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**Manuscript Type:** REVIEW

**Pharmacogenetics of the systemic treatment in advanced hepatocellular carcinoma**

De Mattia E *et al.* Pharmacogenetic markers of HCC therapy outcome

Elena De Mattia, Erika Cecchin, Michela Guardascione, Luisa Foltran, Tania Di Raimo,  
Francesco Angelini, Mario D'Andrea, Giuseppe Toffoli

## Abstract

Hepatocellular carcinoma (HCC) accounts for the majority of primary liver cancers. To date, most patients with HCC are diagnosed at an advanced tumor stage, excluding them from potentially curative therapies (*i.e.*, resection, liver transplantation, percutaneous ablation). Treatments with palliative intent include chemoembolization and systemic therapy. Among systemic treatments, the small-molecule multikinase inhibitor sorafenib has been the only systemic treatment available for advanced HCC over 10 years. More

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## Systemic therapy for advanced hepatocellular carcinoma: an ...

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Abstract: **Advanced hepatocellular carcinoma (HCC)** is a deadly disease with few **systemic therapeutic** options. Sorafenib is the only agent to be FDA approved for the first-line **treatment** of patients with HCC. This **drug** increases overall survival (OS) by 3 months compared with **placebo** (10.7 months with sorafenib vs. 7.7 months with **placebo**).

Cited by: 14

Author: Jasmin Radhika Desai, Sebastian Ochoa,...

Publish Year: 2017

## Systemic Therapy in Hepatocellular Carcinoma

[www.ncbi.nlm.nih.gov](http://www.ncbi.nlm.nih.gov) › Journal List › HHS Author Manuscripts

Many potential **systemic** therapies are being investigated for the **treatment** of **hepatocellular carcinoma**. HCC is a heterogeneous disease that occurs among very heterogeneous populations. The incidence of this malignancy is rising sharply and the vast majority of patients present at **advanced** ...

Cited by: 17

Author: Stephen H. Wzresinski, Tamar H. Taddei,...

Publish Year: 2011

## Hepatocellular carcinoma review: Current treatment, and ...

[www.ncbi.nlm.nih.gov](http://www.ncbi.nlm.nih.gov) › ... › v.20(15); 2014 Apr 21

Apr 21, 2014 · INTRODUCTION. **Hepatocellular carcinoma (HCC)** is the fifth most common form of **cancer** worldwide and the third most common cause of **cancer-related** deaths. HCC often occurs in the background of a cirrhotic liver[ 1 ]. Orthotopic liver transplantation (OLT) is an effective **treatment** for both HCC and underlying **cirrhosis**,...

Cited by: 170

Author: Ali Raza, Gagan K Sood

Publish Year: 2014

## New Systemic Treatments in Advanced Hepatocellular ...

<https://aasldpubs.onlinelibrary.wiley.com/doi/abs/10.1002/lt.25354>





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## Treatment of Hepatocellular Carcinoma: A Systematic Review

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3760458>

Nov 26, 2012 · **Advanced-stage HCC and terminal-stage HCC.** The **therapeutic** recommendation for this stage is **oral sorafenib treatment**. Despite improvements in survival after sorafenib administration, the prognosis for patients with this stage of **HCC** is still poor, with a median overall survival rate of 6.5–10.7 months [ 25 ].

Cited by: 222

Author: Shibo Lin, Katrin Hoffmann, Peter Schem...

Publish Year: 2012

## Systemic Treatment of Advanced Hepatocellular Carcinoma ...

[jnsi.org/files/html/2018/e518.htm](https://jnsi.org/files/html/2018/e518.htm) ▾

Systemic Treatment of Advanced Hepatocellular Carcinoma in Older Adults Over the past 30 years, the incidence in of hepatocellular carcinoma (**HCC**) in the United States has tripled, largely due to **untreated chronic Hepatitis C virus, alcoholic hepatitis, and non-alcoholic steatohepatitis (NASH)**.

Author: Luisa M. Arellano, Sukeshi Patel Arora

Publish Year: 2018

## Systemic therapy for advanced hepatocellular carcinoma: an ...

[jgo.amegroups.com/article/view/12848/10855](https://jgo.amegroups.com/article/view/12848/10855) ▾

Abstract: **Advanced hepatocellular carcinoma (HCC)** is a deadly disease with few **systemic therapeutic** options. **Sorafenib** is the only agent to be FDA approved for the **first-line treatment** of patients with **HCC**. This **drug** increases overall survival (OS) by 3 months compared with **placebo** (10.7 months with sorafenib vs. 7.7 months with **placebo**).

Cited by: 18

Author: Jasmin Radhika Desai, Sebastian Ochoa,...

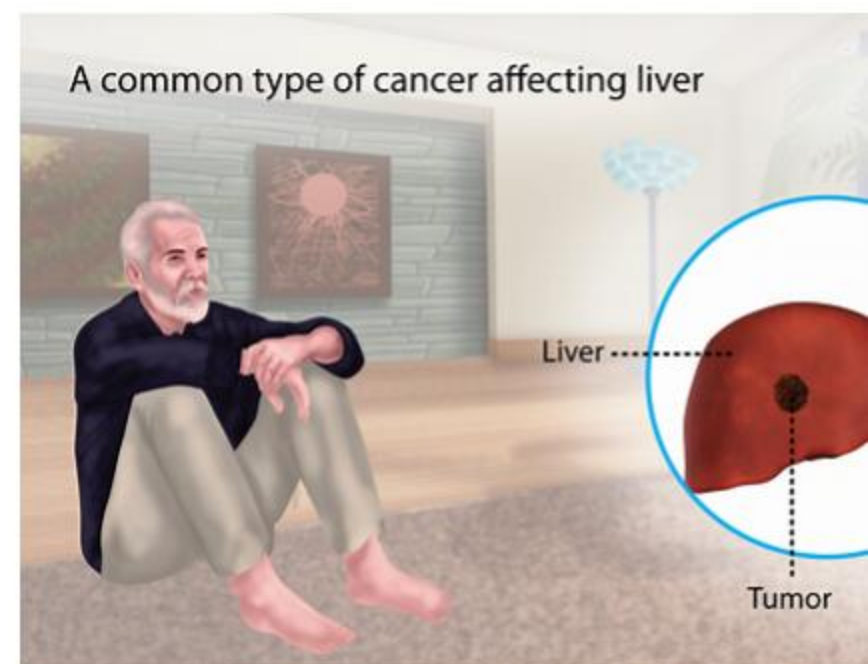
Publish Year: 2017

## UpToDate

<https://www.uptodate.com/contents/systemic-treatment-for-advanced-hepatocellular-carcinoma>Koeberle D, Montemurro M, Samaras P, et al. **Continuous Sunitinib** treatment in patients with

## Hepatocellular carcinoma

Medical Condition



The most common form of liver cancer often seen in people with liver diseases like cirrhosis.

- 🏠 Rare (Fewer than 200,000 cases per year in US)
- 📌 May be preventable by vaccine
- 🔬 Diagnosis often requires lab test or imaging
- 👨⚕️ Treatment from medical professional advised
- 🕒 Can last several months or years

Caused mainly due to the chronic infection of the liver or DNA damage to the liver cells. Characterized by unexplained weight loss, upper abdominal pain and yellowing of the skin. Treatment options include hepatic resection, target drug delivery and use of radiation to kill the cancerous cells.





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## UpToDate

<https://www.uptodate.com/contents/systemic-treatment-for-advanced-hepatocellular-carcinoma>

Koeberle D, Montemurro M, Samaras P, et al. Continuous Sunitinib **treatment** in patients with **advanced hepatocellular carcinoma**: a Swiss Group for Clinical Cancer Research (SAKK) and Swiss Association for the Study of the Liver (SASL) multicenter phase II trial (SAKK 77/06).

## Treatment of Hepatocellular Carcinoma: A Systematic Review

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3760458>

Nov 26, 2012 · Introduction. **Hepatocellular carcinoma** (HCC) is the fifth most common form of cancer and the third leading cause of cancer-related death worldwide []. The number of cases diagnosed with HCC is expected to increase in Western countries []. Therapeutic approaches for the **treatment** of HCC can be classified into three categories: potentially curative, palliative, and symptomatic.

Cited by: 222

Author: Shibo Lin, Katrin Hoffmann, Peter Schem...

Publish Year: 2012

## Systemic Treatment for Advanced Hepatocellular Carcinoma

[https://www.researchgate.net/publication/331576785\\_Systemic\\_Treatment\\_for\\_Advanced...](https://www.researchgate.net/publication/331576785_Systemic_Treatment_for_Advanced...)

Background: Patients with **advanced hepatocellular carcinoma** (HCC) have a poor prognosis. First-line sorafenib has been the standard of care for a decade, but the **treatment** landscape is expanding.

## Systemic Management for Advanced Hepatocellular ...

<https://link.springer.com/article/10.1007/s10620-019-05582-x> ▾

Mar 18, 2019 · The past decade has yielded notable advances in the **systemic** management of **advanced** HCC (Fig. 1). For most patients, **treatment** currently relies on one of four oral multi-targeted tyrosine kinase inhibitors (TKIs) or nivolumab, a monoclonal antibody that targets programmed cell death 1 receptor (PD-1).

Author: Saad Saffo, Tamar H. Taddei

Publish Year: 2019

## Systemic Treatment of Advanced Hepatocellular Carcinoma ...

[jnsi.org/files/html/2018/e518.htm](https://jnsi.org/files/html/2018/e518.htm) ▾

**Systemic Treatment of Advanced Hepatocellular Carcinoma** in Older Adults Over the past 30 years, the incidence in of **hepatocellular carcinoma** (HCC) in the United States has tripled, largely due to untreated chronic Hepatitis C virus, alcoholic hepatitis, and non-alcoholic steatohepatitis (NASH).

Author: Luisa M. Arellano, Sukeshi Patel Arora

Publish Year: 2018

## Sorafenib Plus Oxaliplatin, Fluorouracil, and Leucovorin ...

## Hepatocellular carcinoma

Medical Condition

Image for Condition

The most common form of liver cancer often seen in people with chronic liver diseases like cirrhosis.

Rare (Fewer than 200,000 cases per year in US)

May be preventable by vaccine

Diagnosis often requires lab test or imaging

Treatment from medical professional advised

Can last several months or years

Caused mainly due to the chronic infection of the liver or DNA mutation of the liver cells. Characterized by unexplained weight loss, upper abdominal pain and yellowing of the skin. Treatment options include hepatectomy, target drug delivery and use of radiation to kill the cancerous cells.

## Symptoms

The early stages of the disease do not present any symptoms but in the later stages the symptoms which are noted are as follows:

- Upper abdominal pain
- Weight loss
- Jaundice
- Fluid in the abdomen
- Liver failure