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Hepatitis C

Introduction

Hepatitis C is one of several hepatitis viruses that can cause both acute hepatitis and chronic liver disease. Hepatitis C is a spherical, enveloped RNA virus of the genus *Hepacivirus* and is transmitted most commonly through direct contact with infected blood.

Epidemiology

Global epidemiology

Hepatitis C virus (HCV) is prevalent worldwide, although there is limited epidemiologic data as most infections are asymptomatic. Studies have often been conducted in population sub-groups.

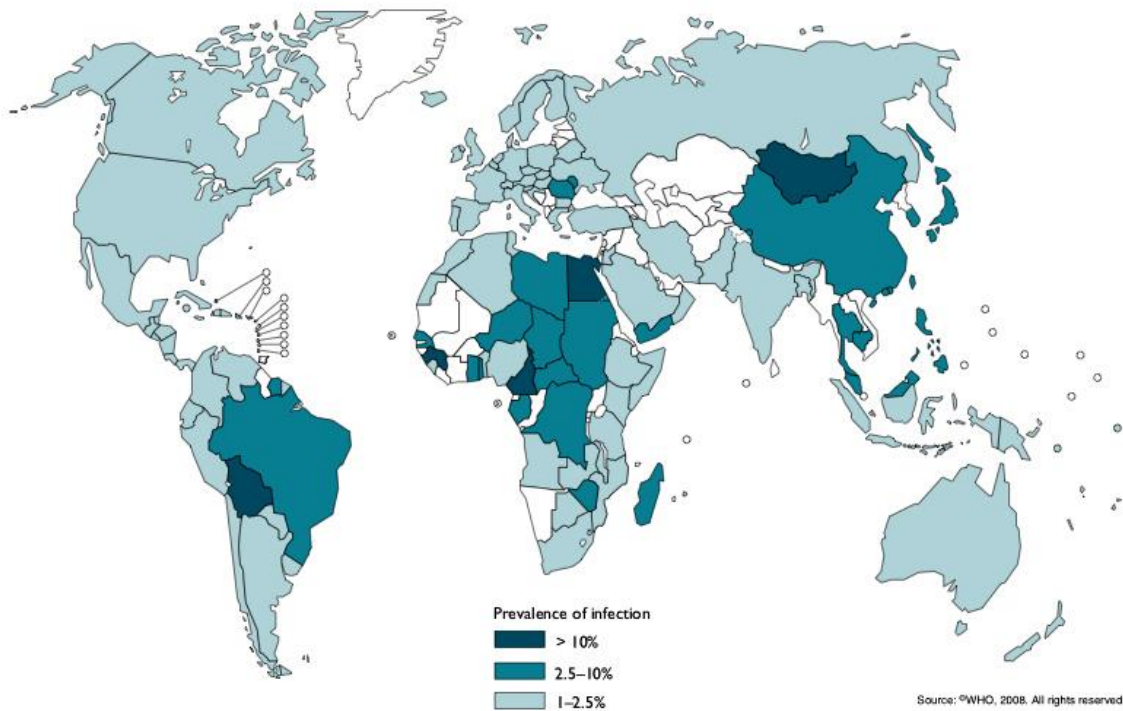
The World Health Organization (WHO) published its first estimate of global prevalence of HCV in 1997 by reviewing 263 journal articles reporting HCV seroprevalence rates in different countries [1]. An exclusion criteria was applied and 116 studies (one per country) were selected, with countries grouped according to WHO regions. It was estimated that 160 million people were infected globally with HCV, and that HCV was present in all but three countries Botswana, Peru, and Zambia (where data was available).

High prevalence rates were found in countries such as Egypt, Bolivia, Burundi, Cameroon, Guinea, Mongolia, Rwanda, and Tanzania. WHO regions where prevalence was reported to be high were Africa, the Eastern Mediterranean, South East Asia and the Western Pacific. Lower prevalence was found in North America and Europe.

Prevalence figures were updated in 1999 using data from 131 countries [2]. An estimated 170 million people worldwide (3% of the world's population) are now thought to be chronic carriers [3].

On a global scale, the United Kingdom (UK) is considered a low prevalence region. In England and Wales, the estimated number of individuals aged 15-59 years with antibodies to HCV in 2003 was 231,000 [4]. Around 75% of the antibody positive population is likely to become chronically infected.

Hepatitis C, 2007



Map courtesy of the World Health Organization. International Travel and Health. 2008.

Hepatitis C in UK travellers

Laboratory surveillance of HCV infections in England and Wales began in 1992 and up to 2004, there were 295 HCV infections reported as having been acquired abroad, representing 0.6% (295/49,819) of the total [5]. Country of infection was reported for 82.4% (243/295) of which Pakistan (10.3%, 25/243), Italy (9.9%, 24/243), and Spain (7.8%, 19/243) were the most common. Of infections reported as being acquired abroad, 36.6% (108/295) stated risk factors, of which injecting drug use (48.1%, 52/108) was most frequent, followed by receipt of blood products (28.7%, 31/108).

Risk for travellers

The risk of HCV for most travellers is very low. However travellers involved in activities such as injection drug use will be at higher risk. Acupuncture, tattooing, body piercing, unscreened blood transfusions or renal dialysis in areas with a high prevalence of infection, also increase the likelihood of infection [6, 7].

Work-related exposure to blood and body fluids as may occur with healthcare workers, emergency personnel and laboratory staff are also risks.

Using data collected from UK healthcare workers between 1997 and 2005, the HPA reports that the risk of HCV transmission following an occupational exposure from a



source known to be HCV positive ranges from 0% to 5.6%. Percutaneous exposure is the main risk factor [8].

Transmission

Hepatitis C is primarily acquired following contact with infected blood, with injecting drug use reported as one of the most important risk factors [4]. Skin piercing procedures such as tattooing, acupuncture [7] and beauty treatments with the potential for accidental skin piercing such as manicures/pedicures are other possible risk factors [6].

Mother to child transmission may occur during pregnancy or delivery in women with HCV viraemia [4]. The role of sexual transmission is unclear [9, 10], however, approximately 20% of those with HCV infection and no known percutaneous risk factors, report exposure to an infected sexual partner.

Prior to routine blood screening procedures, transfusion associated HCV was a global risk. Countries that have introduced routine HCV testing of blood donors have considerably reduced this risk. In low income countries unable to introduce routine testing of blood donors, HCV still remains a transfusion associated risk [9, 10].

Signs and symptoms

Eighty to ninety percent of acute hepatitis C infections are asymptomatic. In symptomatic infections, abdominal pain, nausea, loss of appetite, jaundice and dark urine begin about seven weeks after infection.

Chronic infection with HCV develops in 75% to 85% of infected individuals. The most common symptom of chronic infection is fatigue. Low-grade hepatitis over many years can lead to cirrhosis, liver failure and hepatocellular carcinoma [7]. Co-infection with hepatitis C and HIV is synergistic in contributing to chronic liver disease.

Chronic hepatitis C is the leading cause for liver transplantation in the United States [7]. Hepatitis C is currently the second leading cause for liver transplantation in the UK, with alcoholic cirrhosis being the leading cause [Harvey P, NHS Blood and Transplant UK, personal communication, 16 August 2007]

Treatment

Several antiviral regimens have been assessed. Currently the recommended treatment for chronic HCV in the UK is a combination of peginterferon alfa and ribavirin. Patients require close monitoring during treatment [11].

Individuals with chronic HCV infection should be advised to receive vaccination against [hepatitis A](#) and [hepatitis B](#), and to avoid alcohol and potentially hepato-toxic agents such as paracetamol.

Prevention

There is no vaccine available to prevent HCV. Travellers should be advised to avoid behaviour that puts them at risk. This will also reduce the risk of exposure to other blood-borne viruses including [hepatitis B](#) and [HIV](#). Travellers who will not be within easy access of reliable medical facilities should carry a sterile medical kit. Travellers should avoid sharing medical equipment or illicit drug paraphernalia, unprotected sex, tattoos, body piercing, acupuncture and any beauty treatments with the potential risk of accidental piercing of skin.

Healthcare workers and other occupational groups whose work puts them at risk of HCV exposure, should ensure they take appropriate precautions. These include following universal infection control guidelines, awareness of post exposure first aid measures and use of suitable personal protective equipment. Immediate medical advice must be sought following a potential exposure.

References

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Reading list

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