Guideline for the use of Clonidine for Sedation in Adult Intensive Care

This guidance does not override the individual responsibility of health professionals to make appropriate decision according to the circumstances of the individual patient in consultation with the patient and/or carer. Health care professionals must be prepared to justify any deviation from this guidance.

INTRODUCTION

This guideline covers the prescribing of clonidine for critically ill adult patients

THIS GUIDELINE IS FOR USE BY THE FOLLOWING STAFF GROUPS:

All qualified healthcare professionals involved in prescribing or administering clonidine for critically ill adult patients.

Lead Clinician(s)

Keith Hinton	Lead Clinical Pharmacist Critical Care Worcestershire Acute Hospitals
Approved by Accountable Director on:	21st April 2023
Approved by Theatres, Anaesthetics, Critical Care and Sterile Services Directorate Governance Meeting on:	17th May 2023
Review Date: This is the most current document and is to be used until a revised version is available:	17th May 2026

Key amendments to this guideline

Date	Amendment	By:
12.11.2008	Approved by Medicines Safety Committee	
20.12.2010	Guideline reviewed – no amendments made	K Hinton
17.10.2012	Guideline reviewed – no amendments made	K Hinton
23.03.2015	Guideline reviewed – no amendments made	K Hinton
August 2017	Document extended for 6 months in line with TMC approval	TMC
December 2017	Sentence added in at the request of the Coroner	
December 2017	Document extended for 3 months as per TLG recommendation	TLG
January 4, 2018	Guideline reviewed, no amendments made	K Hinton
Jan 2020	Guideline reviewed with no changes. Approved by Tania Carruthers on behalf of MSC	K Hinton/ MSC
April 2023	Document approved with no changes	K Hinton/ TACCSS, noted at SCSD Governance and MSC

Guideline for the use of Clonidine for Sedation in Adult Intensive Care

Introduction

This guideline covers the prescribing of clonidine for critically ill adult patients

Details of Guideline

Indication

- Additional sedative agent when adequate sedation cannot be maintained using standard drugs according to sedation protocol. In addition to sedation, clonidine has opioid sparing analgesic properties.
- To aid weaning from conventional sedation when agitation secondary to alcohol and/or nicotine withdrawal reactions are problematic.

Background Information

- Clonidine is a centrally acting alpha$_2$-agonist, which reduces blood pressure and slows heart rate by reducing sympathetic stimulation. Analgesia occurs as a result of stimulation of opiate receptors centrally and peripherally.
- It may be used for sedation, withdrawal reactions and hypertension.
- Half-life has been variably reported between 6 to 24 hours. Fifty per cent is excreted renally.
- An alternative method of administration is 150micrograms by slow IV injection or PO/NG three times a day.

Dosage

Bolus doses

- 50-150micrograms 8-hourly slow IV (over 15 minutes) or PO/NG (if absorbing)

Continuous infusion

- Treatment may be started with a bolus dose of 10mcg which maybe repeated until desired effect is reached.
- Usual dose by IV infusion is 0.5-1microgram/kg/hour although doses up to 2micrograms/kg/hour may be used if necessary (although the dose is often limited by reduction in blood pressure). Start with the higher dose and reduce as sedative effect is achieved.

Administration

- Concentration in syringe 750 micrograms in 50ml sodium chloride 0.9% or glucose 5% (resulting in 15micrograms/ml). See below for withdrawal of clonidine.
- Give centrally or peripherally.
- Little compatibility data available. Use dedicated line.

Side – effects

- May cause hypotension and bradycardia. As clonidine is a negative chronotrope, caution should be used in patients with low cardiac output or impaired ventricular function.
- Accumulation in renal impairment. Adjust dose according to response.
- Dry mouth
- Headache
- Nausea and vomiting
- Constipation

Withdrawal of clonidine

- Sudden withdrawal of clonidine may result in agitation, sweating and hypertension.
- Reduce dose gradually, rate will depend on duration of infusion.
- Withdrawal should usually be over several hours. If the patient has been on clonidine for several days then reduction over 36 hours may be required.
- For low rates of infusion when weaning clonidine, less concentrated preparations may be used

Conversion to oral clonidine from intravenous

- Calculate the total dose of IV clonidine given over 24 hours. The bioavailability is the same.
- Divide this total daily dose into three doses to be given orally up to a maximum of 200micrograms tds.
- Doses must be in increments of 25micrograms and reduced gradually according to patient response.

References

1. Bohrer H et al. Clonidine as a Sedative Adjunct in Intensive Care. Intensive Care Medicine 1990; 16: 265-266
2. The British Medical Association and the Royal Pharmaceutical Society of Great Britain. British National Formulary, No. 55: March 2008. The Bath Press, Bath.
3. Guidance from Royal Brompton and Harefield NHS Trust
4. Borthwick, M. et al. Detection, prevention and treatment of delirium in critically ill patients. June 2006. UKCPA
5. Boehring Ingelheim Ltd. Catapres Ampoules (August 2007) www.emc.medicines.org.uk/emc/industry/default.asp?page=displaydoc.asp&documentid=283. Accessed 16.1.2008
6. Tryba M, Kulka PJ. Critical Care Pharmacotherapy: a review Drugs 1993;45:338-352
7. Ip Yam PC et al. Clonidine in the treatment of alcohol withdrawal in the intensive care unit. Br J Anesthes 1992;68:106-108

CONTRIBUTION LIST

Key individuals involved in developing the document

Name	Designation
Keith Hinton	Lead Clinical Pharmacist Critical Care WAHT

Circulated to the following individuals for comments

Name	Designation
Dr Tracey Leach	Consultant Anaesthetist AH
Dr Jeremy Thomas	Consultant Anaesthetist WRH
Dr Cliff Dwenger	Consultant Anaesthetist AH
Dr Steve Haynes	Consultant Anaesthetist WRH
Dr Gavin Nichol	Consultant Anaesthetist WRH
Dr Stephen Digby	Consultant Anaesthetist WRH

Circulated to the following CD's/Heads of dept for comments from their directorates / departments

Name	Directorate / Department
Dr Gareth Sellors	Consultant Anaesthetist WRH

Circulated to the chair of the following committee's / groups for comments

Name	Committee / Group
Dr Steve Graystone	Chair, Medicines Safety Committee

Monitoring Tool

This should include realistic goals, timeframes and measurable outcomes.

How will monitoring be carried out?

Who will monitor compliance with the guideline?

Page/ Section of Key Document	Key control:	Checks to be carried out to confirm compliance with the policy:	How often the check will be carried out:	Responsible for carrying out the check:	Results of check reported to: *(Responsible for also ensuring actions are developed to address any areas of non-compliance)*	Frequency of reporting:
	WHAT?	**HOW?**	**WHEN?**	**WHO?**	**WHERE?**	**WHEN?**
2	IV Infusion rate should not exceed 2micrograms/kg/hour	Prospective review	Daily pharmacy review	ITU Pharmacists	Keith Hinton	Prospectively
3	On withdrawal, IV infusion rates should be reduced slowly over at least several hours	Prospective review	Daily pharmacy review	ITU Pharmacists	Keith Hinton	Prospectively

Supporting Document 1 - Equality Impact Assessment Tool

Herefordshire & Worcestershire STP - Equality Impact Assessment (EIA) Form
Please read EIA guidelines when completing this form

Section 1 - Name of Organisation (please tick)

Herefordshire & Worcestershire STP		Herefordshire Council		Herefordshire CCG	
Worcestershire Acute Hospitals NHS Trust	x	Worcestershire County Council		Worcestershire CCGs	
Worcestershire Health and Care NHS Trust		Wye Valley NHS Trust		Other (please state)	

Name of Lead for Activity	

Details of individuals completing this assessment	**Name**	**Job title**	**e-mail contact**
	Keith Hinton	**Clinical team lead Pharmacist**	**keith.hinton1@nhs.net**
Date assessment completed	**15.04.2023**		

Section 2

Activity being assessed (e.g. policy/procedure, document, service redesign, policy, strategy etc.)	**Title:** Guideline for the use of Clonidine for Sedation in Adult Intensive Care				
What is the aim, purpose and/or intended outcomes of this Activity?	As per title				
Who will be affected by the development & implementation of	X X	Service User Patient	X ❑	Staff Communities	

this activity?	❑ ❑	Carers Visitors	❑ ❑	Other _____
Is this:	X Review of an existing activity ❑ New activity ❑ Planning to withdraw or reduce a service, activity or presence?			
What information and evidence have you reviewed to help inform this assessment? (Please name sources, eg demographic information for patients / services / staff groups affected, complaints etc.	See references			
Summary of engagement or consultation undertaken (e.g. who and how have you engaged with, or why do you believe this is not required)	Via MSC			
Summary of relevant findings				

Section 3

Please consider the potential impact of this activity (during development & implementation) on each of the equality groups outlined below. **Please tick one or more impact box below for each Equality Group and explain your rationale**. Please note it is possible for the potential impact to be both positive and negative within the same equality group and this should be recorded. Remember to consider the impact on e.g. staff, public, patients, carers etc. in these equality groups.

Equality Group	Potential positive impact	Potential neutral impact	Potential negative impact	Please explain your reasons for any potential positive, neutral or negative impact identified
Age		X		
Disability		X		
Gender Reassignment		X		
Marriage & Civil Partnerships		X		
Pregnancy & Maternity		X		
Race including Traveling Communities		X		
Religion & Belief		X		

Equality Group	Potential positive impact	Potential neutral impact	Potential negative impact	Please explain your reasons for any potential positive, neutral or negative impact identified
Sex		X		
Sexual Orientation		X		
Other Vulnerable and Disadvantaged Groups (e.g. carers; care leavers; homeless; Social/Economic deprivation, travelling communities etc.)		x		
Health Inequalities (any preventable, unfair & unjust differences in health status between groups, populations or individuals that arise from the unequal distribution of social, environmental & economic conditions within societies)		x		

Section 4

What actions will you take to mitigate any potential negative impacts?	Risk identified	Actions required to reduce / eliminate negative impact	Who will lead on the action?	Timeframe
		.		
How will you monitor these actions?				
When will you review this EIA? (e.g in a service redesign, this EIA should be revisited regularly throughout the design & implementation)				

Section 5 - Please read and agree to the following Equality Statement

1. Equality Statement

1.1. All public bodies have a statutory duty under the Equality Act 2010 to set out arrangements to assess and consult on how their policies and functions impact on the 9 protected characteristics: Age; Disability; Gender Reassignment; Marriage & Civil Partnership; Pregnancy & Maternity; Race; Religion & Belief; Sex; Sexual Orientation
1.2. Our Organisations will challenge discrimination, promote equality, respect human rights, and aims to design and implement services, policies and measures that meet the diverse needs of our service, and population, ensuring that none are placed at a disadvantage over others.
1.3. All staff are expected to deliver services and provide services and care in a manner which respects the individuality of service users, patients, carer's etc, and as such treat them and members of the workforce respectfully, paying due regard to the 9 protected characteristics.

Signature of person completing EIA	Keith Hinton
Date signed	15/04/2023
Comments:	
Signature of person the Leader Person for this activity	
Date signed	
Comments:	

Supporting Document 2 – Financial Impact Assessment

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

	Title of document: Guideline for the use of Clonidine for Sedation in Adult Intensive Care	**Yes/No**
1.	Does the implementation of this document require any additional Capital resources	No
2.	Does the implementation of this document require additional revenue	No
3.	Does the implementation of this document require additional manpower	No
4.	Does the implementation of this document release any manpower costs through a change in practice	No
5.	Are there additional staff training costs associated with implementing this document which cannot be delivered through current training programmes or allocated training times for staff	No
	Other comments:	

If the response to any of the above is yes, please complete a business case and which is signed by your Finance Manager and Directorate Manager for consideration by the Accountable Director before progressing to the relevant committee for approval