

HEPATOCELLULAR CARCINOMA (HCC)

What is HCC?

Hepatocellular Carcinoma (HCC) is the world's most common form of primary liver cancer – cancer that starts in the liver. It affects mainly patients with cirrhosis, a condition in which the liver has become damaged by hepatitis or alcohol misuse. HCC represents more than 90% of primary liver cancers and is a major global health problem.¹

Estimates for the coming decade suggest that the global burden of the disease will increase considerably as large segments of the world's population continue to age.² The incidence of HCC increases as people grow older, reaching a peak at around 70 years.¹

What causes HCC?

Most patients with HCC have underlying cirrhosis of the liver, which develops following long periods of chronic liver disease. Although major risk factors of HCC vary across regions, it is mostly caused by viral hepatitis, a liver inflammation due to viral infection, and alcohol misuse. Overall, one-third of cirrhotic patients will develop HCC during their lifetime.³

In addition to these causes, extreme cases of non-alcoholic fatty liver disease called NASH (non-alcoholic steatohepatitis) can also progress to HCC. This is thought to be related to the worldwide epidemic of diabetes and obesity.⁴

HCC in numbers

- Primary liver cancer is the sixth most common cancer in the world and the second leading cause of cancer-related death.²
- HCC results in more than 670,000 deaths globally per annum.⁵
- Unfortunately, only about 30–40% of HCC patients are eligible for curative therapies such as liver transplantation or surgery.⁶
- For the majority of HCC patients who present with advanced HCC that cannot be removed by surgery, life expectancy generally does not exceed 11 months with therapy.⁷
- No new first-line treatment alternative has become available for patients with advanced HCC for more than a decade.

How to treat HCC?

Compared to most other common cancers worldwide, such as lung, breast, colorectal and stomach cancer, there are only a few proven medical treatments for HCC.¹

Treatment for HCC depends on how advanced the cancer is at the time of diagnosis. Doctors evaluate this by observing how far the liver tumours have developed and how seriously the patient's liver damage affects his or her overall health status. Different treatment options exist:

1. Surgery

Wherever possible, the standard of care for HCC is an operation. Surgery and transplantation achieve the best outcomes and are the first option in patients with early tumours.¹

2. Local ablation

Local ablation to destroy tumours with radiofrequency, microwaves or ethanol injection is considered the standard of care for patients with small tumours in very early and early stages, who are not suitable for surgery.

3. Chemoembolisation

Transarterial Chemoembolisation (TACE) is the most widely used treatment for HCC that is inoperable or cannot be ablated. There are two types of TACE – Conventional TACE (cTACE) and Drug-Eluting Bead TACE (DEB-TACE).¹

cTACE involves injecting a chemotherapy agent directly into an artery that supplies a tumour with blood. DEB-TACE involves injecting small particles loaded with chemotherapeutic agents into an artery directly supplying a tumour.

These two techniques interrupt the tumour's blood supply and delay tumour re-growth.¹

Both forms of TACE normally require multiple treatments and in many cases several days of hospitalisation.^{8,9}

4. Sorafenib

Sorafenib is the standard systemic therapy for advanced HCC that cannot be treated surgically or locally. It is prescribed for patients with advanced disease and good liver function. Sorafenib, which was first approved in 2007, remains the only drug that has demonstrated a survival benefit in patients with advanced HCC (median overall survival (OS) from 7.9 months to 10.7 months in patients with advanced disease).⁷

5. Selective Internal Radiation Therapy (SIRT)

SIRT (also known as radioembolisation) is an innovative type of radiotherapy that targets liver tumours with high doses of radiation. The radiation is delivered in the form of millions of tiny microspheres placed inside the body via a catheter and carried to the tumour site like tiny "Trojan Horses" in the same blood supply that the tumours require to grow.

For patients with inoperable HCC, one or two treatments with SIRT using SIR-Spheres Y-90 resin microspheres have been shown to be at least as safe and effective as multiple TACE procedures and is well tolerated.^{10,11}

What is new for SIR-Spheres Y-90 resin microspheres in HCC?

Two large studies were launched in 2010 and 2011 to compare the efficacy and safety of SIR-Spheres Y-90 resin microspheres with sorafenib in patients with intermediate or advanced HCC - The SIRveNIB trial in Asia and the SARAH trial in Europe.^{12,13}

The results from SARAH and SIRveNIB were presented at the European Association for the Study of the Liver (EASL) congress in April 2017 and at the American Society of Clinical Oncology (ASCO) 2017 Annual Meeting in June 2017, respectively.

Neither study achieved its primary endpoint of increased OS for patients treated with SIR-Spheres Y-90 resin microspheres delivered directly to liver tumours *versus* systemic oral therapy with the standard of care, sorafenib.^{12,13}

In terms of planned secondary endpoints, SIRT using SIR-Spheres Y-90 resin microspheres was associated with significantly fewer and less severe treatment-related adverse events than systemic treatment with sorafenib. Moreover, it was demonstrated in the SARAH study that patient-reported Quality of Life measured with the global health status sub-score of the QLQ-C30 questionnaire was significantly better in the SIRT arm than in the sorafenib group.

In addition to these two "head-to-head" studies, a third large European study called SORAMIC is comparing treatment of HCC with SIR-Spheres Y-90 resin microspheres followed by sorafenib to treatment with sorafenib alone. Results from SORAMIC are expected to be presented at a major medical congress in 2018.

For more information please visit:

www.sirtex.com/HCC

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