery with or without liver transplantation may be curative. However, only about 15% of patients have resectable disease.<sup>7</sup> Even after surgery the five-year survival rate is only about 30 to 40 percent.
- There is no worldwide, approved local or systemic therapy for advanced HCC. The use of chemotherapy to treat HCC is still in clinical trials. Research includes testing systemic use of completely new drugs or drugs that have been used successfully for other types of cancer, most commonly doxorubicin, or delivering chemotherapy directly into the liver's main blood supply, the hepatic artery.<sup>8</sup>
- Patients with localized but unresectable disease are usually treated with some type of local treatment:
  - Ablation is a method that destroys the tumor without removing it. Examples include destroying the tumor with high-energy radio waves, freezing it with a very cold metal probe, or injecting alcohol directly into the tumor to kill cancer cells.
  - Embolization reduces the blood supply to the cancer by tying the artery that feeds the cancer or by injecting synthetic materials (e.g. gelatin foam, microspheres) that plug up the artery.
  - Chemoembolization involves combining embolization with chemotherapy. Studies are on going to determine whether the combination works better than embolization alone.
  - Because the above treatments also reduce blood supply to the normal liver tissue, they can be dangerous for people with diseases such as hepatitis and cirrhosis.

Leverkusen, September 29, 2004

## Forward Looking Statements

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<sup>1</sup> WHO, [World Cancer Report](#), IARC Press, 2003

<sup>2</sup> Mayo Clinic, <http://www.mayoclinic.com/invoke.cfm?objectid=C2850661-4805-4AD6-905AD30E9FC79DB2&dsection=5>

<sup>3</sup> World Health Organization, [http://www.who.int/emc-documents/hepatitis/docs/whocdscsrlyo20022/disease/hepatocellular\\_carcinoma.html](http://www.who.int/emc-documents/hepatitis/docs/whocdscsrlyo20022/disease/hepatocellular_carcinoma.html)

<sup>4</sup> GLOBOCAN 2000: Cancer Incidence, Mortality and Prevalence Worldwide, Version 1.0. IARC CancerBase No. 5. Lyon, IARC Press, 2001. <http://www-dep.iarc.fr/globocan/globocan.html>

<sup>5</sup> American Cancer Society, [http://www.cancer.org/docroot/CRI/CRI\\_2\\_1x.asp?rnav=crov&dt=25](http://www.cancer.org/docroot/CRI/CRI_2_1x.asp?rnav=crov&dt=25)

<sup>6</sup> NCI, <http://www.cancer.gov/cancertopics/pdq/treatment/adult-primary-liver/patient>

<sup>7</sup> Llovet JM, Bruix J, Gores GJ. Surgical resection versus transplantation for early hepatocellular carcinoma: clues for the best strategy. *Hepatology* 2000;31(4):1019-21

<sup>8</sup> Cancer Research UK, <http://www.cancerhelp.org.uk/help/default.asp?page=4917#chemo>