SOP15
Management of Autonomic Dysreflexia in Adults

1.0 Procedure Statement (Purpose / Objectives of the Procedure)

Autonomic Dysreflexia (AD) is a potentially dangerous (and occasionally fatal) clinical syndrome of uncontrolled hypertension that affects people who have a spinal cord injury. All caregivers and clinicians who tend to individuals with spinal cord injuries must be aware of AD, be able to recognise the symptoms, understand its causes and follow the treatment algorithm.

AD most often affects people with a neurologic level of spinal cord injury at or above the sixth thoracic cord segment (T6); it is very unlikely to occur with injuries below T10. It is caused by an imbalance in autonomic nerve function with sympathetic over activity below the level of the cord lesion and parasympathetic over activity above that level.

AD is a medical emergency and requires immediate intervention to reduce the possibility of serious consequences including retinal detachment, intracranial haemorrhage, seizures and death.

In adhering to this Standard Operating Procedure, all applicable aspects of the Conflicts of Interest Policy (OP109) must be considered and addressed. In the case of any inconsistency, the Conflicts of Interest Policy is to be considered the primary and overriding Policy.

2.0 Accountabilities

All clinical staff in RWT must adhere to the measures in this document.

All Clinical Directors and Matrons are responsible for ensuring dissemination of the contents of this document to all clinical staff within their area of clinical responsibility. This must be part of local induction for all nursing staff to complete.

3.0 Procedure/Guidelines Detail / Actions

3.1 Recognition

The patient may exhibit one or more of the signs and symptoms of AD in spinal cord injury:

- Hypertension defined as a systolic blood pressure (BP) of at least 20 mmHg above the normal level for that patient
- Pounding frontal headache is a very common symptom;
- Bradycardia or occasionally tachycardia or arrhythmias;
- Flushing of the skin and profuse sweating above the level of the spinal cord injury;

- Pallor and dryness of the skin with or without goose pimples below the level of the spinal cord injury;
- Blurred or altered vision;
- Nasal congestion;
- Chills without fever;
- Nausea and vomiting;
- Anxiety or a feeling of doom;
- Myocardial infarction;
- Severe hypertension can cause hypertensive crisis with pulmonary oedema, left ventricular failure, retinal detachment, intra-cranial haemorrhage and seizures.

3.2 Causes of AD

The commonest cause is some form of noxious stimulus occurring below the level of the spinal cord lesion. The commonest causes are a distended bladder or bowel or a urinary tract infection (UTI). Causes of AD are listed in Table 1.

Table 1 Causes of Autonomic Dysreflexia in Adults

Urological	**Gastrointestinal**	**Skin**	**Genito-urinary**	**Other**
Bladder distention (80% of all cases)	Faecal distension of the rectum	Tight clothing	Sexual intercourse	Deep vein thrombosis and pulmonary embolism
Bladder or kidney stones	Intra-abdominal inflammation e.g. appendicitis	Blisters or pressure ulcers	Scrotal compression	Fractures/trauma
Shock wave lithotripsy	Gall Stones	Burns including sunburn	Epididymitis	
Urological procedures	Peptic Ulcers	Frostbite	Menstruation	
Urinary tract infection	Haemorrhoids	Ingrown toe nails	Vaginitis	
	Abdominal distention	Insect bites and other minor trauma	Pregnancy, labour and delivery	
	Digital rectal examination, enemas and rectal washouts	Cellulitis		

3.3 Management of Autonomic Dysreflexia

This is the recommended treatment for AD in adults. The simplest approach is to identify and remedy the cause. Medical treatment to lower the BP will be needed if the cause cannot be identified immediately or if the patient's BP is very high (>150 mmHg) or there is evidence of hypertensive crisis, neurological or visual impairment.

3.3.1 Recognise the signs and symptoms of AD and call for a medical review.

3.3.2 Check the patient's vital signs, particularly BP: frontal headache is the commonest symptom of AD, and it should always prompt measurement of the blood pressure. Monitor blood pressure and pulse rate frequently (this may be as often as every 5 minutes regardless of VitalPac recommendation times as observations should be taken due to clinical needs of individual patients). Look for other signs of AD and for potential causes.

If the temperature is above 38.5ºC remove or change external temperature sources.

3.3.3 If signs of AD are present but BP is not elevated and the cause cannot be identified, refer for medical review.

3.3.4 If the BP is elevated and the spine is stable., immediately sit the person up if the patient is supine Patients should remain sat up until BP returns to normal.

3.3.5 Look for urinary retention: 80% of cases of AD are provoked by bladder distension with urine. If there is a urethral or suprapubic catheter, remove any kinks in the tubing to allow the urine to flow. In all patients, get a bladder scan, but avoid pressing on the bladder (which can exacerbate the problem). If there is retention of urine, catheterize the patient (or re-catheterize if the problem is a blocked catheter) using plenty of instillagel to minimize urethral stimulation (see Nursing Clinical Practices).

3.3.6 If symptoms of AD persist, including sustained elevated BP, consider faecal impaction and other causes (see Table 1), and consider medication.

3.3.7 If faecal impaction is suspected and the systolic BP is less than 150mmHg, do a digital rectal examination with plenty of lubricant. If soft stool is present, remove it gently and recheck the BP (see ClinicalSkills.net for clinical practice guidance and also the AD Intranet site).

3.3.8 If the BP has not returned to normal or the BP is very high or there is a risk of serious consequences, medication will be needed to control the BP avoiding causing hypotension below the patient's normal level. Urgent advice must be sought from the on-call registrar or consultant for General Medicine. If medication is given to manage AD, check the BP every 5 minutes until it has returned to normal.

3.3.9 If the precipitating cause has not been found, check for less frequent

causes (see 3.2). If AD does not settle please escalate to the patient's consultant (on call consultant or registrar out of hours) and advise the Outreach Team for support.

4.0 Equipment Required

5.0 Training

Practical Digital Rectal Examination (DRE)/Digital Removal of Faeces (DRF) training available as required via Nurse Education.

Online e-learning package available via the Autonomic Dysreflexia intranet page or via KITE.

6.0 Financial Risk Assessment

1	Does the implementation of this document require any additional Capital resources	**No**
2	Does the implementation of this document require additional revenue resources	**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 programs or allocated training times for staff.	**No**
	Other comments	

7.0 Equality Impact Assessment

Included as a separate document.

8.0 Maintenance

Maintenance of this document will be coordinated via the Surgical Guidelines review framework to ensure it is reviewed and updated at timely intervals.

9.0 Communication and Training

The communication of this SOP will be via the Intranet page and the Surgical Guidelines framework.

It will also be reference in the Making it Better Alert for Autonomic Dysreflexia with the expectation that;

ALL CLINICAL AREAS MUST ENSURE THAT ALL MEMBERS OF THE CLINICAL TEAM THAT ARE INVOLVED IN THE CLINICAL EXAMINATION / ASSESSMENT & REVIEW OF PATIENTS WITH SPINAL INJURIES ARE MADE AWARE OF THIS ALERT AND IMPLEMENT THE FOLLOWING WITH IMMEDIATE EFFECT:

- *Review the content and information on the dedicated Autonomic Dysreflexia Intranet page.*
- *Review the SOP outlining Symptoms, Case and Management of Autonomic Dysreflexia in Adults.*
- *Complete the online training package*
- *Consider relevance of undertaking the DRE training for their areas.*

The procedure and competency for Digital Rectal examination is available to all Trust employees on ClinicalSkills.net, and the link to the eLearning pack on the KITE site will also be available.

Nurses in key areas will have their competency for DRE assessed using this procedure and competency assessment tool.

10.0 Audit Process

Not Applicable.

11.0 References - Legal, professional or national guidelines

Consortium for Spinal Cord Medicine.

Acute management of Autonomic Dysreflexia: Individuals with spinal cord injury presenting to health care facilities. 2nd ed Washington DC.

NICE (2016). Spinal injury: Assessment and initial management. https://www.nice.org.uk/guidance/ng41 accessed 10.09.19.

Document Control

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	1	October 2020	AD Working Group	Implementation of SOP
	1.1	Jan. 2024	AD Working Group	Extension
	2.0	March 2024	AD Working Group	Full Review

Intended Recipients: All staff groups.	
Consultation Group / Role Titles and Date:	
Name and date of group where reviewed	Trust Policy Group – March 2024
Name and date of final approval committee(if trust-wide document)/ Directorate or other locally approved committee (if local document)	Trust Management Committee – March 2024
Date of Procedure/Guidelines issue	March 2024
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Training and Dissemination:	
To be read in conjunction with:	
Initial Equality Impact Assessment: **Completed Yes** **Full Equality Impact assessment (as required):** **Completed N/A**	
Contact for Review	AD Working Group
Monitoring arrangements	

Document summary/key issues covered. Autonomic Dysreflexia (AD) is a potentially dangerous (and occasionally fatal) clinical syndrome of uncontrolled hypertension that affects people who have a spinal cord injury. All caregivers and clinicians who tend to individuals with spinal cord injuries must be aware of AD, be able to recognize the symptoms, understand its causes and follow the treatment algorithm.	
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