Local Anaesthetic Infusion/Infiltration via a Nerve Catheter for Pain Management
Clinical Guideline

V4.0

January 2019
Summary.
Local anaesthetic infusions/infiltrations via a nerve or wound catheter for the management of pain

McKinley Bodyguard 595 grey fronted pump
Protocol:
A: 0.125% Levobupivacaine 0-10mls/hr
B: Levobupivacaine 0-5mls/hr + patient controlled bolus 0-5mls/hr
C: Prescribed specific drug/dilution.

Prefilled Elastomeric Device
Should be prefilled prior to leaving theatre/recovery. Single use only
2 or 5mls/hr
Infusion complete when membrane deflated

Clinician Bolus
Bupivacaine (Levobupivacaine) 0.25%, 10mls injected via nerve/wound catheter 6hrly by RN competent to administer local anaesthetic via infusion/bolus or an anaesthetist.

Signs, symptoms and treatment of LA toxicity
Mild: restlessness/confusion, light headed, numb tongue/lips, tinnitus, Double vision.
Treatment: STOP infusion/injecting, inform medical team, maintain oxygenation and BP, continue to observe closely, contact pain team/anaesthetist.

Moderate/severe: Muscle twitching, convulsions, hypotension, respiratory or cardiac arrest
Treatment: STOP infusion/injecting, attach ECG monitoring, fast bleep medical team or cardiac arrest call, collect lipid rescue box, maintain airway and give high flow oxygen
Treat convulsions with Diazepam, hypotension with IV fluids
Commence CPR if in cardio arrest.

Clinical Observations
Pulse, BP, respiratory rate, sedation and pain scores
- On commencement
- Every 15minutes for 1 hour
- Every 30 minutes for 2 hours
- Hourly for 4 hours
- 4 hourly thereafter unless patients condition indicates otherwise

Continue Infusion or remove catheter on completion of infusion or 5 days unless clinically indicated earlier removal appropriate.
1. **Aim/Purpose of this Guideline**

1.1. Nursing guidelines for the use of local anaesthetic infusions/infiltrations via a nerve or wound catheter for the management of pain.

Nerve/wound infiltration is a technique which can be used to provide analgesia post-surgery, trauma or nerve injury. It can be used as part of a multimodal approach to analgesia to reduce opioid requirements and side-effects.

The injection of local anaesthetic to nerves in the affected area blocks the pain impulses travelling from the receptors to the brain.

At the time of anesthesia and surgery local anaesthetic can be injected either near specific nerves (a ‘nerve block’), into a wound area (‘infiltration’), or a joint cavity. The anaesthetist or surgeon can extend the effect by inserting a fine bore catheter into the appropriate area and administering further local anaesthetic. This can be via an elastomeric device, infusion pump or prescribed bolus injection.

1.2. **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. **Professional responsibility.**

2.1.1. A registered nurse must have attained competency in IV drug administration.

2.1.2. Additionally a registered nurse or a doctor who has received training, assessment and been deemed competent in managing local anaesthetic infusions or administering a prescribed bolus must be
responsible for the delivery of treatment. This includes training in the use of the McKinley 595 infusion pump and treatment of local anaesthetic toxicity.

2.2. Supportive mechanism

For advice between the hours of 0830-1630 contact the Pain Specialist Nurses via bleep. Out of hours contact the on-all anaesthetist.

2.3 Setting up the Infusion.

2.3.1 An assessment of mobility should be carried out prior to mobilization. The patient should be warned to conduct themselves with appropriate care.

2.3.2 The patient should be warned to protect the area/limb: a nerve catheter will leave a part of the body with reduced or no sensitivity. Patients will be unaware of actual or impending damage caused by prolonged pressure or by sharp items.

2.3.3 A nerve catheter may cause weakness in muscles used for movement, or for protecting themselves against fall and injuries. This weakness may increase, for example following a catheter top-up.

2.3.4 All prescriptions are the responsibility of prescriber. The prescription should be timed and dated. The duration of treatment may be determined by the prescriber or its discontinuation may be at the discretion of the clinical team.

2.4 Prescription

2.4.1 McKinley 595 infusion:
There are two standard prescriptions using pre-packaged bupivacaine (levobupivacaine) bags.

- Protocol A: Bupivacaine 0.125%, 0-10ml/hour.
- Protocol B: Bupivacaine 0.125%, 0-5ml/hour with optional patient controlled bolus of 0-5ml or specified by the prescriber.

The pumps also have a 3rd protocol:
- Protocol C: 0-20ml/hour. This can be used with different local anaesthetic preparations only at the discretion of the anaesthetist. The prescription should specify how the drug should be diluted.

2.4.2 Prescription for Elastomeric infusion.
Bupivacaine (levobupivacaine) prefilled prior to transfer from the operating theatre. Rate of 2 or 5mls per hour as prescribed dependent on the device being used. If the prescription is any different, check with the individual anaesthetist.

2.4.3 Prescription for bolus.
Bupivacaine (levobupivacaine) 0.25% 10mls every six hours. This dose may be altered according to patient weight.
2.5 **Equipment and delivery.**

The patient must have a patent intravenous cannula in situ for the duration of the infusion/treatment.

2.5.1 Elastomeric Devices e.g. ‘Pain Busters’.

2.5.1.1. The elastomeric device are single use only and should be filled according to the manufacturer’s guidelines using an aseptic non-touch technique.

2.5.1.2. The elastomeric device must be only be used for local anaesthetic infusions. The line must be clearly labeled. Always check that the infusion is connected to the correct infusion port. Remember to record date and start time to assist with ongoing infusion monitoring.

2.5.1.3. Elastomeric devices must only be filled by healthcare professionals who have received the appropriate training. Never overfill or refill the device.

2.5.1.4. The infusion is complete when the elastic membrane contained within the infusion device is deflated (generally 24-72hrs).

2.5.2 Infusion pump: McKinley 595.

2.5.2.1. The *grey* McKinley 595 infusion pump labeled nerve block/wound infiltration is only to be used for local anaesthetic infusions.

2.5.2.2. Pump identity numbers must be recorded on setting up infusion.

2.5.2.3. There is a dedicated *grey* coloured giving set which is to be used so it is easily identifiable as a local anaesthetic infusion. The line should be labeled appropriately.

2.5.2.4. The infusion bag and rate must only be changed be an appropriately trained registered nurse.

2.5.2.5. The pump must be placed at trunk height to avoid syphoning.

2.5.2.6. Delays in changing the infusion bag must be avoided to achieve constant analgesia. An aseptic non-touch technique must be used.

2.5.2.7. Giving sets must be changed every 72 hours.

2.5.2.8. NB. Additional local anaesthetic boluses should only be given by an anaesthetist or appropriate clinician.
2.5.3 Nerve catheter bolus injection.
Prepare drug for administration according to prescription using an aseptic non-touch technique.

2.5.3.1. Check catheter insertion site for signs of migration, leakage and infection. Do not inject if there are any concerns and contact the patient’s medical team, Pain Specialist Nurse or anaesthetist.

2.5.3.2. Ensure the catheter is appropriately labeled and a filter is in situ.

2.5.3.3. Using an aseptic non-touch technique attach the syringe and aspirate for blood using a low force for 30 seconds.

2.5.3.4. If blood is aspirated, do not administer the bolus. Inform the medical team, anaesthetist or Pain Specialist Nurses.

2.5.3.5. If no blood aspirated, inject 5mls over 2-3 minutes.

2.5.3.6. Wait 2 minutes

2.5.3.7. Ask the patient to inform you of any double vision, tinnitus, numb mouth or metallic taste. Observe for any twitching of the limbs or sudden confusion. If the patient exhibits no side effects, inject the remaining volume over 5 minutes. Remove the syringe ensuring there is a sterile cap or bung on the line.

2.6. Monitoring and management.

2.6.1. Close monitoring is essential not only to detect potential complications from the surgery or trauma but also any adverse reactions from the local anaesthetic agents.

2.6.2. Patients should be nursed in an area where there is adequate monitoring and competent staff.

2.6.3. Observations should be recorded on the National Early Warning Score chart (NEWS) and the Analgesia Assessment chart using the specific scoring system for motor power and local anaesthetic toxicity.

2.6.4. Intravenous access must be maintained whilst the infusion/treatment is in progress and cannula care carried out as per RCHT protocol.

2.6.5. The catheter insertion site should be observed at each bolus or at least twice daily if infusion running, for signs of infection or leakage. Any problems should be reported to the medical team, anaesthetist or pain specialist nurse.

2.6.6. Mobility – patients with blocks to lower limbs may mobilise with support following assessment of limb strength. Motor block is common. Ensure that limbs with motor block are supported at all times and pressure
area care is carried out see 2.3.

2.6.7. **Clinical Observations**: On commencement of treatment: pulse, blood pressure, respirations, sedation and pain scores should be recorded:

- Every 15 mins for 1 hour
- Every 30 mins for 2 hours
- Hourly for 4 hours
- 4 hourly thereafter unless patient’s condition indicates otherwise.
- Pain scores should be recorded at rest and on movement.

2.6.8. Local anaesthetic toxicity and motor power monitoring should be recorded on the Analgesia Assessment chart:

- Hourly for 2 hours
- 4 hourly thereafter or unless the patient’s condition changes or a bolus is administered.

2.7. **Potential complications**.

2.7.1. Local anaesthetic toxicity can occur, especially if there is rapid absorption into the blood stream, or if inadvertently administered intravenously. This is very rare but it is important that the signs are recognised.

2.7.2. **Signs of toxicity**:

1. **Mild** - restlessness/confusion
   - light-headedness
   - numbness of tongue and lips (lip smacking)
   - tinnitus
   - double vision, blurred vision

2. **Moderate** – heaviness of limbs
   - muscular twitching
   - convulsions

3. **Severe** – cardiac arrhythmias
   - hypotension
   - respiratory arrest
   - cardiac arrest

2.7.3. **Treatment of toxicity**:

2.7.3.1. **If symptoms are mild (1)**;
- Stop local anaesthetic infusion and inform medical team
- Attach ECG and monitors
- Maintain oxygenation and BP
- Consult with medical team, Pain Team or on call anaesthetist
- Continue to observe closely

2.7.3.2. **If symptoms are moderate or severe (2 or 3)**:

• Stop local anaesthetic infusion
• Attach ECG and monitors
• Phone for help immediately – fast bleep 4444 medical team / anaesthetist or cardiac arrest 2222
• Collect Lipid Rescue Box from the nearest recovery area or Eden ward if patient is in local anaesthetic induced cardiac arrest.
• Maintain airway and give high flow oxygen.
• Hypotension will be treated with IV fluids
• Convulsions will be treated with diazepam
• Commence CPR if in cardiac arrest
• Treatment will require intravenous Intralipid 20% (from the lipid rescue box). The initial dose is 1.5ml/kg over 1 minute, followed by an intravenous infusion of 15ml/kg over 1 hour.

  o For a 70kg adult this means 100mls over 1 minute followed by 1000mls over 1 hour.

  o Refer to The Association of Anaesthetists of Great Britain and Ireland safety guideline ‘Management of Severe Local Anaesthetic Toxicity’.

2.7.4. Difficulty injecting through the catheter or leakage at the site – ask the surgical team or anaesthetist.

2.7.5. Local infection at the catheter site:

Ask surgical team or Pain specialist nurse to review. It is likely that the catheter will have to be removed.

2.8. Removal of catheter.

2.8.1. The catheters must be removed on day 5 or sooner if infection or leakage occurs. This can be reviewed at the time (if felt necessary) and the catheters left in for a maximum of 7 days.

2.8.2. Using an aseptic non-touch technique remove the dressing. Apply gentle traction to the catheter. This should be enough to remove it. If there is any resistance inform the surgical team. The catheter should only be removed by a trained member of staff.

2.8.3. Ensure the blue tip is intact on the end of the catheter – document in patient’s nursing evaluation.

2.8.4. Send the tip for MC&S if infection is suspected.

2.8.5. Cover with a non-occlusive dressing.

2.8.6. Remove the dressing after 24 hours.
3. Monitoring compliance and effectiveness

<table>
<thead>
<tr>
<th>Element to be monitored</th>
<th>Adherence to guideline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead</td>
<td>Acute Pain Team</td>
</tr>
<tr>
<td>Tool</td>
<td>The patient will be reviewed daily by the acute pain team or on call anaesthetist and adherence to the guideline will be recorded in the patient's medical notes and MAXIMS database. DATIX reports will be investigated.</td>
</tr>
<tr>
<td>Frequency</td>
<td>Pain forms will be audited yearly</td>
</tr>
<tr>
<td>Reporting arrangements</td>
<td>The audit is reported to the Acute pain lead consultant, the Pain Team governance lead and anaesthetic governance lead.</td>
</tr>
<tr>
<td>Acting on recommendations and Lead(s)</td>
<td>Acute Pain Team</td>
</tr>
<tr>
<td>Change in practice and lessons to be shared</td>
<td>Required changes will be identified and actioned within 1 month. A lead member of the team will be identified to take each change forward where appropriate. Lessons will be shared with all relevant stakeholders.</td>
</tr>
</tbody>
</table>

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>Local Anaesthetic Infusion/Infiltration via a Nerve Catheter for Pain Management Clinical Guideline V4.0</th>
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<tbody>
<tr>
<td>Date Issued/Approved:</td>
<td>21/12/18</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>Sarah Medlicott, Pain Specialist Nurse</td>
</tr>
<tr>
<td>Contact details:</td>
<td>01872 252095</td>
</tr>
<tr>
<td>Brief summary of contents</td>
<td>Nursing guidelines for the care of a patient with a nerve or wound catheter and the administration of local anaesthetic infusion/infiltration/bolus injection</td>
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<tr>
<td>Suggested Keywords:</td>
<td>Local anaesthetic, nerve catheter, local anaesthetic infusion, local anaesthetic bolus, wound infiltration, elastomeric,</td>
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<tr>
<td>Target Audience</td>
<td>RCHT</td>
</tr>
<tr>
<td>Executive Director responsible for Policy:</td>
<td>Medical Director</td>
</tr>
<tr>
<td>Date revised:</td>
<td>14/12/18</td>
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<tr>
<td>This document replaces (exact title of previous version):</td>
<td>Continuous local anaesthetic infusion nursing guidelines</td>
</tr>
<tr>
<td>Approval route (names of committees)/consultation:</td>
<td>Acute Pain lead consultant and Pain services</td>
</tr>
<tr>
<td>Divisional Manager confirming approval processes</td>
<td>Care Group General Manager</td>
</tr>
<tr>
<td>Name and Post Title of additional signatories</td>
<td>Not 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} Name: Dr Keith Mitchell</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)</td>
<td>Internet &amp; Intranet</td>
</tr>
</tbody>
</table>
Ratification):

| Document Library Folder/Sub Folder | Clinical / Pain |

Links to key external standards

The Association of Anaesthetists of Great Britain and Ireland safety guideline ‘Management of Severe Local Anaesthetic Toxicity’

[https://www.aagbi.org/sites/default/files/la_toxicity_2010_0.pdf](https://www.aagbi.org/sites/default/files/la_toxicity_2010_0.pdf)

Related Documents:

Rectus sheath catheter guidelines

Training Need Identified?

Yes
Administration of IV drugs.
McKinley pump 595 training.
Online theoretical training via ESR followed by witnessed and supervised practise to gain competency.

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>10 Jun 10</td>
<td>V1.0</td>
<td>Initial Issue</td>
<td>Andrew Rogers Corporate Records Manager</td>
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<tr>
<td>1 Feb 11</td>
<td>V2.0</td>
<td>Addition of Monitoring Compliance table.</td>
<td>Andrew Rogers Corporate Records Manager</td>
</tr>
<tr>
<td>15 Jan 12</td>
<td>V2.1</td>
<td>Governance information moved to an appendix. EIA updated. Governance information amended to align with format of Document Manager Upload Form.</td>
<td>Andrew Rogers Corporate Records Manager</td>
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<tr>
<td>5 Aug 13</td>
<td>V2.2</td>
<td>Updated governance information table to include KCCG.</td>
<td>Andrew Rogers Corporate Records Manager</td>
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<tr>
<td>2/11/15</td>
<td>V3</td>
<td>Reformatted to Trust template</td>
<td>Jayne Thomas Pain specialist nurse</td>
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<tr>
<td>2/11/15</td>
<td>V3.1</td>
<td>Addition of information regarding bolus administration</td>
<td>Jayne Thomas, Pain specialist nurse</td>
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<tr>
<td>2/11/15</td>
<td>V3.2</td>
<td>Addition of information regarding the treatment of local anaesthetic toxicity and removal of catheter.</td>
<td>Jayne Thomas, Pain specialist nurse</td>
</tr>
</tbody>
</table>
Policy Review and updated to include wound infiltration via elastomeric devices to replace duplicate guideline: Clinical guideline for the nursing care of a patient with an elastomeric device.

2.3 Section for information regarding setting up infusions and to highlight potential problems with nerve blocks.

2.5.1 Elastomeric devices are single use and recognition when infusion completed

Addition of Appendix 3: A copy of AAGBI guidelines.

Sarah Medlicott
Pain Specialist Nurse

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
This document has been created following the Royal Cornwall Hospitals NHS Trust Policy for the Development and Management of Knowledge, Procedural and Web Documents (The Policy on Policies). It should not be altered in any way without the express permission of the author or their Line Manager.
# 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 the strategy / policy / proposal / service function to be assessed</th>
<th>Local Anaesthetic Infusion/Infiltration via a Nerve Catheter for Pain Management Clinical Guideline V4.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directorate and service area:</td>
<td>Is this a new or existing Policy?</td>
</tr>
<tr>
<td>Anaesthetics/pain</td>
<td>Existing</td>
</tr>
<tr>
<td>Name of individual completing assessment:</td>
<td>Telephone:</td>
</tr>
<tr>
<td>Sarah Medlicott</td>
<td>01872 252172</td>
</tr>
</tbody>
</table>

1. **Policy Aim**

Nursing guidelines for the use of local anaesthetic infusion via a nerve catheter for the management of pain.

2. **Policy Objectives**

Safe management for patients with nerve catheters.

3. **Policy – intended Outcomes**

Patient will be managed safely and effectively

4. **How will you measure the outcome?**

- Regular audit
- Review of patients by acute pain team
- Monitoring of DATIX reports.

5. Who is intended to benefit from the policy?

- Patients and staff

6a Who did you consult with

- Workforce
- Patients
- Local groups
- External organisations
- Other

<table>
<thead>
<tr>
<th>Yes</th>
<th>Not required</th>
<th>Not applicable</th>
<th>Not applicable</th>
<th>Not applicable</th>
</tr>
</thead>
</table>

**Acute and Chronic pain nurses**

**Acute and Chronic pain consultants**

b). Please identify the groups who have been consulted about this procedure.

What was the outcome of the consultation?

Any recommendations discussed and guideline amended as appropriate.
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>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
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<tr>
<td>Sex (male, female, trans-gender / gender reassignment)</td>
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<td>Race / Ethnic communities /groups</td>
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<tr>
<td>Disability - Learning disability, physical impairment, sensory impairment, mental health conditions and some long term health conditions.</td>
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<td>Religion / other beliefs</td>
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<td>Marriage and Civil partnership</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.

This is replacing an existing policy which did not require a full impact assessment

Signature of policy developer / lead manager / director  Date of completion and submission

Dr Nicholas Marshall, Acute Pain Lead Consultant  2/1/2019
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: Sarah Medlicott
Date: 2/1/2019
## AAGBI Safety Guideline

**Management of Severe Local Anaesthetic Toxicity**

### 1 Recognition

- **Signs of severe toxicity:**
  - Sudden alteration in mental status, severe agitation or loss of consciousness, with or without tonic-clonic convulsions
  - Cardiovascular collapse: sinus bradycardia, conduction blocks, asystole and ventricular tachyarrhythmias may all occur
  - Local anaesthetic (LA) toxicity may occur some time after an initial injection

### 2 Immediate management

- Stop injecting the LA
- Call for help
- Maintain the airway and, if necessary, secure it with a tracheal tube
- Give 100% oxygen and ensure adequate lung ventilation (hyperventilation may help by increasing plasma pH in the presence of metabolic acidosis)
- Confirm or establish intravenous access
- Control seizures: give a benzodiazepine, thiopental or propofol in small incremental doses
- Assess cardiovascular status throughout
- Consider drawing blood for analysis, but do not delay definitive treatment to do this

### 3 Treatment

#### IN CIRCULATORY ARREST

- Start cardiopulmonary resuscitation (CPR) using standard protocols
- Manage arrhythmias using the same protocols, recognising that arrhythmias may be very refractory to treatment
- Consider the use of cardiopulmonary bypass if available

#### GIVE INTRAVENOUS LIPID EMULSION (following the regimen overleaf)

- Continue CPR throughout treatment with lipid emulsion
- Recovery from LA-induced cardiac arrest may take >1 h
- Propofol is not a suitable substitute for lipid emulsion
- Lidocaine should not be used as an anti-arrhythmic therapy

#### WITHOUT CIRCULATORY ARREST

- Use conventional therapies to treat:
  - Hypotension,
  - Bradycardia,
  - Tachycardia,
  - Tachyarrhythmia

#### CONSIDER INTRAVENOUS LIPID EMULSION (following the regimen overleaf)

- Propofol is not a suitable substitute for lipid emulsion
- Lidocaine should not be used as an anti-arrhythmic therapy

### 4 Follow-up

- Arrange safe transfer to a clinical area with appropriate equipment and suitable staff until sustained recovery is achieved
- Exclude pancreatitis by regular clinical review, including daily amylase or lipase assays for two days
- Report cases as follows:
  - In the United Kingdom to the National Patient Safety Agency (via www.npsa.nhs.uk)
  - In the Republic of Ireland to the Irish Medicines Board (via www.imb.ie)
- If lipid has been given, please also report it's use to the International registry at www.lipidregistry.org. Details may also be posted at www.lipidrescue.org

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This guideline is not a standard of medical care. The ultimate judgement with regard to a particular clinical procedure or treatment plan must be made by the clinician in the light of the clinical data presented and the diagnostic and treatment options available.

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**Appendix 3: AAGBI Guidelines for the management of Local Anaesthetic Toxicity**