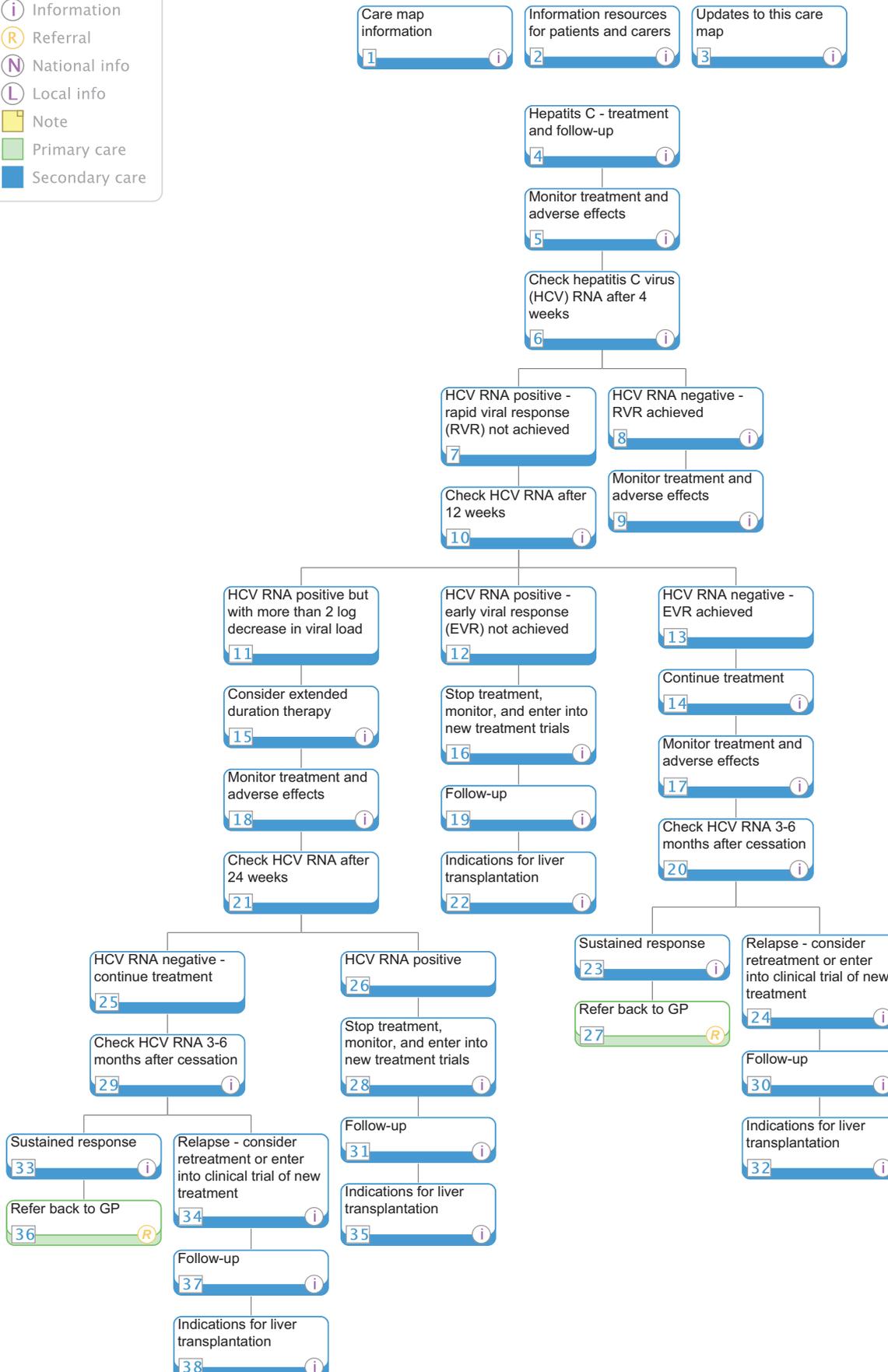


# Hepatitis C - treatment and follow-up

Medicine > Hepatology > Hepatitis C

- i Information
- R Referral
- N National info
- L Local info
- Note
- Primary care
- Secondary care



# Hepatitis C - treatment and follow-up

Medicine > Hepatology > Hepatitis C

## 1 Care map information

Quick info:

Scope:

- diagnosis of hepatitis C virus (HCV) in primary care
- management of HCV and elimination with antiviral therapy in people with chronic infection in secondary care

Out of scope:

- the diagnosis and management of HCV in children

Hepatitis C:

- flavivirus infection of the liver – several genotypes exist and have important clinical implications
- often asymptomatic – the majority of acutely infected patients are asymptomatic
- jaundice can occur – present in less than 25% of acute hepatitis C infections [5]
- acute symptoms, if present, are similar to those in other forms of acute viral hepatitis, eg:
  - malaise
  - nausea
  - right upper quadrant abdominal pain
- rarely presents with fulminant hepatic failure
- chronic infection occurs in 50-80% of patients [5]
- may be detected in the course of routine blood donor screening or screening high-risk individuals

Prevalence:

- worldwide HCV prevalence is 3.1% [3]
- in England and Wales, 200,000-500,000 people are estimated to be infected with HCV [5]
- there is variation in prevalence among sub-groups [5]:
  - blood donors – 0.04%
  - people attending genitourinary clinics – 1%
  - intravenous (IV) drug users attending drug misuse clinics – up to 50%
- prevalence of different genotypes varies significantly geographically:
  - in the UK, genotype 1 and 3 are equally common [6,7]
  - only small numbers of patients in the UK are infected with genotypes 4, 5 and 6 [4] – most people will have acquired these genotypes overseas [5]

Prognosis:

- approximately [3]:
  - 25% of people will clear the virus at the acute stage
  - 75% will develop chronic disease
- of those who develop chronic disease:
  - some will remain well and never develop liver damage
  - many will develop mild to moderate liver damage (with or without symptoms)
  - most will progress to develop cirrhosis of the liver over a period of 20-40 years [2]
  - the proportion of patients affected accelerates with increasing age [5]
- of those with cirrhosis, approximately 5% per year will develop a life-threatening event, such as liver failure or primary hepatocellular carcinoma [3]

Risk factors:

- country of origin:
  - Egypt 14% – [2]
  - Europe – 0.7-1.2% [2]
  - Pakistan – 2-3% [7]
- blood and blood product transfusion received prior to the introduction of screening in 1991 [2,3,8]
- organ or tissue transplants received in the UK before 1992 [1]

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# Hepatitis C - treatment and follow-up

Medicine > Hepatology > Hepatitis C

- IV drug use
- snorting cocaine
- tattoos or ear piercing
- sexual contact with infected people:
  - relatively uncommon
  - less than 5% of sexual partners are also infected [8]
- multiple sexual partners
- sharing household implements such as razors with infected individuals
- vertical (mother-to-neonate) transmission:
  - less than 6% in most studies – this doubles or triples if co-infection with HIV is present [1-3,8]
- healthcare in areas of the world where unsterile injections are given

Hepatitis C is a notifiable disease in the UK.

References:

- [1] British Association of Sexual Health and HIV (BASHH). United Kingdom National Guideline on the management of the viral hepatitis A, B and C 2008. London: BASHH; 2008.
- [2] Clinical Knowledge Summaries (CKS). Hepatitis C. Version 1.1. Newcastle upon Tyne: CKS; 2010.
- [3] Royal College of General Practitioners (RCGP). Guidelines for the prevention, testing, treatment and management of hepatitis C in primary care. London: RCGP; 2007.
- [4] National Institute for Health and Clinical Excellence (NICE). Peginterferon alfa and and ribavirin for the treatment of chronic hepatitis C. London: NICE; 2010.
- [5] Map of Medicine (MoM) Clinical Editorial team and Fellows. London: MoM; 2011.
- [6] Health Protection Agency (HPA). Hepatitis C in the UK 2009 Report. London: HPA; 2009.
- [7] Contributors representing the Department of Health (DH) National Liver Disease Strategy (NLDS); 2011.
- [8] Department of Health (DH). Hepatitis C: essential information for professionals and guidance on testing. London: DH; 2004.
- [9] Devlin J, O'Grady J. Hepatitis C: quick reference guide for primary care. London: Department of Health; 2009.

## 2 Information resources for patients and carers

Quick info:

Patients and carers in England can access this care map through NHS Choices at [http://healthguides.mapofmedicine.com/choices/map/hepatitis\\_c1.html](http://healthguides.mapofmedicine.com/choices/map/hepatitis_c1.html)

The following resources have been produced by organisations certified by [The Information Standard](#):

- '[Hepatitis C](#)' (URL) from Bupa at [www.bupa.co.uk](http://www.bupa.co.uk)
- '[Hepatitis C](#)' (URL) from Datapharm at [www.medguides.medicines.org.uk](http://www.medguides.medicines.org.uk)
- '[Hepatitis C](#)' (URL) from Patient UK at [www.patient.co.uk](http://www.patient.co.uk)
- '[Hepatitis C](#)' (URL) from from the Terrence Higgins Trust at [www.tht.org.uk](http://www.tht.org.uk)
- '[Are you at risk of hepatitis C?](#)' (PDF) from The Hepatitis C Trust at [www.hepctrust.org.uk](http://www.hepctrust.org.uk)
- '[HIV and Hepatitis C](#)' (PDF) from The Hepatitis C Trust at [www.hepctrust.org.uk](http://www.hepctrust.org.uk)
- '[Just diagnosed with hepatitis C?](#)' (PDF) from The Hepatitis C Trust at [www.hepctrust.org.uk](http://www.hepctrust.org.uk)

The following resources have been written or recommended by national policy bodies or guideline producers whose content has informed this care map:

- '[Hepatitis C](#)' (URL) from Clinical Knowledge Summaries (CKS) at [www.cks.nhs.uk](http://www.cks.nhs.uk)

Information for carers and people with disabilities is available at:

- '[Caring for someone](#)' (URL) from Directgov at <http://www.direct.gov.uk>
- '[Disabled people](#)' (URL) from Directgov at <http://www.direct.gov.uk>

Patient stories describing their care journeys are available at '[Healthtalkonline](#)' (URL) from DIPEX at <http://www.healthtalkonline.org/>  
Explanations of clinical laboratory tests used in diagnosis and treatment are available at '[Understanding Your Tests](#)' (URL) from Lab Tests Online-UK at <http://www.labtestsonline.org.uk>

The Map of Medicine is committed to providing high quality health and social care information for patients and carers. For details on how these resources are identified, please see '[Map of Medicine Patient and Carer information](#)'.

# Hepatitis C - treatment and follow-up

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NB: This information appears on each page of this care map.

## 3 Updates to this care map

Quick info:

Date of publication: 29-Apr-2011

Three information points now appear at the top of each care map page. These provide:

- easy access to scope and background information on each page of the care map whilst reducing repetition between care points
- easy access to patient resources/leaflets
- information on care map updates

This care map has been updated in line with the following guidelines:

- [1] British Association of Sexual Health and HIV (BASHH). United Kingdom National Guideline on the management of the viral hepatitis A, B and C 2008. London: BASHH; 2008.
- [2] Clinical Knowledge Summaries (CKS). Hepatitis C. Version 1.1. Newcastle upon Tyne: CKS; 2010.
- [3] Royal College of General Practitioners (RCGP). Guidelines for the prevention, testing, treatment and management of hepatitis C in primary care. London: RCGP; 2007.
- [4] National Institute for Health and Clinical Excellence (NICE). Peginterferon alfa and and ribavirin for the treatment of chronic hepatitis C. London: NICE; 2010.
- [6] Health Protection Agency (HPA). Hepatitis C in the UK 2009 Report. London: HPA; 2009.
- [8] Department of Health (DH). Hepatitis C: essential information for professionals and guidance on testing. London: DH; 2004.
- [9] Devlin J, O'Grady J. Hepatitis C: quick reference guide for primary care. London: DH; 2009.
- [10] Scottish Intercollegiate Guidelines Network (SIGN). Management of hepatitis C. Edinburgh: SIGN; 2006.
- [11] British Society of Gastroenterology (BSG). Indications for referral and assessment in adult liver transplantation: a clinical guideline. London: BSG; 2000.

Further information was provided by the following references: [5,7]

For further information, please see the care map's Provenance.

The care map has been completely restructured and redrafted in line with the Map of Medicine's editorial methodology and to bring it in line with current clinical practice.

NB: This information appears on each page of this care map.

## 4 Hepatitis C - treatment and follow-up

Quick info:

Treatment [2,4]:

- combined therapy with peginterferon alpha and ribavirin is the treatment of choice
- first-line treatment for moderate or severe chronic hepatitis C is combination therapy with ribavirin and either [3,10]:
  - peginterferon alpha-2a; or:
  - peginterferon alpha-2b

Genotype of the virus determines the length of treatment course [4]:

- genotype 2 and/or 3 – 24 weeks treatment [2,3]
- genotype 1, 4:
  - initial treatment – 12 weeks
  - at 12 weeks [3]:
    - patients with a 2 log drop in viral load – continue treatment until 48 weeks [10]
    - patients with viral load over 1% of the level at start of treatment – discontinue treatment [2]

References:

[2] Clinical Knowledge Summaries (CKS). Hepatitis C. Version 1.1. Newcastle upon Tyne: CKS; 2010.

[3] Royal College of General Practitioners (RCGP). Guidelines for the prevention, testing, treatment and management of hepatitis C in primary care. London: RCGP; 2007.

# Hepatitis C - treatment and follow-up

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[4] National Institute for Health and Clinical Excellence (NICE). Peginterferon alfa and and ribavirin for the treatment of chronic hepatitis C. London: NICE; 2010.

[10] Scottish Intercollegiate Guidelines Network (SIGN). Management of hepatitis C. Edinburgh: SIGN; 2006.

## 5 Monitor treatment and adverse effects

Quick info:

Patients should be seen [5]:

- weekly for the first 4 weeks of treatment; and then:
- monthly for 6 months to check for haemolysis and changes in thyroid activity

Monitor viral load by hepatitis C virus (HCV) polymerase chain reaction (PCR) to determine treatment efficacy [5].

Adverse effects and their management include:

- flu-like symptoms:
  - eg:
    - fever [2,3]
    - myalgia [2,3]
    - rigors [3]
    - arthralgia [2,3]
    - headache [2,3,8]
  - management includes:
    - paracetamol [2,3]
    - maintaining adequate fluid intake [2]
    - coordinating injections to coincide with periods of reduced activity, eg weekends [10]
- anaemia – consider erythropoietin [2,3,10]
- neutropenia – consider granulocyte colony stimulating factor (G-CSF) in patients with significant neutropenia [10]
- thrombocytopenia [7]
- depression [3,8]:
  - monitor for signs of depression:
    - before treatment
    - during treatment [3,10]
    - post-treatment [10]
  - consider antidepressants and referral to a specialist, if necessary [10]
- skin reactions [2,3] – advise on:
  - appropriate skin hygiene and hydration [10]
  - rotating injection site [10]
  - use of:
    - emollients and topical corticosteroids for non-specific rashes [3,10]
    - antihistamines for pruritis [10]
  - other skin rashes should be referred to dermatologist whilst on treatment if there is no response to simple measures [10]
- thyroid dysfunction [3,10]:
  - monitor thyroid function:
    - before commencing treatment
    - at week 12 of treatment
    - any time there is a suspicion of thyroid dysfunction
  - refer to an endocrinologist if patient develops a thyroid dysfunction
- weight loss [2,3] – consider:
  - referral to dietitian [5]
  - nutritional support [2,3]

# Hepatitis C - treatment and follow-up

Medicine > Hepatology > Hepatitis C

- dyspnoea – arrange urgent medical assessment for patients complaining of dyspnoea that is not thought to be related to anaemia [2,3,10]
- retinopathy [10]:
  - ophthalmic examination should be performed on patients with hypertension and diabetes prior to commencing treatment
  - visual disturbance during treatment should be assessed by an ophthalmologist
  - discontinue treatment in patients who complain of visual disturbance during treatment until:
    - visual disturbance resolves; or:
    - ophthalmologist excludes retinal injury
- alopecia – advise patients that hair loss is reversible on cessation of treatment [2,3,10]
- others:
  - fatigue [2,3,8,10] – common [10]
  - insomnia [2,3,10]
  - poor concentration [10]
  - nausea [8]
  - post-treatment withdrawal symptoms [10]

Conditions that may require extra monitoring or special considerations include:

- mental health problems:
  - close psychiatric monitoring of patients with known mental health problems should be arranged prior to and throughout treatment [2,3]
- ongoing alcohol or drug dependency [5]
- pregnancy and risk of pregnancy:
  - pregnant women must not be prescribed:
    - ribavirin [2,10]
    - pegylated interferon [10]
  - pregnancy should be excluded in women of childbearing age before commencing treatment with pegylated interferon and ribavirin [10]
  - two forms of contraception should be used by couples when one partner is on treatment with pegylated interferon and ribavirin [3,10] – for the duration of treatment and up to 6 months after it has ended [2,3,10]
- HIV co-infection [5]
- renal failure – careful monitoring is necessary for patients with renal failure [2,3]
- liver transplant – antiviral therapy should [5]:
  - not be given to patients in the pretransplant or peritransplant stages, except as part of a clinical trial
  - be considered in the post-transplant stage

References:

[2] Clinical Knowledge Summaries (CKS). Hepatitis C. Version 1.1. Newcastle upon Tyne: CKS; 2010.

[3] Royal College of General Practitioners (RCGP). Guidelines for the prevention, testing, treatment and management of hepatitis C in primary care. London: RCGP; 2007.

[5] Map of Medicine (MoM) Clinical Editorial team and Fellows. London: MoM; 2011.

[7] Contributors representing the Department of Health (DH) National Liver Disease Strategy (NLDS); 2011.

[8] Department of Health (DH). Hepatitis C: essential information for professionals and guidance on testing. London: DH; 2004.

[10] Scottish Intercollegiate Guidelines Network (SIGN). Management of hepatitis C. Edinburgh: SIGN; 2006.

## 6 Check hepatitis C virus (HCV) RNA after 4 weeks

Quick info:

Rapid viral response (RVR) [3]:

- defined as negative polymerase chain reaction (PCR) using a sensitive assay at week 4 of treatment
- achievement of RVR indicates sensitivity of the virus to interferon and is highly predictive of sustained viral response (SVR)

Reference:

# Hepatitis C - treatment and follow-up

Medicine > Hepatology > Hepatitis C

[3] Royal College of General Practitioners (RCGP). Guidelines for the prevention, testing, treatment and management of hepatitis C in primary care. London: RCGP; 2007.

## 8 HCV RNA negative - RVR achieved

Quick info:

Patients who are hepatitis C virus (HCV) RNA negative after 4 weeks of treatment may be considered for a reduced duration of treatment [7].

For viral genotype [7]:

- 1 or 4 – continue treatment for a total of 24 weeks
- 2 or 3 – continue treatment for a total of 16 weeks

Reference:

[7] Contributors representing the Department of Health (DH) National Liver Disease Strategy (NLDS); 2011.

## 9 Monitor treatment and adverse effects

Quick info:

Patients should be seen [5]:

- weekly for the first 4 weeks of treatment; and then:
- monthly for 6 months to check for haemolysis and changes in thyroid activity

Monitor viral load by hepatitis C virus (HCV) polymerase chain reaction (PCR) to determine treatment efficacy [5].

Adverse effects and their management include:

- flu-like symptoms:
  - eg:
    - fever [2,3]
    - myalgia [2,3]
    - rigors [3]
    - arthralgia [2,3]
    - headache [2,3,8]
  - management includes:
    - paracetamol [2,3]
    - maintaining adequate fluid intake [2]
    - coordinating injections to coincide with periods of reduced activity, eg weekends [10]
- anaemia – consider erythropoietin [2,3,10]
- neutropenia – consider granulocyte colony stimulating factor (G-CSF) in patients with significant neutropenia [10]
- thrombocytopenia [7]
- depression [3,8]:
  - monitor for signs of depression:
    - before treatment
    - during treatment [3,10]
    - post-treatment [10]
  - consider antidepressants and referral to a specialist, if necessary [10]
- skin reactions [2,3] – advise on:
  - appropriate skin hygiene and hydration [10]
  - rotating injection site [10]
  - use of:
    - emollients and topical corticosteroids for non-specific rashes [3,10]
    - antihistamines for pruritis [10]

# Hepatitis C - treatment and follow-up

Medicine > Hepatology > Hepatitis C

- other skin rashes should be referred to dermatologist whilst on treatment if there is no response to simple measures [10]
- thyroid dysfunction [3,10]:
  - monitor thyroid function:
    - before commencing treatment
    - at week 12 of treatment
    - any time there is a suspicion of thyroid dysfunction
  - refer to an endocrinologist if patient develops a thyroid dysfunction
- weight loss [2,3] – consider:
  - referral to dietitian [5]
  - nutritional support [2,3]
- dyspnoea – arrange urgent medical assessment for patients complaining of dyspnoea that is not thought to be related to anaemia [2,3,10]
- retinopathy [10]:
  - ophthalmic examination should be performed on patients with hypertension and diabetes prior to commencing treatment
  - visual disturbance during treatment should be assessed by an ophthalmologist
  - discontinue treatment in patients who complain of visual disturbance during treatment until:
    - visual disturbance resolves; or
    - ophthalmologist excludes retinal injury
- alopecia – advise patients that hair loss is reversible on cessation of treatment [2,3,10]
- others:
  - fatigue [2,3,8,10] – common [10]
  - insomnia [2,3,10]
  - poor concentration [10]
  - nausea [8]
  - post-treatment withdrawal symptoms [10]

Conditions that may require extra monitoring or special considerations include:

- mental health problems:
  - close psychiatric monitoring of patients with known mental health problems should be arranged prior to and throughout treatment [2,3]
- ongoing alcohol or drug dependency [5]
- pregnancy and risk of pregnancy:
  - pregnant women must not be prescribed:
    - ribavirin [2,10]
    - pegylated interferon [10]
  - pregnancy should be excluded in women of childbearing age before commencing treatment with pegylated interferon and ribavirin [10]
  - two forms of contraception should be used by couples when one partner is on treatment with pegylated interferon and ribavirin [3,10] – for the duration of treatment and up to 6 months after it has ended [2,3,10]
- HIV co-infection [5]
- renal failure – careful monitoring is necessary for patients with renal failure [2,3]
- liver transplant – antiviral therapy should [5]:
  - not be given to patients in the pretransplant or peritransplant stages, except as part of a clinical trial
  - be considered in the post-transplant stage

References:

[2] Clinical Knowledge Summaries (CKS). Hepatitis C. Version 1.1. Newcastle upon Tyne: CKS; 2010.

[3] Royal College of General Practitioners (RCGP). Guidelines for the prevention, testing, treatment and management of hepatitis C in primary care. London: RCGP; 2007.

[5] Map of Medicine (MoM) Clinical Editorial team and Fellows. London: MoM; 2011.

[7] Contributors representing the Department of Health (DH) National Liver Disease Strategy (NLDS); 2011.

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# Hepatitis C - treatment and follow-up

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[8] Department of Health (DH). Hepatitis C: essential information for professionals and guidance on testing. London: DH; 2004.

[10] Scottish Intercollegiate Guidelines Network (SIGN). Management of hepatitis C. Edinburgh: SIGN; 2006.

## 10 Check HCV RNA after 12 weeks

Quick info:

Check hepatitis C virus (HCV) RNA at 3 months [5]:

- if negative, then likely response rates are high
- if positive, then patient less likely to respond to therapy

Early viral response (EVR) is defined as [10]:

- either a negative HCV RNA; or :
- a two log drop in quantitative HCV RNA levels after starting antiviral treatment

References:

[5] Map of Medicine (MoM) Clinical Editorial team and Fellows. London: MoM; 2011.

[10] Scottish Intercollegiate Guidelines Network (SIGN). Management of hepatitis C. Edinburgh: SIGN; 2006.

## 14 Continue treatment

Quick info:

For patients who are hepatitis C virus (HCV) RNA negative after 12 weeks, treatment should continue for a total of [7]:

- 48 weeks in patients with viral genotype 1 or 4
- 24 weeks in patients with viral genotype 2 or 3

Reference:

[7] Contributors representing the Department of Health (DH) National Liver Disease Strategy (NLDS); 2011.

## 15 Consider extended duration therapy

Quick info:

For slow responders, consider extended duration therapy – 72 weeks for patients with viral genotype 1 or 4 [7].

Reference:

[7] Contributors representing the Department of Health (DH) National Liver Disease Strategy (NLDS); 2011.

## 16 Stop treatment, monitor, and enter into new treatment trials

Quick info:

Stop treatment and monitor [5]:

- liver function tests (LFTs) every 6-12 months in non-cirrhotic patients
- ultrasound
- alpha-fetoprotein (AFP) in cirrhotic patients

Information on available clinical trials can be found at the [5]:

- National Institute for Health Research (NIHR) website
- hepatology Special Interest Group (SIG)
- infectious diseases SIG

Reference:

[5] Map of Medicine (MoM) Clinical Editorial team and Fellows. London: MoM; 2011.

## 17 Monitor treatment and adverse effects

# Hepatitis C - treatment and follow-up

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## Quick info:

Patients should be seen [5]:

- weekly for the first 4 weeks of treatment; and then:
- monthly for 6 months to check for haemolysis and changes in thyroid activity

Monitor viral load by hepatitis C virus (HCV) polymerase chain reaction (PCR) to determine treatment efficacy [5].

Adverse effects and their management include:

- flu-like symptoms:
  - eg:
    - fever [2,3]
    - myalgia [2,3]
    - rigors [3]
    - arthralgia [2,3]
    - headache [2,3,8]
  - management includes:
    - paracetamol [2,3]
    - maintaining adequate fluid intake [2]
    - coordinating injections to coincide with periods of reduced activity, eg weekends [10]
- anaemia – consider erythropoietin [2,3,10]
- neutropenia – consider granulocyte colony stimulating factor (G-CSF) in patients with significant neutropenia [10]
- thrombocytopenia [7]
- depression [3,8]:
  - monitor for signs of depression:
    - before treatment
    - during treatment [3,10]
    - post-treatment [10]
  - consider antidepressants and referral to a specialist, if necessary [10]
- skin reactions [2,3] – advise on:
  - appropriate skin hygiene and hydration [10]
  - rotating injection site [10]
  - use of:
    - emollients and topical corticosteroids for non-specific rashes [3,10]
    - antihistamines for pruritis [10]
  - other skin rashes should be referred to dermatologist whilst on treatment if there is no response to simple measures [10]
- thyroid dysfunction [3,10]:
  - monitor thyroid function:
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    - at week 12 of treatment
    - any time there is a suspicion of thyroid dysfunction
  - refer to an endocrinologist if patient develops a thyroid dysfunction
- weight loss [2,3] – consider:
  - referral to dietitian [5]
  - nutritional support [2,3]
- dyspnoea – arrange urgent medical assessment for patients complaining of dyspnoea that is not thought to be related to anaemia [2,3,10]
- retinopathy [10]:
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  - visual disturbance during treatment should be assessed by an ophthalmologist
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# Hepatitis C - treatment and follow-up

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- visual disturbance resolves; or:
- ophthalmologist excludes retinal injury
- alopecia – advise patients that hair loss is reversible on cessation of treatment [2,3,10]
- others:
  - fatigue [2,3,8,10] – common [10]
  - insomnia [2,3,10]
  - poor concentration [10]
  - nausea [8]
  - post-treatment withdrawal symptoms [10]

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- ongoing alcohol or drug dependency [5]
- pregnancy and risk of pregnancy:
  - pregnant women must not be prescribed:
    - ribavirin [2,10]
    - pegylated interferon [10]
  - pregnancy should be excluded in women of childbearing age before commencing treatment with pegylated interferon and ribavirin [10]
  - two forms of contraception should be used by couples when one partner is on treatment with pegylated interferon and ribavirin [3,10] – for the duration of treatment and up to 6 months after it has ended [2,3,10]
- HIV co-infection [5]
- renal failure – careful monitoring is necessary for patients with renal failure [2,3]
- liver transplant – antiviral therapy should [5]:
  - not be given to patients in the pretransplant or peritransplant stages, except as part of a clinical trial
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References:

[2] Clinical Knowledge Summaries (CKS). Hepatitis C. Version 1.1. Newcastle upon Tyne: CKS; 2010.

[3] Royal College of General Practitioners (RCGP). Guidelines for the prevention, testing, treatment and management of hepatitis C in primary care. London: RCGP; 2007.

[5] Map of Medicine (MoM) Clinical Editorial team and Fellows. London: MoM; 2011.

[7] Contributors representing the Department of Health (DH) National Liver Disease Strategy (NLDS); 2011.

[8] Department of Health (DH). Hepatitis C: essential information for professionals and guidance on testing. London: DH; 2004.

[10] Scottish Intercollegiate Guidelines Network (SIGN). Management of hepatitis C. Edinburgh: SIGN; 2006.

## 18 Monitor treatment and adverse effects

Quick info:

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- flu-like symptoms:
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    - rigors [3]

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# Hepatitis C - treatment and follow-up

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- arthralgia [2,3]
- headache [2,3,8]
- management includes:
  - paracetamol [2,3]
  - maintaining adequate fluid intake [2]
  - coordinating injections to coincide with periods of reduced activity, eg weekends [10]
- anaemia – consider erythropoietin [2,3,10]
- neutropenia – consider granulocyte colony stimulating factor (G-CSF) in patients with significant neutropenia [10]
- thrombocytopaenia [7]
- depression [3,8]:
  - monitor for signs of depression:
    - before treatment
    - during treatment [3,10]
    - post-treatment [10]
  - consider antidepressants and referral to a specialist, if necessary [10]
- skin reactions [2,3] – advise on:
  - appropriate skin hygiene and hydration [10]
  - rotating injection site [10]
  - use of:
    - emollients and topical corticosteroids for non-specific rashes [3,10]
    - antihistamines for pruritis [10]
  - other skin rashes should be referred to dermatologist whilst on treatment if there is no response to simple measures [10]
- thyroid dysfunction [3,10]:
  - monitor thyroid function:
    - before commencing treatment
    - at week 12 of treatment
    - any time there is a suspicion of thyroid dysfunction
  - refer to an endocrinologist if patient develops a thyroid dysfunction
- weight loss [2,3] – consider:
  - referral to dietitian [5]
  - nutritional support [2,3]
- dyspnoea – arrange urgent medical assessment for patients complaining of dyspnoea that is not thought to be related to anaemia [2,3,10]
- retinopathy [10]:
  - ophthalmic examination should be performed on patients with hypertension and diabetes prior to commencing treatment
  - visual disturbance during treatment should be assessed by an ophthalmologist
  - discontinue treatment in patients who complain of visual disturbance during treatment until:
    - visual disturbance resolves; or
    - ophthalmologist excludes retinal injury
- alopecia – advise patients that hair loss is reversible on cessation of treatment [2,3,10]
- others:
  - fatigue [2,3,8,10] – common [10]
  - insomnia [2,3,10]
  - poor concentration [10]
  - nausea [8]
  - post-treatment withdrawal symptoms [10]

Conditions that may require extra monitoring or special considerations include:

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- mental health problems:
  - close psychiatric monitoring of patients with known mental health problems should be arranged prior to and throughout treatment [2,3]
- ongoing alcohol or drug dependency [5]
- pregnancy and risk of pregnancy:
  - pregnant women must not be prescribed:
    - ribavirin [2,10]
    - pegylated interferon [10]
  - pregnancy should be excluded in women of childbearing age before commencing treatment with pegylated interferon and ribavirin [10]
  - two forms of contraception should be used by couples when one partner is on treatment with pegylated interferon and ribavirin [3,10] – for the duration of treatment and up to 6 months after it has ended [2,3,10]
- HIV co-infection [5]
- renal failure – careful monitoring is necessary for patients with renal failure [2,3]
- liver transplant – antiviral therapy should [5]:
  - not be given to patients in the pretransplant or peritransplant stages, except as part of a clinical trial
  - be considered in the post-transplant stage

References:

[2] Clinical Knowledge Summaries (CKS). Hepatitis C. Version 1.1. Newcastle upon Tyne: CKS; 2010.

[3] Royal College of General Practitioners (RCGP). Guidelines for the prevention, testing, treatment and management of hepatitis C in primary care. London: RCGP; 2007.

[5] Map of Medicine (MoM) Clinical Editorial team and Fellows. London: MoM; 2011.

[7] Contributors representing the Department of Health (DH) National Liver Disease Strategy (NLDS); 2011.

[8] Department of Health (DH). Hepatitis C: essential information for professionals and guidance on testing. London: DH; 2004.

[10] Scottish Intercollegiate Guidelines Network (SIGN). Management of hepatitis C. Edinburgh: SIGN; 2006.

## 19 Follow-up

Quick info:

Follow-up is directed at:

- monitoring the response to therapy [3]
- detecting any complications of hepatitis C virus (HCV) infection early, eg [5]:
  - malnutrition
  - liver decompensation
  - chronic liver disease
  - cirrhosis
  - chronic kidney disease – see '[Chronic kidney disease](#)' care map
- detecting relapse early [5]
- setting up a surveillance programme for hepatocellular cancer [10]:
  - patients with HCV infection and cirrhosis should receive surveillance for hepatocellular cancer with 6-monthly ultrasound and serum alpha fetoprotein [10]

For patients with established liver failure, consider the indications for liver transplant and refer when appropriate [5].

References:

[3] Royal College of General Practitioners (RCGP). Guidelines for the prevention, testing, treatment and management of hepatitis C in primary care. London: RCGP; 2007.

[5] Map of Medicine (MoM) Clinical Editorial team and Fellows. London: MoM; 2011.

[10] Scottish Intercollegiate Guidelines Network (SIGN). Management of hepatitis C. Edinburgh: SIGN; 2006.

## 20 Check HCV RNA 3-6 months after cessation

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# Hepatitis C - treatment and follow-up

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## Quick info:

Check hepatitis C (HCV) RNA at 3-6 months:

- most relapses occur within 12 weeks, so testing after 3 months is appropriate [7]
- to ensure sustained viral response, RNA levels should be checked at 6 months [7]
- if response to treatment is sustained, the patient can be discharged [5]
- if relapse has occurred, consider [3]:
  - retreatment; or:
  - entry into clinical trial of new treatment

## References:

[3] Royal College of General Practitioners (RCGP). Guidelines for the prevention, testing, treatment and management of hepatitis C in primary care. London: RCGP; 2007.

[5] Map of Medicine (MoM) Clinical Editorial team and Fellows. London: MoM; 2011.

[7] Contributors representing the Department of Health (DH) National Liver Disease Strategy (NLDS); 2011.

## 22 Indications for liver transplantation

### Quick info:

British guidelines recommend [11]:

- early referral of potential candidates to transplant programmes – this facilitates the timing and outcome of transplantation
- referral and transplantation should preferably occur before the development of:
  - malnutrition; or:
  - hepatorenal failure
- transplantation should not be discouraged in patients age 60 years and older

Specific patients considered include patients with:

- end-stage hepatitis C virus cirrhosis [11]
- hepatitis C virus (HCV) and concurrent operable hepatocellular carcinoma [10]
- HCV-associated chronic liver failure [10]

Other considerations:

- genotype and viral load should not influence transplant assessment [11]
- uncontrolled drug dependency is a relative contraindication to transplantation [11]
- alcohol misuse should be actively excluded in cases of hepatitis C [11]
- haemophilia is not a contraindication to transplantation [11]
- antiviral therapy [10]:
  - patients in whom transplant is planned should not receive antiviral therapy in the pretransplant or peritransplant stages, except as part of clinical trials
  - consider post-liver transplant to achieve HCV clearance in cases of recurrence of HCV related liver disease

Potential transplant candidates should be assessed on the basis of [11]:

- their profile of complications
- the calculated prognosis after treatment
- quality of life (QoL)

Absolute contraindications to liver transplantation are [11]:

- AIDS
- extrahepatic malignancy – the following are exceptions in some centres:
  - haemangioendothelioma
  - neuroendocrine malignancy
- cholangiocarcinoma – a relative contraindication in some centres in conjunction with experimental approaches
- advanced cardiopulmonary disease

Relative contraindications to liver transplantation are [11]:

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- HIV-positive status
- age 70 years and older
- significant sepsis outside the extrahepatic biliary tree
- hepatitis B virus (HBV) DNA positive – most patients can be treated with antiviral therapy
- active alcohol/substance misuse
- severe psychiatric disorder
- portal venous system thrombosis – requires assessment at a transplant centre
- pulmonary hypertension – requires assessment at a transplant centre

References:

[10] Scottish Intercollegiate Guidelines Network (SIGN). Management of hepatitis C. Edinburgh: SIGN; 2006.

[11] British Society of Gastroenterology (BSG). Indications for referral and assessment in adult liver transplantation: a clinical guideline. London: BSG; 2000.

## 23 Sustained response

Quick info:

If there is a sustained response to treatment, patient can be discharged back to primary care, with annual repeat hepatitis C virus (HCV) RNA testing [5].

For those with cirrhosis, 6-monthly ultrasound is recommended [5].

Reference:

[5] Map of Medicine (MoM) Clinical Editorial team and Fellows. London: MoM; 2011.

## 24 Relapse - consider retreatment or enter into clinical trial of new treatment

Quick info:

Consider retreatment for 12 months with specificity determining residue grafting [5]:

- relapse trials show that retreatment for 12 months has a 20-25% cure rate following initial 6 months therapy

Information on available clinical trials can be found at the [5]:

- National Institute for Health Research (NIHR) website
- hepatology Special Interest Group (SIG)
- infectious diseases SIG

Reference:

[5] Map of Medicine (MoM) Clinical Editorial team and Fellows. London: MoM; 2011.

## 28 Stop treatment, monitor, and enter into new treatment trials

Quick info:

Stop treatment and monitor [5]:

- liver function tests every 6-12 months in non-cirrhotic patients
- ultrasound
- alpha-fetoprotein (AFP) in cirrhotic patients

Information on available clinical trials can be found at the [5]:

- National Institute for Health Research (NIHR) website
- hepatology Special Interest Group (SIG)
- infectious diseases SIG

Reference:

[5] Map of Medicine (MoM) Clinical Editorial team and Fellows. London: MoM; 2011.

# Hepatitis C - treatment and follow-up

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## 29 Check HCV RNA 3-6 months after cessation

### Quick info:

Check hepatitis C (HCV) RNA at 3-6 months:

- most relapses occur within 12 weeks, so testing after 3 months is appropriate [7]
- to ensure sustained viral response, RNA levels should be checked at 6 months [7]
- if response to treatment is sustained, the patient can be discharged [5]
- if relapse has occurred, consider [3]:
  - retreatment; or:
  - entry into clinical trial of new treatment

### References:

[3] Royal College of General Practitioners (RCGP). Guidelines for the prevention, testing, treatment and management of hepatitis C in primary care. London: RCGP; 2007.

[5] Map of Medicine (MoM) Clinical Editorial team and Fellows. London: MoM; 2011.

[7] Contributors representing the Department of Health (DH) National Liver Disease Strategy (NLDS); 2011.

## 30 Follow-up

### Quick info:

Follow-up is directed at:

- monitoring the response to therapy [3]
- detecting any complications of hepatitis C virus (HCV) infection early, eg [5]:
  - malnutrition
  - liver decompensation
  - chronic liver disease
  - cirrhosis
  - chronic kidney disease – see '[Chronic kidney disease](#)' care map
- detecting relapse early [5]
- setting up a surveillance programme for hepatocellular cancer [10]:
  - patients with HCV infection and cirrhosis should receive surveillance for hepatocellular cancer with 6-monthly ultrasound and serum alpha fetoprotein

For patients with established liver failure, consider the indications for liver transplant and refer when appropriate [5].

### References:

[3] Royal College of General Practitioners (RCGP). Guidelines for the prevention, testing, treatment and management of hepatitis C in primary care. London: RCGP; 2007.

[5] Map of Medicine (MoM) Clinical Editorial team and Fellows. London: MoM; 2011.

[10] Scottish Intercollegiate Guidelines Network (SIGN). Management of hepatitis C. Edinburgh: SIGN; 2006.

## 31 Follow-up

### Quick info:

Follow-up is directed at:

- monitoring the response to therapy [3]
- detecting any complications of hepatitis C virus (HCV) infection early, eg [5]:
  - malnutrition
  - liver decompensation
  - chronic liver disease
  - cirrhosis
  - chronic kidney disease – see '[Chronic kidney disease](#)' care map

# Hepatitis C - treatment and follow-up

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- detecting relapse early [5]
- setting up a surveillance programme for hepatocellular cancer [10]:
  - patients with HCV infection and cirrhosis should receive surveillance for hepatocellular cancer with 6-monthly ultrasound and serum alpha fetoprotein

For patients with established liver failure, consider the indications for liver transplant and refer when appropriate [5].

References:

[3] Royal College of General Practitioners (RCGP). Guidelines for the prevention, testing, treatment and management of hepatitis C in primary care. London: RCGP; 2007.

[5] Map of Medicine (MoM) Clinical Editorial team and Fellows. London: MoM; 2011.

[10] Scottish Intercollegiate Guidelines Network (SIGN). Management of hepatitis C. Edinburgh: SIGN; 2006.

## 32 Indications for liver transplantation

Quick info:

British guidelines recommend [11]:

- early referral of potential candidates to transplant programmes – this facilitates the timing and outcome of transplantation
- referral and transplantation should preferably occur before the development of:
  - malnutrition; or
  - hepatorenal failure
- transplantation should not be discouraged in patients age 60 years and older

Specific patients considered include patients with:

- end-stage hepatitis C virus cirrhosis [11]
- hepatitis C virus (HCV) and concurrent operable hepatocellular carcinoma [10]
- HCV-associated chronic liver failure [10]

Other considerations:

- genotype and viral load should not influence transplant assessment [11]
- uncontrolled drug dependency is a relative contraindication to transplantation [11]
- alcohol misuse should be actively excluded in cases of hepatitis C [11]
- haemophilia is not a contraindication to transplantation [11]
- antiviral therapy [10]:
  - patients in whom transplant is planned should not receive antiviral therapy in the pretransplant or peritransplant stages, except as part of clinical trials
  - consider post-liver transplant to achieve HCV clearance in cases of recurrence of HCV related liver disease

Potential transplant candidates should be assessed on the basis of [11]:

- their profile of complications
- the calculated prognosis after treatment
- quality of life (QoL)

Absolute contraindications to liver transplantation are [11]:

- AIDS
- extrahepatic malignancy – the following are exceptions in some centres:
  - haemangioendothelioma
  - neuroendocrine malignancy
- cholangiocarcinoma – a relative contraindication in some centres in conjunction with experimental approaches
- advanced cardiopulmonary disease

Relative contraindications to liver transplantation are [11]:

- HIV-positive status
- age 70 years and older
- significant sepsis outside the extrahepatic biliary tree

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- hepatitis B virus (HBV) DNA positive – most patients can be treated with antiviral therapy
- active alcohol/substance misuse
- severe psychiatric disorder
- portal venous system thrombosis – requires assessment at a transplant centre
- pulmonary hypertension – requires assessment at a transplant centre

References:

[10] Scottish Intercollegiate Guidelines Network (SIGN). Management of hepatitis C. Edinburgh: SIGN; 2006.

[11] British Society of Gastroenterology (BSG). Indications for referral and assessment in adult liver transplantation: a clinical guideline. London: BSG; 2000.

## 33 Sustained response

Quick info:

If there is a sustained response to treatment, patient can be discharged back to primary care, with annual repeat hepatitis C virus (HCV) RNA testing [5].

For those with cirrhosis, 6-monthly ultrasound is recommended [5].

Reference:

[5] Map of Medicine (MoM) Clinical Editorial team and Fellows. London: MoM; 2011.

## 34 Relapse - consider retreatment or enter into clinical trial of new treatment

Quick info:

Consider retreatment for 12 months with specificity determining residue grafting [5]:

- relapser trials show that retreating for 12 months has a 20-25% cure rate following initial 6 months therapy

Information on available clinical trials can be found at the [5]:

- National Institute for Health Research (NIHR) website
- hepatology Special Interest Group (SIG)
- infectious diseases SIG

Reference:

[5] Map of Medicine (MoM) Clinical Editorial team and Fellows. London: MoM; 2011.

## 35 Indications for liver transplantation

Quick info:

British guidelines recommend [11]:

- early referral of potential candidates to transplant programmes – this facilitates the timing and outcome of transplantation
- referral and transplantation should preferably occur before the development of:
  - malnutrition; or
  - hepatorenal failure
- transplantation should not be discouraged in patients age 60 years and older

Specific patients considered include patients with:

- end-stage hepatitis C virus cirrhosis [11]
- hepatitis C virus (HCV) and concurrent operable hepatocellular carcinoma [10]
- HCV-associated chronic liver failure [10]

Other considerations:

- genotype and viral load should not influence transplant assessment [11]
- uncontrolled drug dependency is a relative contraindication to transplantation [11]
- alcohol misuse should be actively excluded in cases of hepatitis C [11]
- haemophilia is not a contraindication to transplantation [11]

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# Hepatitis C - treatment and follow-up

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- antiviral therapy [10]:
  - patients in whom transplant is planned should not receive antiviral therapy in the pretransplant or peritransplant stages, except as part of clinical trials
  - consider post-liver transplant to achieve HCV clearance in cases of recurrence of HCV related liver disease

Potential transplant candidates should be assessed on the basis of [11]:

- their profile of complications
- the calculated prognosis after treatment
- quality of life (QoL)

Absolute contraindications to liver transplantation are [11]:

- AIDS
- extrahepatic malignancy – the following are exceptions in some centres:
  - haemangioendothelioma
  - neuroendocrine malignancy
- cholangiocarcinoma – a relative contraindication in some centres in conjunction with experimental approaches
- advanced cardiopulmonary disease

Relative contraindications to liver transplantation are [11]:

- HIV-positive status
- age 70 years and older
- significant sepsis outside the extrahepatic biliary tree
- hepatitis B virus (HBV) DNA positive – most patients can be treated with antiviral therapy
- active alcohol/substance misuse
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- portal venous system thrombosis – requires assessment at a transplant centre
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[11] British Society of Gastroenterology (BSG). Indications for referral and assessment in adult liver transplantation: a clinical guideline. London: BSG; 2000.

## 37 Follow-up

Quick info:

Follow-up is directed at:

- monitoring the response to therapy [3]
- detecting any complications of hepatitis C virus (HCV) infection early, eg [5]:
  - malnutrition
  - liver decompensation
  - chronic liver disease
  - cirrhosis
  - chronic kidney disease – see '[Chronic kidney disease](#)' care map
- detecting relapse early [5]
- setting up a surveillance programme for hepatocellular cancer [10]:
  - patients with HCV infection and cirrhosis should receive surveillance for hepatocellular cancer with 6-monthly ultrasound and serum alpha fetoprotein

For patients with established liver failure, consider the indications for liver transplant and refer when appropriate [5].

References:

[3] Royal College of General Practitioners (RCGP). Guidelines for the prevention, testing, treatment and management of hepatitis C in primary care. London: RCGP; 2007.

[5] Map of Medicine (MoM) Clinical Editorial team and Fellows. London: MoM; 2011.

# Hepatitis C - treatment and follow-up

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[10] Scottish Intercollegiate Guidelines Network (SIGN). Management of hepatitis C. Edinburgh: SIGN; 2006.

## 38 Indications for liver transplantation

Quick info:

British guidelines recommend [11]:

- early referral of potential candidates to transplant programmes – this facilitates the timing and outcome of transplantation
- referral and transplantation should preferably occur before the development of:
  - malnutrition; or
  - hepatorenal failure
- transplantation should not be discouraged in patients age 60 years and older

Specific patients considered include patients with:

- end-stage hepatitis C virus cirrhosis [11]
- hepatitis C virus (HCV) and concurrent operable hepatocellular carcinoma [10]
- HCV-associated chronic liver failure [10]

Other considerations:

- genotype and viral load should not influence transplant assessment [11]
- uncontrolled drug dependency is a relative contraindication to transplantation [11]
- alcohol misuse should be actively excluded in cases of hepatitis C [11]
- haemophilia is not a contraindication to transplantation [11]
- antiviral therapy [10]:
  - patients in whom transplant is planned should not receive antiviral therapy in the pretransplant or peritransplant stages, except as part of clinical trials
  - consider post-liver transplant to achieve HCV clearance in cases of recurrence of HCV related liver disease

Potential transplant candidates should be assessed on the basis of [11]:

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  - neuroendocrine malignancy
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- advanced cardiopulmonary disease

Relative contraindications to liver transplantation are [11]:

- HIV-positive status
- age 70 years and older
- significant sepsis outside the extrahepatic biliary tree
- hepatitis B virus (HBV) DNA positive – most patients can be treated with antiviral therapy
- active alcohol/substance misuse
- severe psychiatric disorder
- portal venous system thrombosis – requires assessment at a transplant centre
- pulmonary hypertension – requires assessment at a transplant centre

References:

[10] Scottish Intercollegiate Guidelines Network (SIGN). Management of hepatitis C. Edinburgh: SIGN; 2006.

[11] British Society of Gastroenterology (BSG). Indications for referral and assessment in adult liver transplantation: a clinical guideline. London: BSG; 2000.

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# Hepatitis C

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## Provenance certificate

[Overview](#) | [Accreditations](#) | [Editorial methodology](#) | [References](#) | [Contributors](#) | [Disclaimers](#)

### Overview

This document describes the provenance of Map of Medicine's Hepatitis C care map.

This Map of Medicine care map is scheduled to be updated every 37 months, the process beginning 30 months after the last scheduled update. Between scheduled updates, interim updates are possible should important information come to light.

Published: 29 April 2011  
Interim update: None  
Next scheduled update: 31 May 2014

For information on changes in the last scheduled update and any interim updates, see the information point entitled 'Updates to this care map' on each page of the care map.

To cite this care map, use the following format:

Map of Medicine (MoM). Hepatitis C. International View. London: MoM; 2011 (Issue 2).

### Accreditations

There are two levels of accreditation available to a care map:

- Accreditation of the clinical content by a relevant professional group (optional)
- Accreditation of the editorial methodology used

The editorial methodology used to create this care map is accredited by:



The Chief Knowledge Officer of the NHS

[Disclaimer](#)

### Editorial methodology

Map of Medicine uses critically-appraised secondary literature when constructing its care maps. The initial search for secondary literature is within Medline and EMBASE and of websites of known producers of guidelines. The search goes back ten years. The drafted care map is then checked by individuals with front-line clinical experience (see Contributors section of this document). Such individuals can nominate further references to be added to a care map; these are clearly marked (E) to indicate they were recommended by experienced colleagues. The resulting care map is peer reviewed before publication.

After publication, Map of Medicine runs searches of secondary literature sources every two months, which include critical appraisal of the results to determine whether the care map requires an interim update in response to new, important information. Information not deemed to require an interim update is considered as part of the scheduled update. The same process is applied to feedback received from users.

Published 29 April 2011; Valid until: 31 May 2014

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## References

This care map has been developed according to the Map of Medicine editorial methodology (<http://mapofmedicine.com/whatisthemap/editorialmethodology>). The content of this care map is based on high-quality guidelines [1-4,6,8,9-11]. Practice-based knowledge has been added by Map of Medicine (MoM) Clinical Editorial team and Fellows [5] and contributors with front-line clinical experience [7]:

1. British Association of Sexual Health and HIV (BASHH). United Kingdom National Guideline on the management of the viral hepatitis A, B and C 2008. London: BASHH; 2008. Available from: <http://www.bashh.orgdocuments/1927> [G]
2. Clinical Knowledge Summaries (CKS). Hepatitis C. Version 1.1. Newcastle upon Tyne: CKS; 2010. Available from: [http://www.cks.nhs.uk/hepatitis\\_c#408373001](http://www.cks.nhs.uk/hepatitis_c#408373001) [G]
3. Royal College of General Practitioners (RCGP). Guidelines for the prevention, testing, treatment and management of hepatitis C in primary care. London: RCPG; 2007. Available from: <http://www.smmgp.org.uk/download/guidance/guidance003.pdf> [G]
4. National Institute for Health and Clinical Excellence (NICE). Peginterferon alfa and and ribavirin for the treatment of chronic hepatitis C. London: NICE; 2010. Available from: <http://www.nice.org.uk/nicemedia/live/13180/50856/50856.pdf> [G]
5. Map of Medicine (MoM) Clinical Editorial team and Fellows. London: MoM; 2011. [E]
6. Health Protection Agency (HPA). Hepatitis C in the UK 2009 report. London: HPA; 2009. Available from: [http://www.hpa.org.uk/web/HPAwebFile/HPAweb\\_C/1259152221464](http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1259152221464) [G]
7. Contributors representing the Department of Health (DH) National Liver Disease Strategy (NLDS); 2011. [E]
8. Department of Health (DH). Hepatitis C: essential information for professionals and guidance on testing. London: DH; 2004. Available from: [http://www.dh.gov.uk/prod\\_consum\\_dh/groups/dh\\_digitalassets/@dh/@en/documents/digitalasset/dh\\_4097956.pdf](http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4097956.pdf) [G]
9. Devlin J, O'Grady J. Hepatitis C: quick reference guide for primary care. London: DH; 2009. Available from: [http://www.dh.gov.uk/prod\\_consum\\_dh/groups/dh\\_digitalassets/documents/digitalasset/dh\\_093847.pdf](http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_093847.pdf) [G]
10. Scottish Intercollegiate Guidelines Network (SIGN). Management of hepatitis C. Edinburgh: SIGN; 2006. Available from: <http://www.sign.ac.uk/pdf/sign92.pdf> [G]
11. British Society of Gastroenterology (BSG). Indications for referral and assessment in adult liver transplantation: a clinical guideline. London: BSG; 2000. Available from: [http://www.bsg.org.uk/pdf\\_word\\_docs/adult\\_liver.pdf](http://www.bsg.org.uk/pdf_word_docs/adult_liver.pdf) [G]

The classification employed by Map of Medicine is as follows:

- [G] guideline
- [M] meta-analysis
- [S] systematic review
- [A] randomised controlled trial
- [B] nonrandomised prospective study
- [C] retrospective study
- [Q] cost- or decision-analysis
- [P] performance measure or policy document
- [E] practice-based information (expert opinion)

## Contributors

Map of Medicine's care maps are created by individuals with knowledge of evidence-based medicine together with individuals with practice-based knowledge. The former are members of Map of Medicine's editorial team, the latter are named as contributors.

Selected members of Map of Medicine Clinical Editorial team and Fellows.

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# Hepatitis C

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## Conflicts of interest:

Conflict of interests can be found on the Map of Medicine corporate website ([www.mapofmedicine.com](http://www.mapofmedicine.com))

Mr Charles Gore: Chief Executive, The Hepatitis C Trust, London, UK.

## Conflicts of interest:

In participating in the development of the MoM HCV care map I have no conflict of interest since I am a HCV patient running a HCV charity entirely for the benefit of HCV patients. However, there might be some perceived conflict of interest in that The Hepatitis C Trust has received some unrestricted funding from Roche, MSD and Janssen, all makers of HCV drugs and I have been supported by them with small travel grants.

Dr Stephen David Ryder: Consultant Hepatologist, Nottingham University Hospitals NHS Trust, Nottingham, UK.

## Conflicts of interest:

I have no conflicts of interest to declare

## Disclaimers

The Chief Knowledge Officer of the NHS

It is not the function of the Chief Knowledge Officer of the NHS to substitute for the role of the clinician, but to support the clinician in enabling access to know-how and knowledge. Users of the Map of Medicine are therefore urged to use their own professional judgement to ensure that the patient receives the best possible care. Whilst reasonable efforts have been made to ensure the accuracy of the information on this online clinical knowledge resource, we cannot guarantee its correctness or completeness. The information on the Map of Medicine is subject to change and we cannot guarantee that it is up-to-date.