Clinical guidance for treating hepatitis C virus infection: a summary

Six key questions before commencing treatment for hepatitis C virus (HCV) infection

- Is cirrhosis present?
- What is the HCV genotype?
- Is the patient treatment-naive?
- Is HBV–HCV or HIV–HCV confection present?
- Are there potential drug–drug interactions?
- What is the renal function (eGFR)?

Checklist for pre-treatment assessment for people with hepatitis C virus (HCV) infection

- **HCV virology:**
  - Anti-HCV (serology)
  - HCV PCR
  - HCV genotype, quantitative HCV RNA level
- **HCV treatment history — previous regimen and response**
- **Potential for non-adherence?**
- **Alcohol intake history**
- **Check for drug–drug interactions**
- **Pregnancy discussion**
- **Weight and body mass index**
- **Signs of chronic liver disease**
- **FBE**
- **LFTs and INR**
- **U&Es and eGFR**
- **HBV (HBsAg, anti-HBc, anti-HBs), HIV, HAV serology**
- **Cirrhosis assessment**
  - e.g. FibroScan
  - e.g. APRI
- **Electrocardiogram if ribavirin therapy planned and patient is aged > 50 years OR has cardiac risk factors**

**Support for people living with hepatitis C**

People living with hepatitis C can receive information, support and referral from community services, including:

- Hepatitis Australia: http://www.hepatitisaustralia.com
- Hepatitis Information Line: 1800 437 222
- Australian Injecting & Illicit Drug Users League: http://www.aivl.org.au

**On-treatment and post-treatment monitoring for virological response**

**Routine monitoring for an 8–12-week treatment regimen:**

<table>
<thead>
<tr>
<th>Week 0</th>
<th>Pre-treatment blood tests, including LFTs, HCV PCR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 12 post-treatment (SVR)</td>
<td>LFTs, HCV PCR (qualitative)</td>
</tr>
</tbody>
</table>

- More intensive monitoring may be required in certain populations (see Australian recommendations for the management of hepatitis C virus infection: a consensus statement (September 2018), http://www.gesa.org.au.au).
- People treated with elbasvir plus grazoprevir should have LFTs at Week 8 to screen for hepatotoxicity.

**SVR = sustained virological response at least 12 weeks after treatment (cure). LFT = liver function test. INR = international normalised ratio. HCV = hepatitis C virus. PCR = polymerase chain reaction.**

**Ongoing monitoring of people after successful hepatitis C treatment outcome (SVR)**

- **SVR, no cirrhosis and normal LFT results (males, ALT < 30 U/L; females, ALT < 19 U/L):**
  - People who are cured do not require clinical follow-up for hepatitis C.

- **SVR and abnormal LFT results (males, ALT ≥ 30 U/L; females, ALT ≥ 19 U/L):**
  - Patients with persistently abnormal LFT results require evaluation for other liver diseases and should be referred for gastroenterology review. Investigations to consider include: fasting glucose level, fasting lipid levels, iron studies, ANA, ASMA, anti-LKM antibodies, total IgG and IgM, AMA, coeliac serology, copper level, caeruloplasmin level and α-1-antitrypsin level.

**SVR and cirrhosis:**

- Patients with cirrhosis require long-term monitoring and should be enrolled in screening programs for:
  - hepatocellular carcinoma
  - oesophageal varices
  - osteoporosis

**People who are cured do not require clinical follow-up for hepatitis C:**

- Specialist referral recommended

**FBE = full blood examination. LFT = liver function test. INR = international normalised ratio. U&Es = urea and electrolyte. eGFR = estimated glomerular filtration rate. HBV = hepatitis B virus. HAV = hepatitis A virus. HBsAg = hepatitis B surface antigen. anti-HBc = hepatitis B core antibody. anti-HBs = hepatitis B surface antibody. APRI = aspartate aminotransferase to platelet ratio index. MELD = Model for End-Stage Liver Disease. HCC = hepatocellular carcinoma. SVR = sustained virological response at least 12 weeks after treatment (cure). LFT = liver function test. ALT = alanine aminotransferase. ANA = anti-nuclear antibodies. ASMA = anti-smooth muscle antibodies. LKM = liver-kidney microsome. AMA = anti-mitochondrial antibody.**
### Recommended treatment protocols for treatment-naive people with hepatitis C virus (HCV) infection and compensated liver disease, including people with HCV–HIV coinfection

<table>
<thead>
<tr>
<th>Regimen</th>
<th>HCV genotype</th>
<th>No cirrhosis</th>
<th>Cirrhosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sofosbuvir 400 mg, orally, daily + Velpatasvir 100 mg, orally, daily</td>
<td>1, 2, 3, 4, 5, 6</td>
<td>12 weeks</td>
<td>12 weeks*</td>
</tr>
<tr>
<td>Glecaprevir 300 mg, orally, daily + Pibrentasvir 120 mg, orally, daily</td>
<td>1, 2, 3, 4, 5, 6</td>
<td>8 weeks</td>
<td>12 weeks</td>
</tr>
<tr>
<td>Elbasvir, 50 mg, orally, daily + Grazoprevir, 100 mg, orally, daily</td>
<td>1, 4</td>
<td>12 weeks</td>
<td>12 weeks</td>
</tr>
<tr>
<td>Sofosbuvir 400 mg, orally, daily + Ledipasvir 90 mg, orally, daily</td>
<td>1</td>
<td>8 or 12 weeks†</td>
<td>12 weeks</td>
</tr>
</tbody>
</table>

HIV = human immunodeficiency virus.

* Addition of ribavirin may be considered for patients with genotype 3 HCV and compensated cirrhosis. Ribavirin dosing is weight-based; recommended dose is 1000 mg for people weighing < 75 kg and 1200 mg for people weighing ≥ 75 kg.

† 8 weeks may be considered if HCV RNA level is < 6 × 10⁶ IU/mL in people with no cirrhosis who are treatment-naive.

**Notes:**
- Sofosbuvir is not recommended for patients with an estimated glomerular filtration rate < 30 mL/min/1.73 m².
- Dose reduction or dose interruption of direct-acting antiviral therapy is not recommended.
- Dose reduction of ribavirin for the management of symptomatic anaemia according to the product information is appropriate and will not reduce the likelihood of SVR.
- The recommended treatment regimens differ in the setting of decompensated liver disease (Child–Pugh score ≥ B7) (see Australian recommendations for the management of hepatitis C virus infection: a consensus statement (September 2018), http://www.gesa.org.au).