Management of Acute Cholangitis in Adults Clinical Guideline

V3.0

May 2019
Summary

Acute Cholangitis Treatment Pathway

**Diagnosis**
A - Systemic inflammation
Fever +/- rigors
Raised inflammatory markers
B - Cholestasis
Jaundice
Deranged LFTs
C - Imaging
Biliary dilatation
Evidence of aetiology on imaging (stricture, stone, stent etc.)

Suspected: One item in A + one item in B or C
Definite: One item in A and B and C

**Detailed History & Examination**
History of gallstones
Medication and drug intake
Recent intervention (e.g. ERCP / stent)
History of biliary stricture / malignancy
Co-morbidities (respiratory, cardiac, diabetes, high BMI)

**Investigations**
a) FBC, U+Es, LFTs, amylase, CRP, clotting
b) Blood cultures
c) Arterial blood gas (to assess hypoxia or metabolic acidosis)
d) Upper abdominal ultrasound

**Immediate Management**
A  Ensure patent airway
B  Oxygen – target 94-98% saturation (88-92% if COPD)
C  Intravenous fluids
   - Hartmanns solution
   - Administer 30ml/kg for hypotension or lactate ≥4mmol/l
   - 5-10mls/kg/h first 24 hours until goals met
   - Goals to meet :-
     - Heart rate <120/min
     - Mean arterial pressure = 65-85mmHg
     - Urine output = 0.5-1ml/kg/h

Urinary catheter – hourly urine output monitoring

D/E  Antibiotics
Amoxicillin IV 500mg 8 hourly + Gentamicin
Add metronidazole IV 500mg 8 hourly if anaerobes suspected
If penicillin allergy: Vancomycin + Gentamicin +/- metronidazole
Is Systemic Inflammatory Response Syndrome (SIRS) present?
Any 2 of the following:
- Respiratory rate > 20
- Heart rate > 90
- WCC < 4 or > 12
- Temp < 36°C or > 38°C

Presence of SIRS on admission is a predictor of SEVERE cholangitis and requires senior medical review.

Urgent senior medical & ITU outreach review if any of below:

<table>
<thead>
<tr>
<th>Clinical signs</th>
<th>Bloods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airway not maintained</td>
<td>pH &lt; 7.1 or &gt; 7.7</td>
</tr>
<tr>
<td>Resp. rate &gt; 35/min &gt; 170 mmol/l</td>
<td>Sodium &lt; 110 or</td>
</tr>
<tr>
<td>paO₂ &lt; 6.7 kPa</td>
<td>Potassium &lt; 2.0 or</td>
</tr>
<tr>
<td>HR &lt; 40 or &gt; 150/min</td>
<td>Calcium &gt; 3.75 mmol/l</td>
</tr>
<tr>
<td>Systolic blood pressure &lt; 80 mmHg</td>
<td>Glucose &gt; 44.4 mmol/l</td>
</tr>
<tr>
<td>MAP &lt; 60 mmHg</td>
<td></td>
</tr>
<tr>
<td>Diastolic blood pressure &gt; 120 mmHg</td>
<td></td>
</tr>
<tr>
<td>Anuria</td>
<td></td>
</tr>
<tr>
<td>Coma (GCS &lt; 8)</td>
<td>Severity grading</td>
</tr>
<tr>
<td>Severe cholangitis</td>
<td></td>
</tr>
</tbody>
</table>

Severity Assessment (TG13 classification) - Assess at admission, 24 hours and 48 hours.

Severe: At least one organ dysfunction*

Moderate: Any two of the following:
- WCC > 12 or < 4
- Temp > 39°C
- Age ≥ 75 years
- Bilirubin > 85
- Albumin < 28

Mild: Do not meet above criteria

URGENT biliary drainage (< 24 hrs)
EARLY biliary drainage (< 48 hrs)
ELECTIVE biliary drainage

Consideration of HDU involvement where:
- Persistent SIRS > 48h
- Elderly (aged > 75 yrs)
- Obese (BMI > 35)
- Moderately severe cholangitis

*Organ dysfunction definitions:
Cardiovascular - Hypotension requiring inotropes
Respiratory - Type 1 or 2 respiratory failure
Renal - Oliguria or creatinine > 177 µmol/L
Hepatic - INR > 1.5
Haematological - Platelets < 100 (10^9/L)
Neuro - Impaired consciousness
1. **Aim/Purpose of this Guideline**

1.1. This guideline is for the management of acute cholangitis in adults. It has been benchmarked against national guidelines to provide a detailed guidance of clinical management of acute cholangitis in line with best practice guidelines. This guideline applies to all healthcare professionals involved in the treatment of acute cholangitis.

1.2. This version supersedes any previous versions of this document.

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.

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. **Ownership**

All patients with a DEFINITE diagnosis of acute cholangitis should be managed by the gastroenterologists.

2.2. **Imaging**

2.2.1. Gold standard first line investigation is USS abdomen

2.2.2. CT indications:
- Diagnostic uncertainty
- Suspected complication of acute cholangitis (e.g. liver abscess)

2.2.3. MRCP indications:-
- Where aetiology remains unclear
- Confirmation of bile duct stone where LFTs have settled or CBD diameter is normal
- Suspected malignant biliary obstruction

2.3. **Use of ERCP and PTC for biliary drainage**

2.3.1. Severe cholangitis: URGENT biliary drainage <24 hours
2.3.2. Moderate cholangitis: EARLY biliary drainage <48 hours

2.3.3. Mild cholangitis: Antibiotics +/- ELECTIVE biliary drainage

2.3.4. Patients requiring URGENT biliary drainage should be discussed initially with a Consultant gastroenterologist specialising in ERCP or alternatively a Consultant interventional radiologist that performs PTC (percutaneous transhepatic cholangiopancreatography).

2.4. Future cholecystectomy

All patients with confirmed biliary cholangitis secondary to gallstones, considered fit for surgery, should be discussed with the upper GI surgery team prior to discharge (registrar or Consultant level referral) to ensure a definitive long term plan regarding cholecystectomy. In most cases surgery will be deferred for 6 weeks from the episode of cholangitis.

3. Monitoring compliance and effectiveness

<table>
<thead>
<tr>
<th>Element to be monitored</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead</td>
<td>Mr Michael Clarke</td>
</tr>
<tr>
<td>Tool</td>
<td>Patient documentation and Rolling audit</td>
</tr>
<tr>
<td>Frequency</td>
<td>Adult acute cholangitis patients who are reviewed by specialist teams. Audit 6 monthly</td>
</tr>
<tr>
<td>Reporting arrangements</td>
<td>Involved specialties governance committees. Repeated non-compliance to be reported via Datix</td>
</tr>
</tbody>
</table>
| Acting on recommendations and Lead(s) | **Hospital Working Group**
  Michael Clarke (Consultant upper GI surgeon) - Chair
  Mohamed Abdelrahman (ST3 General Surgery)
  Ian Finlay (Consultant upper GI surgeon)
  Hyder Hussaini (Consultant gastroenterologist)
  Bill Stableforth (Consultant gastroenterologist)
  Madeline Strugnell (Consultant radiologist)
  Dushyant Shetty (Consultant radiologist)
  John Hancock (Consultant interventional radiologist)
  Mike Spivey (Consultant in Intensive Care) |
| Change in practice and lessons to be shared | Required changes to practice will be identified and actioned within 6 months. A lead member of the team will be identified to take each change forward where appropriate. Lessons learned or changes to practice will be shared with all stakeholders. |

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>Management of Acute Cholangitis in Adults Clinical Guideline V3.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Issued/Approved:</td>
<td>07 May 2019</td>
</tr>
<tr>
<td>Date Valid From:</td>
<td>May 2019</td>
</tr>
<tr>
<td>Date Valid To:</td>
<td>May 2022</td>
</tr>
<tr>
<td>Directorate / Department responsible (author/owner):</td>
<td>Mr Michael Clarke (Consultant Upper GI and Bariatric Surgeon) Mr Mohamed Abdelrahman (Upper GI Spr)</td>
</tr>
<tr>
<td>Contact details:</td>
<td>Mr Michael Clarke (01872 252373)</td>
</tr>
<tr>
<td>Brief summary of contents</td>
<td>This guideline is for the management of acute cholangitis in adults. This guideline applies to all healthcare professionals involved in the treatment of acute cholangitis.</td>
</tr>
<tr>
<td>Suggested Keywords:</td>
<td>Cholangitis</td>
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<tr>
<td>Executive Director responsible for Policy:</td>
<td>Medical Director</td>
</tr>
<tr>
<td>Date revised:</td>
<td>07 May 19</td>
</tr>
<tr>
<td>This document replaces (exact title of previous version):</td>
<td>Clinical Guideline For Management Of Acute Cholangitis In Adults V2.0</td>
</tr>
<tr>
<td>Approval route (names of committees)/consultation:</td>
<td>Hospital working group Divisional Governance Committee</td>
</tr>
<tr>
<td>Care Group General Manager confirming approval processes</td>
<td>Charlotte Timmins</td>
</tr>
<tr>
<td>Name and Post Title of additional signatories</td>
<td>Not required</td>
</tr>
<tr>
<td>Name and Signature of Care Group/Directorate Governance Lead confirming approval by specialty and care group management meetings</td>
<td>{Original Copy Signed} Name: Suzanne Atkinson</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>
</tr>
<tr>
<td>Document Library Folder/Sub Folder</td>
<td>Clinical / General Surgery</td>
</tr>
</tbody>
</table>
Links to key external standards

None required

Related Documents:

2. AUGIS. Pathway for the management of acute gallstone diseases. AUGIS 2015.

Training Need Identified? No

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>01 09 15</td>
<td>V1.0</td>
<td>Initial issue</td>
<td>Michael Clarke – Consultant Upper GI and Bariatric Surgeon</td>
</tr>
<tr>
<td>23 Feb 16</td>
<td>V2.0</td>
<td>No changes</td>
<td>Michael Clarke – Consultant Upper GI and Bariatric Surgeon</td>
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<td>V3.0</td>
<td>No changes</td>
<td>Michael Clarke – Consultant Upper GI and Bariatric</td>
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</table>

All or part of this document can be released under the Freedom of Information Act 2000

This document is to be retained for 10 years from the date of expiry.
This document is only valid on the day of printing

Controlled Document
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## Appendix 2. Initial Equality Impact Assessment Form

**Name of the strategy / policy / proposal / service function to be assessed**
Management of Acute Cholangitis in Adults Clinical Guideline V3.0

<table>
<thead>
<tr>
<th>Directorate and service area:</th>
<th>New or existing document:</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Surgery</td>
<td>Existing</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name of individual completing assessment:</th>
<th>Telephone:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr Michael Clarke</td>
<td>01872 252373</td>
</tr>
</tbody>
</table>

1. **Policy Aim***
   *Who is the strategy / policy / proposal / service function aimed at?*
   To provide detailed guidance on the clinical management of acute cholangitis in line with best practice guidelines.

2. **Policy Objectives***
   - To provide a consistent approach to the management of acute cholangitis at RCHT sites.
   - To maintain patient safety and improve outcomes for patients experiencing acute cholangitis whilst inpatients at RCHT sites.

3. **Policy – intended Outcomes***
   - Consistent management of acute cholangitis at RCHT sites.
   - Prompt and safe management of acute cholangitis and follow up care.

4. **How will you measure the outcome?***
   - Audit
   - Datix Reporting
   - Review of nursing/medical documentation as required

5. **Who is intended to benefit from the policy?***
   All patients who experience acute cholangitis in hospital at RCHT sites.

6a. **Who did you consult with?***

<table>
<thead>
<tr>
<th>Workforce</th>
<th>Patients</th>
<th>Local groups</th>
<th>External organisations</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   **b). Please identify the groups who have been consulted about this procedure.**
   - General surgery team (Audit meeting).
   - Consultants (Radiology, Gastroenterology, Microbiology, Intensive care).

   **Please record specific names of groups**

   Agreed
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.

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

Not indicated
This EIA will not be uploaded to the Trust website without the approval of the Policy Review Group.

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