Palliative Care in partnership

RPMG

Guidance for the Management of symptoms in adults with Heart Failure at the end of life

This booklet provides guidance to healthcare professionals on managing commonly experienced symptoms for heart failure patients in the last weeks to days of life.

British Heart Foundation Northern Ireland

Management of end stage Heart Failure Symptoms

This guidance can be used for patients who are still able to take oral **(PO)** medications but also lists other routes of administration such as sublingual **(SL)** intravenous **(IV)**, subcutaneous **(SC)** injection and continuous subcutaneous infusion **(CSCI)** via syringe pump over 24 hours.

Introduction

This guidance has been developed for healthcare professionals managing heart failure symptoms when end of life is expected within weeks to days. For these patients it would likely be inappropriate to monitor bloods at this stage of a patient's illness. However due to the trajectory of heart failure it is advised to use clinical judgement to monitor bloods or observations should palliative stage become prolonged or greater than predicted.

When it is recognised that a person may be entering end of life:

- Determine if the patient has an **Implantable Cardioverter Defibrillator (ICD)** and refer to deactivation guidance section below.
- Review and stop any prescribed medication in the last weeks to days of life not providing symptomatic benefit or which may cause harm.
- Discuss and agree any medication changes with the patient and those important to them.
- Ensure onward **referral** to appropriate palliative care support, hospice care and any other local available support services.
- The needs of the patient may be physical, psychological, social, and spiritual or a combination of all of these.
- **Ensure anticipatory medicines have been prescribed by the subcutaneous route SC, see page 12.**

ICD (Implantable Cardioverter Defibrillator): Deactivation Advice

- Shock therapy at end of life is inappropriate and distressing to both patient and family.
- If the patient has an **Implantable Cardioverter Defibrillator (ICD)** discuss with primary consultant cardiologist or consultant on call in regards to deactivating shock therapy.
- While the need for **ICD** deactivation should be discussed early this should be reviewed when planning for end of life care.
- Planned deactivation of an **ICD** can be facilitated at device review clinic if the patient is well enough to attend hospital by contacting your local trust cardiac investigation unit.
- This planned service is available Monday—Friday and during normal working hours.

For emergency **ICD** community deactivation, regardless of location and where adequate planning has not occurred, Belfast Health & Social Care Trust cardiac investigations team should be contacted for further advice.

**All emergency end of life community deactivations are carried out by the Belfast Health & Social Trust within 48 hours.*

RVH device clinic: 02890 633179 **BCH device clinic:** 02895 040403
Out of hours CCU RVH: 02896 150824 or 02896 150826

Booklet Contents

The contents of this guidance may differ from other published guidelines, but have been selected to reflect expert opinion, evidence and safety for patients at end of life.

- Users are advised to monitor patients carefully for side effects and response to treatment. Responsibility for the use of these recommendations lies with the healthcare professionals managing each patient.
- Always start with the lowest dose in the range specified in this guide.
- Consider non-pharmacological management of palliative symptoms.

Heart Failure Specialist Nursing & Palliative Care Teams

- Should you require further advice please contact your local Heart Failure service.
- If the patient is known to Heart Failure service, the patient should hold contact numbers for the local heart failure team or alternatively contact local HSC trust.
- For further palliative care advice please contact the team through the individual hospitals local palliative care team or alternatively contact local hospice in your area.

Abbreviations:

(CSCI) continuous subcutaneous infusion
(DOAC) Direct Oral Anticoagulant
(ICD) Implantable Cardioverter Defibrillator
(IV) Intravenous
(OD) Once daily
(PO) Oral medicine
(PRN) As required
(QDS) Four times a day
(SC) Subcutaneous
(SL) Sublingual
(TDS) Three times a daily

Breathlessness

Intermittent : tolerating PO medicine

Consider **Oramorph** 1mg **PO** 2-4 hourly **PRN**

Dyspnoea associated with anxiety, consider **Lorazepam** 500 micrograms **SL** 8 hourly **PRN**

Consider **Oxygen** 1-2 litre/min via nasal specs **PRN** if the patient finds this beneficial for symptom management

Intermittent : Unable to tolerate PO medicine

Consider **Morphine Sulfate** 1mg-2mg **SC** 4hrly **PRN**

If 2 or more doses required in 24 hours consider **Morphine Sulfate** 5mg via **CSCI** and 1mg-2mg **SC** 4hrly **PRN**

Persistent : tolerating PO medicine

Consider regular **Oramorph** 2mg **PO QDS** and 2-4 hourly **PRN**

Dyspnoea associated with anxiety, consider **Lorazepam** 500 micrograms **SL** 8hrly and if patient tolerating and symptoms persist, consider increasing to 1mg

alternatively consider **Diazepam** 2mg-5mg **PO** 4-6 hourly

Persistent : Unable to tolerate PO medicines

Consider **Morphine Sulfate** 5mg via **CSCI** and 1mg-2mg **SC** 4hrly **PRN**

If patient is breathless AND anxious, consider:

Midazolam 5mg-10mg via **CSCI** over 24 hours and **Midazolam** 2mg **SC PRN**

Patients with Severe Chronic Kidney Disease (**eGFR <30)** are more susceptible to drug side effects and toxicity, therefore:

1. Consider starting all medications at lowest dose and increase dosing frequency.
2. For **Opioids** consider **Oxycodone** as first line and use conversion table on **page 14** for further guidance.
3. **Alfentanil** may be appropriate in some instances, please seek specialist advice prior to initiating.

Remember: For patients commencing opioid medications, consider prescribing regular and/or **PRN** anti-emetic and laxative if appropriate.

Breathlessness & Oedema: Diuretic Therapy

Tolerating PO medicine

Consider up titrating oral loop diuretic
(e.g.. **Bumetanide** 1mg increments or **Furosemide** 40mg increments)

↓

Consider **Thiazide/ thiazide-like** diuretic such as **Bendroflumethiazide** 2.5mg – 5mg **PO OD**

or

Metolazone 2.5mg **PO** weekly initially, frequency can be increased to 2.5mg alternate days

↓

If not already on, consider adding or increasing **Spironolactone** 25mg **PO** alternate days and if tolerated increase to 25mg **OD** for resistant oedema and breathlessness

It would likely be inappropriate to monitor bloods at this stage of a patient's illness.

Unable to tolerate PO medicines

Patient unable to swallow oral medicines or persistent symptoms.

IV access present and available

Consider **IV Furosemide** bolus using previous **PO** dose as starting dose

Review after 24 hours and titrate dose if required until symptoms controlled
(e.g. **Furosemide** 80mg **PO** to **Furosemide** 80mg **IV**)

IV access lost or inappropriate

Consider administering **Furosemide** by **CSCI** syringe pump over 24hours.

Use previous **PO/IV** 24 hour requirement as starting dose for **CSCI** syringe pump and titrate dose as per clinical need

(e.g. **Furosemide** 80mg **IV/PO** to **Furosemide** 80mg via **CSCI**)

Review after 24 hours and titrate dose if required until symptoms controlled

Furosemide should **not** be added to or mixed with other drugs in a **CSCI**

For further information on the use of **SC Furosemide** please see **page 13**

Always refer to local trust policy and procedures for use and management of **CSCI**

Recommended Infusion Sites:

- Upper Chest and/or upper anterior of arms
  (*sites are often restricted in heart failure patients due to probable oedema*)
- Avoid bony prominences and areas where tissue is damaged, thus decreasing absorption

Nausea

Intermittent: tolerating PO medicine

Consider antiemetic

Metoclopramide 10mgs 6-8 hourly max **TID PO PRN**

Consider starting a **CSCI** syringe pump with antiemetic medication

E.g. **Metoclopramide** 30mg/24 hours

Co-prescribe **Levomepromazine** 2.5mg—5mg **SC PRN** 4-6 hourly

*Note **Metoclopramide** and **Cyclizine** should **not** be co-prescribed together.*
*Where possible **Cyclizine** should be avoided in Heart Failure patients.*

Review every 24 hours

Additional Advice:

Ondansetron may be considered as an alternative to the above medications especially in patients with Parkinson's Disease where **Metoclopramide** and **Levomepromazine** may cause extrapyramidal side effects.

Ondansetron can be prescribed 4mg **SC** 4-6hrly **PRN** or via **CSCI** 8mg-24mg over 24 hours.

Ondansetron however is very constipating and this should be considered before prescribing.

Anxiety, delirium and agitation

Assess the patient first to exclude potentially reversible and treatable causes such as infection, urinary retention, severe constipation or drug withdrawal (e.g. nicotine).

Intermittent: tolerating PO medicine

Consider

Lorazepam 500micrograms **SL or Diazepam** 2mg **PO** PRN **4-6** hourly

Persistent: tolerating PO medicines

If symptoms persist consider **Diazepam** 2mg-5mg **PO BD** or **TID**

Intermittent: unable to take PO medicine

Consider **Midazolam** 2mg-5mg **SC** 2-4 hourly **PRN**

If two or more **PRN** doses required in 24 hours consider prescribing regular **Midazolam** 2mg-5mg by **CSCI** over 24 hours

Persistent : Unable to tolerate PO medicines

Consider **Midazolam** 2mg—5mg by **CSCI** over 24 hours

AND Midazolam 2mg—5mg **SC PRN**

Re-assess regularly. If symptoms persist add total **SC PRN** dose over 24 hours to current syringe pump dose (increase breakthrough dose accordingly)

If poor response to increasing dose of **Midazolam** reassess cause of agitation.

Consider stat dose of:

Levomepromazine 5mg-15mg **SC**

or

Haloperidol 500 micrograms-1mg **SC**

Assess response and if effective add:

Levomepromazine 10mg—25mg

or

Haloperidol 1mg-3mg by **CSCI** syringe pump over 24 hours

(Caution: Haloperidol is contraindicated with Metoclopramide)

Pruritus

Simple measures to aid relief of itch

- Apply moisturiser liberally and often to keep the skin moisturised.
- Simple creams and ointments can be tried, as well as topical corticosteroids.
- Encourage the patient to use warm tepid water for bathing, and to bath less often.
- Consider adding something soothing to the bath, such as sodium bicarbonate or colloidal oatmeal.
- Avoid soaps, shower gels and bubble baths, which dry skin out by washing away natural oils.
- Avoid irritating fabrics. Where possible, cotton and silk can be cooler and less irritating.

First Line

Apply after washing in the morning and again in the evening;

Aqueous cream +/- 1% menthol

Oily calamine lotion +/- 0.5% phenol

Avoid if patients skin is broken.

Second Line

Consider **Chlorphenamine** 4mg **QDS PRN**

(max dose 16mgs in 24 hours)

Often pruritus does not resolve with antihistamine therapy.

Please seek specialist advice if necessary and refer to the "Palliative Adult Network Guidelines" Chapter 12 or https://book.pallcare.info

Noisy Respiratory Secretions

Review the use of intravenous or subcutaneous fluids and decrease or discontinue if appropriate.

Intermittent

Glycopyrronium 200 micrograms **SC** 4-6 hourly (max dose 1.2mg/24 hours) **PRN**

Persistent

If two or more **PRN** doses are required in 24 hours consider

Glycopyrronium 600 micrograms by **CSCI** syringe pump over 24 hours

AND

Glycopyrronium 200 micrograms **SC** 4-6 hourly **PRN** for breakthrough symptoms

If symptoms persist, increase total 24 hour dose to maximum of 1.2mg/24 hours

Review after 24 hours.

If symptoms persist consider changing to:

Hyoscine Butylbromide 120mg by **CSCI** syringe pump over 24 hours

or

Hyoscine Hydrobromide 2.4mg* by **CSCI** syringe pump over 24 hours

*** Hyoscine Hydrobromide** may cause sedation and paradoxical agitation

Medication Review Table

Consider stopping all non-essential medications for patients in the last **weeks** to **days** of life:

Seek advice of heart failure service/cardiology team if necessary.

For renal or hepatic patients seek advice for medicine choice & dose adjustment as required.

Consider stopping **Medication with only long term benefit**	**Consider stopping** **Medication with medium term benefit**	**Consider stopping** **Medication with short term benefit**
Statins	Angiotension Converting Enzyme inhibitors / Angiotensin Receptor Blockers	Loop & thiazide diuretics
Aspirin	Beta-blockers	Digoxin/beta-blockers for AF
Digoxin in patients in sinus rhythm	Spironolactone / Eplerenone	
Anti-anginals e.g. nitrates, nicorandil. **If no recent chest pain or patient hypotensive.**	Warfarin/Direct Oral Anticoagulant **(DOAC):** **Seek advice for mechanical valve or treatment for Pulmonary Embolism.**	
	Clopidogrel, Ticagrelor or other antiplatelet	

For further advice on deprescribing, please consult the STOPPFrail Screening Tool Table 1:

https://pure.qub.ac.uk/portal/files/123615482/STOPPFrail_Consensus_Validation_Accepted_Manuscript.pdf

Pack size of oral medicines referenced in the policy

Medicine	Strength	Pack size
Bendroflumethiazide	2.5mg tablets	28 tablets
Chlorphenamine	4mg tablets	28 tablets
Diazepam	2mg or 5mg tablets	28 tablets
Furosemide	40mg tablets	28 tablets
Levompromazine	6mg tablets	10 tablets
Lorazepam Annotate 'Genus' brand	1mg tablets	28 tablets
Metoclopramide	10mg tablets	28 tablets
Metolazone (unlicensed medication) See BNF for further information	5mg tablets	28 tablets Available in packs of 50/100
Ondansetron	4mg or 8mg	28 tablets
Oramorph liquid	10mg/5ml liquid	100ml
Spironolactone	25mg tablets	28 tablets

Injectable

Medicine	Strength	Pack Size
Furosemide	10mg/ml in 2ml or 5ml injection	10 ampoules
Haloperidol	5mg/ml injection	10 ampoules
Hyoscine Butylbromide	20mg/ml injection	10 ampoules
Levomepromazine	25mg/ml injection	10 ampoules
Ondansetron	2mg/ml in 2ml or 4ml injection	5 ampoules

Anticipatory Prescribing

Prescribing medicines in anticipation of symptoms that may develop during the last days of life is known as anticipatory prescribing. Having these medicines prescribed and available to the patient can reduce delays in treating symptoms as they develop.

Patients in the last days of life are unlikely to be able to swallow oral medicines and therefore the subcutaneous route is preferred.

Anticipatory medicines should be considered when ICD deactivation occurs if they are not already prescribed.

Below is a list of anticipatory medicines that should be considered to treat the common symptoms that may occur during end of life care in heart failure patients.

The drugs prescribed must however be appropriate to the individual patient.

Symptom	Medicine	SC stat PRN dose	Strength	Pack size
Breathlessness	Morphine*	1mg-2mg every 4 hours PRN	10mg/ml injection	10 ampoules
Pain	Morphine*	2mg-5mg every 2-4 hours PRN	10mg/ml injection	10 ampoules
Anxiety, delirium & agitation	Midazolam	2mg-5mg every 2-4 hours PRN	10mg/2ml injec-tion	10 ampoules
Noisy respiratory secretions	Glycopyrronium	200micrograms every 4-6 hours PRN	200micrograms/ ml injection	10 ampoules
Nausea	Metoclopramide	10mg every 6-8 hours PRN (max TDS)	10mg/2ml injection	10 ampoules

*** Consider oxycodone as first line opioid for those patients with eGFR<30 at equivalent doses using the strength 10mg/ml (pack size =5 ampoules).**

Subcutaneous Furosemide

Furosemide via CSCI

Consideration of the use of subcutaneous **Furosemide** may be appropriate for patients at palliative stage of heart failure and in the last days to weeks of life who wish to remain at home.

These patients may now be unable to take their oral diuretics or their oral diuretics may now be less effective. It would likely be inappropriate to monitor bloods at this stage of a patient's illness.

- A recent study has suggested that subcutaneous **Furosemide** has a geometric mean absolute bioavailability of 99.6% and onset of action is 30 minutes.
- Due to the maximum volume of a **CSCI** being 24ml, the maximum dose of subcutaneous **Furosemide** that can be given in one **CSCI** over 24 hours is **240mg** (10mg/ml).
- Subcutaneous **Furosemide** should not be mixed with any other medications in a syringe pump. **Furosemide** injection is alkaline and should not be mixed or diluted with glucose solutions or other acidic fluids.
- A diluent may not be necessary, but **Furosemide** can be diluted with sodium chloride 0.9%. If a diluent is required, sodium chloride 0.9% (10ml amps) should be co-prescribed.
- Monitor injection site for signs of reaction and renew as necessary following local trust policy and procedures for the use and management of **CSCI.**

Dosing guidance

- Use previous **PO/IV** 24 hour Furosemide requirement as starting dose for **CSCI** syringe pump and titrate dose as per clinical need

(e.g. **Furosemide** 80mg **IV or PO to Furosemide** 80mg via **CSCI**)

Simple measures when caring for heart failure patients entering the final weeks to days of life:

- Positioning - the most comfortable position is usually sitting upright with support.
- Elevate the patients legs.
- Ensure profiling bed available.
- Keep the room cool.
- Moving air from a fan (hand-held or stationary) or open window as tolerated helps provide psychological relief.
- Careful consideration to oral hygiene as mouth breathing dries the mouth and oxygen (unless humidified) will dry the mouth.
- Consider insertion of self retaining catheter (SRC) especially if on high dose diuretics.
- Where possible stay with patients, this can help alleviate anxiety and agitation.

Opioid Conversion Table

Refer also to HSC Guidance "Northern Ireland guidelines on converting doses of opioid analgesics for adult use 2018"

Table 1. Opioid Conversions

PO (Oral) to PO
Oral Morphine to **Oral Oxycodone**—Divide by 2 Eg. 30mg Oral Morphine = 15mg Oral Oxycodone
Oral Codeine/Dihydrocodeine/Tramadol to **Oral Morphine**—Divide by 10 Eg. 240mg **Oral Codeine** = 24mg **Oral Morphine**
PO to SC (Subcutaneous)
Oral Morphine to **SC Morphine**—Divide by 2 Eg. 30mg **Oral Morphine** =15mg **SC Morphine**
Oral Morphine to **SC Diamorphine**—Divide by 3 Eg. 30mg **Oral Morphine** = 10mg **SC Diamorphine**
Oral Oxycodone to **SC Oxycodone** - Divide by 2 Eg. **10mg Oxycodone** = 5mg **SC Oxycodone**
Oral Morphine to **SC Alfentanil** - Divide by 30 Eg. 30mg **Oral Morphine** = 1mg **SC Alfentanil** **Alfentanil** may be used in patients with severe renal impairment; seek specialist advice when necessary
SC (Subcutaneous) to SC Morphine to SC
Diamorphine - Divide by 1.5 Eg. 15mg **SC Morphine** = 10mgs **SC Diamorphine**
SC Morphine to **SC Oxycodone**—Divide by 2 Eg. 20mg **SC Morphine** = 10mg **SC Oxycodone** Note this may differ from other available conversions

Table 2. Transdermal Patch Conversions

Fentanyl Patch eg. Mezolar, Durogesic Replace patch every 3 DAYS	
Fentanyl Patch (micrograms/hr)	Oral Morphine Dose over 24 hours (mg)
12	30-59
25	60-89
37	90-119
50	120-149
62	150-179
75	180-239
100	240-299
125	300-359
150	360-419
175	420-479
200	480-539
Buprenorphine Patch eg. Butec. BuTrans, Replace every 7DAYS	
Patch Strength (micrograms per hr)	Oral Morphine Dose over 24 hours (mg)
5	10—12
10	20—24
20	40—48

References

This guidance 'Management of symptoms in adults with Heart Failure at the end of life' has been coproduced and developed through a collaborative network with representation from each HSC Trust.

Utilising expert opinion from Northern Ireland Regional Heart Failure teams, Consultant Cardiologists, Palliative Care, Clinical Physiology, Primary Care & British Heart Foundation Northern Ireland.

- Dr Miriam Johnston, Professor of Palliative Medicine, Dr Tim Hougton, Consultant Cardiologist & Janet Raw Heart Failure Nurse (2012) Guidance for the Prescribing of Subcutaneous Furosemide by Bolus or Syringe Driver for Heart Failure. NHS Bassetlaw & Doncaster. York Teaching Hospital.

  Available: http://medicinesmanagement.doncasterccg.nhs.uk/wp-content/uploads/2016/02/Palliative-Care-guidance-furosemide-V2.-0.doc

- Peter Armstrong & Dr Kiran Kaur (2018) on behalf of the Regional Palliative Care Medicine Group (RPMG) Management of symptoms in adults in the last days.

  Available: http://www.professionalpalliativehub.com/sites/default/files/RPMG%20End%20of%20Life%20Guidance%202018_0.pdf

- Domenic A. Pieter Muntendam, Rene L. Myers, Jozine M. ter Maaten, Mark E. Sale, Rudolf A. de Boer, and Bertram Pitt. (2018) Subcutaneous Furosemide in Heart Failure.

  Pharmacokinetic Characteristics of a Newly Buffered Solution. JACC: Basic to Translational Science, Volume 3, Issue 1, Pages 35-37.

  Available: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6059009/

- NICE guideline [NG106] (2018) Chronic heart failure in adults: diagnosis and management

  Available: https://www.nice.org.uk/guidance/ng106

- NICE guideline [NG31] (2015) Care of dying adults in the last days of life.

  Available: https://www.nice.org.uk/guidance/ng31

Guidance completed September 2019 - Review date September 2022