Ascites Related to Chronic Liver Disease
Clinical Guideline

V.4.0
October 2018
1. **Aim/Purpose of this Guideline**

1.1 To provide guidelines for medical staff when caring for patients with ascites secondary to chronic liver disease.

1.2 Please refer to “Paracentesis Clinical Guideline” when considering paracentesis.

1.3 **Data Protection Act 2018 (General Data Protection Regulation – GDPR) Legislation**

The Trust has a duty under the DPA18 to ensure that there is a valid legal basis to process personal and sensitive data. The legal basis for processing must be identified and documented before the processing begins. In many cases we may need consent; this must be explicit, informed and documented. We can’t rely on Opt out, it must be Opt in.

The DPA18 covers how the Trust obtains, hold, record, use and store all personal and special category (e.g. Health) information in a secure and confidential manner. This Act covers all data and information whether held electronically or on paper and extends to databases, videos and other automated media about living individuals including but not limited to Human Resources and payroll records, medical records, other manual files, microfilm/fiche, pathology results, images and other sensitive data.

DPA18 is applicable to all staff; this includes those working as contractors and providers of services.

For more information about your obligations under the DPA18 please see the ‘information use framework policy’, or contact the Information Governance Team rch-tr.infogov@nhs.net

2 **The Guidance**

2.1 **Responsibility**

Medical staff caring for adult in-patient, or Accident and Emergency Department patients waiting for transfer for in-patient care in the Royal Cornwall Hospital Trust.

2.2 **General Points**

2.2.1 Patients are often known to have chronic liver failure and may have signs such as jaundice, encephalopathy or variceal haemorrhage.

2.2.2 Between 50-80% of patients presenting with decompensating chronic liver disease for the first time (index presentation) are unknown to have chronic liver disease to their primary care physician.

2.2.3 **DIAGNOSTIC PARACENTESIS is mandatory for all patients presenting acutely with ascites and chronic liver disease and is safe to perform without coagulation studies or platelet count.**

2.3 Diagnosis of ascites
This can be made on clinical criteria or radiological criteria such as ultrasound or CT.

2.4 Cause of ascites
In over 90% of cases the cause for ascites is chronic liver disease. Alternative causes such as malignancy, acute pancreatitis, cardiac failure, or nephrotic syndrome should be considered.

2.5 Diagnosis of aetiology of ascites

2.5.1 This can be made by performing a diagnostic ascitic tap. This is performed using a sterile technique with local anaesthesia and a 10 ml syringe with a green needle.

2.5.2 The ascitic fluid should be sent (if an index presentation) for:
- Ascitic white cell count sent (in EDTA bottle) to Haematology
- Ascitic albumin count sent (universal container) to Biochemistry
- Culture ascitic fluid sent (in universal container) to Microbiology
- Cytology sent (universal container) to Histopathology

2.5.3 If the patient is known to have chronic liver disease and ascites, then only ascitic white cell count and culture are required.

2.6 Indications for paracentesis:
- Evaluation of new onset ascites
- Testing of ascitic fluid in a patient with pre-existing ascites who is admitted to the hospital
- Management of tense ascites, or ascites that is diuretic-resistant
- Evaluation of a patient with ascites who has signs of clinical deterioration:
  - Fever
  - abdominal pain/tenderness
  - hepatic encephalopathy
  - deterioration in renal function

2.7 Contra-indications to paracentesis:
- Disseminated intravascular coagulation
- Primary thrombolysis or current use of anticoagulants
- Massive ileus with bowel distension
- Surgical scars at the proposed paracentesis site

2.8 Spontaneous bacterial peritonitis

2.8.1 This is diagnosed by a total fluid white cell count is > 500 mm3/l. If a patient has a fluid white count > 500 mm3/l then they should be treated with antibiotics as per Trust protocol.

2.8.2 If the fluid white cell count is >1000 mm$^3$/l, or multiple organisms are isolated from the fluid, then secondary bacterial peritonitis due to perforation should be suspected Positive culture of ascites with ascitic white count < 500 mm3/l should be treated if clinical sepsis suspected.
2.8.3 AKI occurs in approximately 30% of patients with SBP treated with antibiotics alone, and is associated with a poor survival. The administration of albumin (1.5 g/kg at diagnosis and 1g/kg on day 3).

2.9 Failure to obtain fluid at paracentesis (no radiological guidance)

2.9.1 If two failed attempts to perform diagnostic paracentesis then confirm clinical diagnosis by ultrasound and request marking of paracentesis site.

2.9.2 If further failure of diagnostic paracentesis or large volume paracentesis required request ultrasound guided placement of drain (Maxims internal referral via Paracentesis referral service radiology Monday to Friday 9:00 -17:00hr).

2.10 SBP long-term prophylaxis

In patients with an ascitic fluid protein < 15 g/L and without prior SBP long-term prophylaxis reduces the risk of SBP and improves survival. Therefore, these patients should be considered for long-term prophylaxis with ciprofloxacin (250 mg/bd).

2.11 Large volume paracentesis (LVP)

2.11.1 Written consent for large volume paracentesis should be obtained.

2.11.2 The risk of complications associated with large volume paracentesis is:

- Ascitic fluid leak (5%)
  - Place stoma bag over leak
  - Consider further paracentesis to dryness (radiologically guided)
- Bleeding requiring transfusion (< 0.1 %)
- Bowel perforation (< 0.6%)
- Death (0.16 to 0.39%)

2.12 Large volume paracentesis is appropriate when patients present with tense ascites or diuretic therapy is contra-indicated due to renal impairment.

2.13 Large volume paracentesis usually should be performed with radiological ultrasound guidance (Maxims internal referral) via Paracentesis referral service radiology Monday to Friday 9:00 -17:00hr).

2.14 “Out of hours” emergency large volume paracentesis not required unless MAJOR RESPIRATORY DISTRESS - To be performed by experienced operator.

2.15 LVP should be performed together with the administration of albumin (8 g/L of ascitic fluid removed) to prevent circulatory dysfunction after LVP.

2.16 Acute kidney injury & Ascites (see AKI in cirrhosis guidelines)
2.16.1 AKI can be diagnosed by progressive rise in serial creatinine during hospital admission or a patient presenting with an acute kidney injury on admission and is common in patients with cirrhosis & ascites.

2.16.2 Patients should be volume resuscitated (intravenous Hartmann’s solution recommended) over a two to four hour period with up to two liters of fluid.

2.16.3 All nephrotoxic drugs (including diuretics and non-steroidal anti-inflammatory drugs) should be discontinued.

2.16.4 A full sepsis screen should be performed (blood culture, urine culture, culture ascitic fluid and chest X-ray).

2.16.5 Once volume resuscitated, and no improvement in renal function then consider use of Terlipressin as advised below.

2.17 Use of Terlipressin for AKI (See AKI & Cirrhosis)

2.17.1 Terlipressin should only be commenced once adequate volume resuscitation has been performed, as outlined above.

2.17.2 Terlipressin is relatively contra-indicated in patients with ischaemic heart disease or peripheral vascular disease.

2.17.3 Can be administered as intravenous bolus injection (0.5 -2 mg) 4 hourly or as infusion over 24 hr (when available).

2.17.3.1 Bolus therapy Weight based:
- 0.5 mg < 50kg
- 1mg 50-70kg
- 2mg > 70kg

2.17.3.2 Start terlipressin infusion 2 mg /24hr up to 12 mg/24hr.

2.17.4 Continuous infusion should be prepared using 5% glucose intravenous infusion, 500 mL infused continuously over 24 hours.
- 48hr review of infusion rate
- Increase by 2 mg/24hr if no initial fall in creatinine (<25 umol/l)
- Further increments to 4/8/12 mg/hr every 48 hr if needed
- Decrease by 0.5mg/24hr if side effects (DEPENDANT ON SEVERITY) with 4 hr review.

2.17.5 Major side effects angina digital ischemia, intestinal ischemia (diarrhoea), angina myocardial infarction and also arrhythmias and hyponatremia.

2.17.6 Co-administer daily 20% HAS 0.5g/kg (usually x 2 100ml 20% albumin bottles).

2.18 References
3 Monitoring compliance and effectiveness

<table>
<thead>
<tr>
<th>Element to be monitored</th>
<th>It is a guideline only for medical staff in secondary care without broad experience in the care of patients with chronic liver disease, compliance will be monitored through outcome of patients with ascites.</th>
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</thead>
<tbody>
<tr>
<td>Lead</td>
<td>Dr S H Hussaini</td>
</tr>
<tr>
<td>Tool</td>
<td>Audit of Complications associated with ascitic intervention</td>
</tr>
<tr>
<td>Frequency</td>
<td>Yearly</td>
</tr>
<tr>
<td>Reporting arrangements</td>
<td>Gastroenterology governance meetings</td>
</tr>
<tr>
<td>Acting on recommendations and Lead(s)</td>
<td>Dr Hussaini will change the guidance as necessary in keeping with national and international guidelines.</td>
</tr>
<tr>
<td>Change in practice and lessons to be shared</td>
<td>Any changes necessary will be disseminated through changes in practice in the department.</td>
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4 Equality and Diversity

4.1 This document complies with the Royal Cornwall Hospitals NHS Trust service Equality and Diversity statement which can be found in the ‘Equality, Inclusion & Human Rights Policy’ or the Equality and Diversity website.

4.2 Equality Impact Assessment
The Initial Equality Impact Assessment Screening Form is at Appendix 2.
## Appendix 1. Governance Information

<table>
<thead>
<tr>
<th>Document Title</th>
<th>Ascites related to Chronic Liver Disease Clinical Guideline V4.0</th>
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<tbody>
<tr>
<td>Date Issued/Approved:</td>
<td>01/11/2018</td>
</tr>
<tr>
<td>Date Valid From:</td>
<td>January 2019</td>
</tr>
<tr>
<td>Date Valid To:</td>
<td>January 2022</td>
</tr>
<tr>
<td>Directorate / Department responsible (author/owner):</td>
<td>Dr SH Hussaini, Gastroenterology</td>
</tr>
<tr>
<td>Contact details:</td>
<td>01872252722</td>
</tr>
<tr>
<td>Brief summary of contents</td>
<td>Guidance for the management of patients with ascites related to chronic liver disease</td>
</tr>
<tr>
<td>Suggested Keywords:</td>
<td>Ascites, cirrhosis, chronic liver disease</td>
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<tr>
<td>Target Audience</td>
<td>RCHT CFT KCCG</td>
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<tr>
<td>Executive Director responsible for Policy:</td>
<td>Medical Director</td>
</tr>
<tr>
<td>Date revised:</td>
<td>November 2018</td>
</tr>
<tr>
<td>This document replaces (exact title of previous version):</td>
<td>Clinical Guideline for the management of ascites related to chronic liver disease</td>
</tr>
<tr>
<td>Approval route (names of committees)/consultation:</td>
<td>Department of gastroenterology</td>
</tr>
<tr>
<td>Divisional Manager confirming approval processes</td>
<td>Andy Virr</td>
</tr>
<tr>
<td>Name and Post Title of additional signatories</td>
<td>None required</td>
</tr>
<tr>
<td>Name and Signature of Divisional/Directorate Governance Lead confirming approval by specialty and divisional management meetings</td>
<td>{Original Copy Signed}</td>
</tr>
<tr>
<td>Name: Dr SH Hussaini, Gastroenterology</td>
<td></td>
</tr>
<tr>
<td>Signature of Executive Director giving approval</td>
<td>{Original Copy Signed}</td>
</tr>
<tr>
<td>Publication Location (refer to Policy on Policies – Approvals and Ratification):</td>
<td>Internet &amp; Intranet ✔ Intranet Only</td>
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Ascites Related to Chronic Liver Disease Clinical Guideline V4.0

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Links to key external standards
EASL clinical practice guidelines on the management of ascites, spontaneous bacterial peritonitis, and hepatorenal syndrome in cirrhosis

Version Control Table

<table>
<thead>
<tr>
<th>Date</th>
<th>Version No</th>
<th>Summary of Changes</th>
<th>Changes Made by (Name and Job Title)</th>
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<tr>
<td>21/06/2006</td>
<td>V1.0</td>
<td>Initial Issue</td>
<td>Dr SH Hussaini</td>
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<tr>
<td>10/10/2012</td>
<td>V2.0</td>
<td>Addition of Monitoring Compliance table, adjustment of guideline in keeping with international guidelines.</td>
<td>W Stableforth &amp; Dr S Hussaini</td>
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<tr>
<td>16/02/2015</td>
<td>V3.0</td>
<td>Revised issue</td>
<td>Dr SH Hussaini</td>
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<tr>
<td>01/11/2018</td>
<td>V.4.0</td>
<td>No significant changes</td>
<td>Dr SH Hussaini</td>
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This document is to be retained for 10 years from the date of expiry.
This document is only valid on the day of printing

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Appendix 2. Initial Equality Impact Assessment Form

This assessment will need to be completed in stages to allow for adequate consultation with the relevant groups.

<table>
<thead>
<tr>
<th>Name of Name of the strategy / policy / proposal / service function to be assessed Ascites Related to Chronic Liver Disease Clinical Guideline</th>
<th>Directorate and service area: Gastroenterology / hepatology</th>
<th>Is this a new or existing Policy? Existing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of individual completing assessment: W Stableforth</td>
<td>Telephone: 01872252722</td>
<td></td>
</tr>
</tbody>
</table>

1. **Policy Aim***
   - Who is the strategy / policy / proposal / service function aimed at?
   - Guidance for the management of patients with ascites related to chronic liver disease

2. **Policy Objectives***
   - Guidance for the management of patients with ascites related to chronic liver disease

3. **Policy – intended Outcomes***
   - Improve management of patients with ascites related to chronic liver disease

4. **How will you measure the outcome?**
   - Audit of complications associated with paracentesis.

5. **Who is intended to benefit from the policy?**
   - Secondary care

6a. Who did you consult with Workforce Patients Local groups External organisations Other
   - X

b). Please identify the groups who have been consulted about this procedure.
   - Gastroenterology Governance Group

What was the outcome of the consultation? Ratified

7. The Impact
   - Please complete the following table. **If you are unsure/don’t know if there is a negative impact you need to repeat the consultation step.**

Are there concerns that the policy could have differential impact on:
<table>
<thead>
<tr>
<th>Equality Strands:</th>
<th>Yes</th>
<th>No</th>
<th>Unsure</th>
<th>Rationale for Assessment / Existing Evidence</th>
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<tbody>
<tr>
<td>Age</td>
<td>X</td>
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<tr>
<td>Sex (male, female, trans-gender / gender reassignment)</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>Race / Ethnic communities / groups</td>
<td>X</td>
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<td>Disability - Learning disability, physical impairment, sensory impairment, mental health conditions and some long term health conditions.</td>
<td>X</td>
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<td>Religion / other beliefs</td>
<td>X</td>
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<td>Marriage and Civil partnership</td>
<td>X</td>
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<tr>
<td>Pregnancy and maternity</td>
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<tr>
<td>Sexual Orientation, Bisexual, Gay, heterosexual, Lesbian</td>
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</tbody>
</table>

**You will need to continue to a full Equality Impact Assessment if the following have been highlighted:**
- You have ticked “Yes” in any column above and
- No consultation or evidence of there being consultation- this **excludes** any policies which have been identified as not requiring consultation. or
- Major this relates to service redesign or development

8. Please indicate if a full equality analysis is recommended.  
   | Yes | No | X |
---|-----|----|---|

9. If you are not recommending a Full Impact assessment please explain why.

**Signature of policy developer / lead manager / director**

Dr Hyder Hussaini

**Date of completion and submission**

November 2018

**Names and signatures of members carrying out the Screening Assessment**

1. Dr Hyder Hussaini
2. Human Rights, Equality & Inclusion Lead
Keep one copy and send a copy to the Human Rights, Equality and Inclusion Lead
c/o Royal Cornwall Hospitals NHS Trust, Human Resources Department, Knowledge Spa,
Truro, Cornwall, TR1 3HD

This EIA will not be uploaded to the Trust website without the signature of the
Human Rights, Equality & Inclusion Lead.

A summary of the results will be published on the Trust’s web site.

Signed __ _____ Dr Hyder Hussaini _________
Date ______ November 2018 _________