

Hepatitis C

The need for an accurate and early detection, therapy and monitoring

The hepatitis C virus (HCV) is transmitted through blood contact and can cause acute and chronic liver disease. Potentially it leads to liver failure, cirrhosis and liver cancer. While HCV infects cells in the liver it creates severe inflammation with long-term complications. Illegal injection drug users, as well as individuals who received human blood, blood products or organs before HCV screening of blood products was commonly established, may be at increased risk for an HCV infection. Mother-to-baby transmissions are well documented, but remain uncommon. Hepatitis C is not spread through casual contact such as kissing, sharing food or drinks with an infected person. To date, about 200 million of the world's population is infected with HCV with about 4 million carriers in Europe alone. The World Health Organization (WHO) states up to 4 million new HCV cases globally each year, while more than 250,000 die from Hepatitis related liver diseases.¹

Symptoms

Hepatitis C ranges in the variety of symptoms. The onset of disease is generally insidious, with anorexia, abdominal discomfort, nausea and vomiting, fever and fatigue progressing to jaundice in about 25% of patients. About one in five people infected eliminate HCV, an estimated 40% recover fully, but a remainder becomes chronic carriers and 20% of these will develop cirrhosis. Of those with cirrhosis, up to 20% develop liver cancer. An accompanying infection with HIV and alcohol abuse is known to push on liver damage.² Therefore early detection is the first step in managing chronic HCV infection and selecting patients in need of targeted treatment.

Diagnosis

Identifying HCV infection in its early stages is difficult as symptoms are often absent or non-specific. Approximately 80% of people do not exhibit any symptoms of an HCV infection. Diagnosis is commonly confirmed by the method of HCV immunotesting (anti-HCV), a proven method for the existence of HCV antibodies in human blood. Since antibodies develop during acute infection, anti-HCV is generally not detectable in patients within the very initial stages of hepatitis C. As some patients may still test negative after onset of illness symptoms, an early indication of Hepatitis C predominance is an HCV RNA test which directly proves the presence of an HCV viral load.

Blood safety

Blood donation helps people in need suffering from injuries and chronic diseases like anemia. Despite the fact that donated blood should strictly be screened for pathogens including Hepatitis B, Hepatitis C and HIV, a global WHO survey has shown that 41 out of 162 countries worldwide are not following to an integral standard routine testing. According to the WHO, in total 22% of all global blood donations are not screened for a severe pathogen contamination like HCV.³ Basic quality assurance in some countries is still unseen. Therefore, an improved compliance to overall blood product safety becomes crucial, as a large grey zone of undiagnosed people with HCV exists globally.

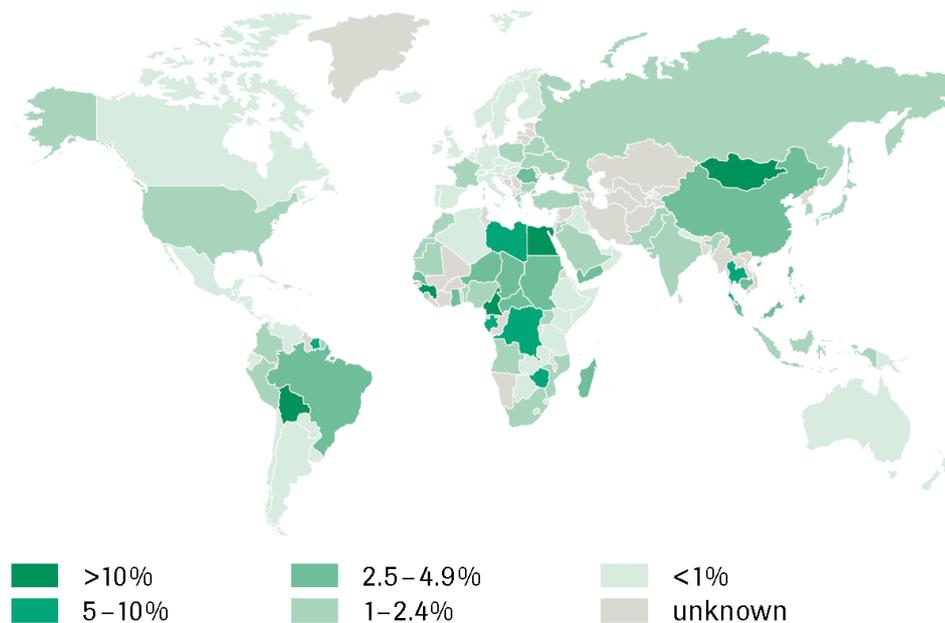


Fig. 1: Global prevalence of hepatitis C virus.⁴

Guided therapy and monitoring for hepatitis C patients

Personalized Healthcare has already begun to add true medical value to health professionals and patients with hepatitis C, as there already is a successful treatment option that shows a clear shift from a “one size fits all” perspective towards a target oriented and response-guided therapy approach. The Elecsys® anti-HCV II assay on **cobas® c** modules from Roche detects antibodies against HCV, thereby allowing health professionals an early diagnosis, the first step towards a consolidated treatment of patients with hepatitis C. Patients undergoing a Peginterferon alfa-2a and

Ribavirin therapy can be accurately monitored using automated and highly sensitive, real-time PCR tests. The HCV RNA test on COBAS® AmpliPrep/COBAS® TaqMan® instrument plays an integral role in predicting the treatment response.

References

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- 2) European Association for the Study of the Liver (EASL). Fact sheet viral hepatitis, state of 2010.
- 3) World Health Organization (WHO) Global Database on Blood Safety (GDBS) and Blood Safety Indicators, state of 2007.
- 4) Hepatitis C WHO report WHO/SCD/SCR/LYO/2003
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