

Document Title:	USE OF LEECHES IN PLASTIC AND RECONSTRUCTIVE SURGERY		
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Consulted With: <i>this must include Pharmacy if the document has any reference to medication</i>	Post/ Approval Committee/ Group:	Date:
Dr. Subrahmanyam Peddasomayajula	Consultant Rheumatologist	20 th January 2020
Catherine Dunn	Senior Sister Mayflower Ward	13 th February 2020

Related Trust Policies (to be read in conjunction with)	(Refer to the main body of the text) Adult Antimicrobial Guide 04088 Waste Management Policy
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Document Review History:			
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1.0	Sayra Khatun		27 th May 2010
1.1	Sayra Khatun		August 2013
2.0	Sayra Khatun		February 2014
3.0	Lesley Stuart		14 th June 2016
3.1	Lesley Stuart	6 month extension request due to MSB standardisation	17 th May 2019
4.0	Sayra Khatun	Full review	14th February 2020

Contents

1	Introduction	4
2	Scope	4
3	Definitions	4
4	Roles and Responsibilities	4
5	Procurement and Storage	5
6	Transfer of Leeches	6
7	Prescribing of Leeches	6
8	Administration of Leeches	7
9	Disposal of Leeches	7
10	Monitoring and Audit	7
11	Implementation and Communication	8
12	Equality Impact Assessment	8
13	References	8
	Appendix 1: Record Sheet for Transfer of Leeches from Mayflower Ward (E322)	9
	Appendix 2: Preliminary Equality Analysis	10

1 Introduction

- 1.1 Leech therapy is widely used in plastics and reconstructive surgery on any skin flap or other tissues suffering from venous congestion. This guideline is to aid all healthcare professionals involved in leech treatment to be familiar with the procurement, prescribing, supply, storage, administration, and disposal of leech provided by the Pharmacy Department.
- 1.2 *Hirudo medicinalis* (European medicinal leech) is the leech mostly used in plastic and reconstructive surgery. The leech bite causes prolonged localised bleeding and therefore gives the graft time to re-establish its own circulation. This normally takes three to five days.

2 Scope

- 2.1 All medical, nursing and pharmacy staff who are involved with the procurement, prescribing, supply, storage, administration and disposal of leeches.

3 Definitions

TERM	DEFINITION
MO&MSG	Medicine Optimisation & Medicines Safety Group

4 Roles and Responsibilities

4.1 Role & Responsibilities of Individuals within the Trust

Duties Are:

- Deputy Chief pharmacist/ Head of Pharmacy to oversee the implementation;
- Pharmacists and pharmacy technicians to ensure adherence to the policy and raise any issues as appropriate;
- Nurses are to ensure adherence to policy;
- Clinicians are to ensure adherence to policy;
- Antimicrobial pharmacist to inform policy author of any changes to antimicrobial prophylaxis during leech therapy.

5 Procurement and Storage

- 5.1 The Pharmacy Department obtains leeches from Biopharm, which is an international leech company based in South Wales, UK. They cultivate the majority of leeches used in modern medicine and are one of the first leech farms of its kind.
- 5.2 Leeches are kept in a locked refrigerator in the store room on Mayflower ward. This is the only ward in the hospital to keep a stock of leeches. This stock is used for any patients prescribed leech therapy on Mayflower ward or any of the other wards in the hospital.
- 5.3 The duty nurse in charge will be responsible for the key to the locked refrigerator. In the event of the loss of the fridge key, there are two spare keys, one located in the sister's office on Mayflower ward and one in pharmacy. If the original or spare key is lost a Datix report should be completed.
- 5.4 One container of leeches (holding approximately 20 leeches) is kept in the pharmacy department. This emergency supply is to be used if Mayflower ward runs out of leeches.
- 5.5 Leeches tend to survive up to several months without food, as long as they are kept in the refrigerator. In the event of a fridge failure, the leeches can be transferred and kept in a cool area at a temperature below 15°C or as cool as possible. It is important to avoid heat, including direct sunlight.
- 5.6 The leeches are normally kept in containers that contain HirudoMix/Gel or water (sterile or distilled water which has had 0.5g per litre of Hirudosalt added). Hirudosalt is a specially formulated recipe for making up water ideally suited for maintenance of the medical leech *Hirudo medicinalis*. Chlorinated tap water should be avoided.
- 5.7 The Pharmacy Department need to specifically request HirudoMix/Gel when placing orders for leech.
- 5.8 For long term storage the leeches need to be checked regularly and the HirudoMix/Gel or water/Hirudosalt mixture should be replaced if it appears contaminated with faeces (normally a brown colour). This should be checked daily by the designated individual.
- 5.9 If there is an increase in the use of leeches or there is shortage on the ward, the ward nurse will contact pharmacy to order more in so that an adequate level of stock is maintained at all times.
- 5.10 Orders for leeches from Biopharm need to be placed before 2pm noon Monday - Thursday for pharmacy to receive the request the following day. Only in exceptional circumstances will orders be placed on a Friday for delivery on Saturday. On Sundays and Bank Holidays the on-call pharmacist will need to be contacted.
- 5.11 The leeches are booked into the JAC system in pharmacy, and booked out to Mayflower ward as stock.

6.0 Transfer of Leeches

- 6.1 Transfer of leeches from Mayflower ward occurs following a verbal request from the nurse in charge of the requesting ward. It is good practice to see the drug chart, which should be cross checked when the nurse or any authorised person arrives to collect the leeches.
- 6.2 On Mayflower ward, there is a chart attached on the refrigerator for nurses from other wards to sign when leeches are taken (Appendix 1). This allows Mayflower ward to monitor the number of leeches being used and when to order more.
- 6.3 The prescription chart does not need to come to pharmacy.
- 6.4 Leeches can be transferred from one ward to another using a small container such as a denture pot. It is important the leeches are kept as cool as possible, and some of the HirudoMix/ Gel or water/Hirudosalt mixture should be added to the denture pot, if this is being used to transfer the leech.
- 6.5 A lid is essential, and no more than 50 leeches should go into a 2.5litre container.

7.0 Prescribing of Leeches

- 7.1 Leeches are prescribed on the 'when required' section of the drug chart. The prescriber does not need to state the quantity of leeches to use, however an adequate number should be applied depending on how much venous congestion there is. The quantity will depend on the clinical judgement of the registered nurse. Normally 1-4 leeches are applied at the same time.
- 7.2 It is important that a true venous congestion is diagnosed before using leeches since they will not be helpful in cases of insufficient arterial inflow.
- 7.3 The patient should be prescribed antimicrobial cover against *Aeromonas hydrophilia*. *Aeromonas hydrophilia* is an endosymbiotic bacterium that resides in the digestive tract of the leech and it is essential for the leech to grow. However it has been implicated as a pathogen in exceptional circumstances and needs to be treated with antibiotics.
- 7.4 Gentamicin once daily is used for prophylaxis (refer to Microguide- Antimicrobial prescribing) against *Aeromonas hydrophilia*. This is prescribed together with leech treatment and can be stopped once the leeches are removed (provided the patient has had their minimum 48 hours (i.e. 2 doses) of treatment. Gentamicin must not be used for more than 5 days.

8.0 Administration of Leeches

- 8.1 The leech needs to be administered by a registered nurse in adequate numbers to the general area of maximal congestion.
- 8.2 The nurse should sign the prescription chart following application of the leech(es) to the area of venous congestion.
- 8.3 The following steps should be followed:
 - Clean patient's skin thoroughly with soap and water and then rinse cleaned areas with plain water.
 - Dampen a square of gauze with water and cut a 1cm hole in the middle. Place the gauze on the patient with the hole in close contact with the area to be treated. This will form a barrier to prevent the leech from wandering.
 - Steer the head of the leech to the hole in the gauze. Usually the head can be recognised by its searching movements. If the leech is reluctant to bite, make a small needle prick on the skin to produce a tiny droplet of blood (which should result in enthusiastic attachment).
 - Once the leech is attached, it will likely remain safely in place until fully distended. The gauze square can be removed and used elsewhere without disturbing the animal. However, it is important that the site be checked continuously to ensure the leech hasn't moved.
 - Leeches usually stay attached at a truly congested site for 30 to 60 minutes. If the blood supply is poor (in which case the diagnosis of venous congestion is probably wrong), they may detach prematurely and attempt to wander to another site, for example, normal skin.
 - Leech movement can be prevented by simple physical persuasion, but the best ways to avoid wandering is to pre-cut holes in a sheet of "Op-Site" dressing and apply this to the treatment area.
 - The bite of a leech is painless due to its own anaesthetic. The leech will gorge itself until it has had its fill and then spontaneously detach. After the leech detaches, the wound site will bleed for, on average, ten hours.

9 Disposal of Leeches

- 9.1 The same leech must not be used for more than one patient.
- 9.2 Used leeches are disposed of by placing them in 70% alcohol (Industrial Methylated Spirit (IMS) 70% v/v is used on the ward) for 5 minutes before discarding into the sharps bin for incineration.

10 Monitoring and Audit

- 10.1 Each document must outline the Trust's process of monitoring compliance with, and the effectiveness of the document's main points.

Aspect of compliance or effectiveness being monitored	Monitoring Method	Individual department responsible for the monitoring	Frequency of the monitoring activity	Group / Committee / forum which will receive the findings/monitoring report	Committee / individual responsible for ensuring the actions are completed
Prescribing of leeches	Screening of drug charts	Pharmacy	Ongoing	Consultants	Clinical Pharmacist

11 Implementation and Communication

- 11.1 Once professionally approved and ratified by DRAG this policy will be placed on the Trust's intranet and highlighted via the Trust's staff newsletter.

12 Equality Impact Assessment

- 13.1 The Trust is committed to the provision of a service that is fair, accessible and meets the needs of all individuals.
(Refer to Appendix 2)

13 References

Biopharm Leeches (<http://www.biopharm-leeches.com>)

Appendix 2: Preliminary Equality Analysis

This assessment relates to: Use of Leech in Plastic and Reconstructive Surgery / 10079

A change in a service to patients		A change to an existing policy	X	A change to the way staff work	
A new policy		Something else (please give details)			
Questions			Answers		
1. What are you proposing to change?			No previous guideline on leech therapy		
2. Why are you making this change? (What will the change achieve?)			To help clinicians, nursing and pharmacy staff with leech therapy		
3. Who benefits from this change and how?			Clinicians, nursing and pharmacy staff		
4. Is anyone likely to suffer any negative impact as a result of this change? If no, please record reasons here and sign and date this assessment. If yes, please complete a full EIA.			No, leech therapy already used in the hospital without any problem		
5. a) Will you be undertaking any consultation as part of this change? b) If so, with whom?			Yes Refer to pages 1 & 2		

Preliminary analysis completed by:

Name	Sayra Khatun	Job Title	Lead Clinical Pharmacist	Date	29.11.19
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