**Appendix 1 – Autonomic Dysreflexia Factsheet**

**Autonomic Dysreflexia**

**What is it?**

Autonomic Dysreflexia is the name given to a condition where there is a sudden and potentially lethal rise in blood pressure (BP). It is the body’s way of responding to a problem. It is often triggered by acute pain or some other harmful stimulus within the body. It is unique to spinal cord injury and most commonly affects spinal cord injured people with injuries at or above T6. This extreme rise in blood pressure (hypertension) can lead to some types of stroke (cerebral haemorrhage) and even death.

**It should ALWAYS be treated as a medical emergency**

Studies have shown that it can occur at any time following the onset of spinal cord injury, when the period of spinal shock has subsided, about 2-6 weeks post injury. Spinal Cord injured people with a complete injury will have no movement or sensation. Any person with an injury of T6 and above are just as likely to experience autonomic dysreflexia as people with complete lesions, (Harris 2001) although it is reported that symptoms are less severe in this group.

**Why does it occur?**

Autonomic dysreflexia occurs in response to pain or discomfort below the level of spinal cord lesion which the patient can't. It is the body’s ‘fight or flight’ response. The blood pressure rises when the body encounters a harmful stimulus. In non spinal cord injured people the body responds via the autonomic nervous system, by dilating blood vessels, therefore lowering blood pressure to try to keep it within the normal range.

When the person has a SCI level of T6 or above, the autonomic nervous system cannot lower the raised blood pressure below the level of injury, in response to pain or discomfort below the level of spinal cord injury. Hence, the blood pressure continues to rise until the cause of the stimulus is found and removed.

However, the autonomic nervous system does attempt to lower your blood pressure above the level of the spinal cord injury. This is the source of the symptoms of autonomic dysreflexia which are an invaluable warning mechanism for people with a lesion of T6 and above. you to take appropriate action.

If an autonomic dysreflexic episode is not resolved, the continuing surge in blood pressure becomes very dangerous and can lead to a stroke or possibly death.

**Who is at risk?**

Spinal cord injured people injured at or above the level of T6.

People with complete injuries are more like to be affected.

**What are the symptoms?**

It should be noted that most SCI people are unlikely to experience all symptoms, rather usually one cause with one symptom. you might even experience symptoms that are peculiar to you. However, the most common is a is a pounding, usually frontal, headache and one or more of the following most common presenting symptoms:

Flushed (red) appearance of skin above the level of injury

Profuse sweating above the level of injury occasionally

Pale coloured skin below the level of injury

**Bladder**

Distended bladder - Most common cause due to blocked indwelling catheter

Severe hypertension causing pounding headache (note: SCI people have lower resting blood pressure compared to non- SCI people)

The sensation of a tight chest, usually without the pounding headache

Bradycardia (slowing of the heart rate)

A kink in the catheter

An over-full leg bag

Blockage or obstruction that prevents urine flowing from the bladder

Urinary tract infection or bladder spasms

Bladder stones

**Bowel**

Distended bowel which can be due to a full rectum, constipation or impaction

Haemorrhoids

Anal fissures

Stretching of rectum or anus or skin breakdown in the area

**Skin**

Pressure ulcer, contact burn, scald or sunburn

Ingrown toenail

Tight clothing/leg bag etc.

**Sexual activity**

Over-stimulation during sexual activity

Ejaculation – can cause a dysreflexic episode, but this can be managed

**Gynaecological issues**

Menstrual pain

Labour and delivery

**Other causes**

Bone fractures, below the level of injury

Pain or trauma

Syringomyelia

Deep vein thrombosis (DVT)

Acute conditions such as gastric ulcer, appendicitis

Severe anxiety (eliminate all possible physiological factors first)

Unless it is the first episode of AD the SCI person has experienced, or they are recently injured, they may have no understanding of AD.

Not all medical staff are aware of autonomic dysreflexia however those SCI persons will have had training on AD and can direct their care if needed for example, many paraplegic persons can manage AD independent, while those with tetraplegia will require assistance, hence they become expert SCI persons.

Whilst some SCI people injured at T6 and above, will have experienced at least one episode of autonomic dysreflexia during their rehabilitation in a Spinal Cord Injury Centre (SCIC), this cannot be guaranteed

**Treatment**

Early recognition of AD is essential so that treatment can be started immediately. Once raised blood pressure has been confirmed, where possible, together with the typical signs and symptoms of autonomic dysreflexia, the high blood pressure must be treated and the cause identified.

**Follow the Flow chart in Appendix 5**

**What actions should be taken once autonomic dysreflexia is identified?**

Sit up and drop your feet to drop the blood pressure

Loosen any clothing and check nothing is putting pressure on the skin

Perform a quick assessment to identify the cause so that the stimulus can be removed.

Actions should be prioritised as follows:

Monitor the BP every 3-5 minutes

**Identify and remove cause**

**Bladder**

The most common cause of autonomic dysreflexia is non-drainage of urine. This can be due to a blocked catheter, urinary tract infection or overfilled collection bag.

**Action:**

Check the patency If you have a Foley or suprapubic catheter, check the following:

Is the drainage bag full? **if so empty the bag**

Is there a kink in the tubing? release it

Is the drainage bag at a higher level than the bladder? **Lower it**

Is the catheter plugged?

After correcting the obvious problem, and if your catheter is not draining in 2-3 minutes the catheter must be changed immediately.

**Do NOT attempt a bladder washout as this could increase the blood pressure**

**Bowel**

If your bladder has not triggered the episode of autonomic dysreflexia, then the cause may be your bowel. This can be due to constipation, anal fissures / haemorrhoids or an infection.

**Action:**

A competent person inserts a gloved finger lubricated with an anaesthetic lubricant such as 2% lignocaine gel, into the rectum. If the rectum is full, insert some lubricant and wait for a minimum of 3 minutes. This is to reduce the sensation in the rectum. This is important because performing digital stimulation and manual evacuation may worsen autonomic dysreflexia. Gently perform manual evacuation.

**If while beginning bowel care the if or when the symptoms of autonomic dysreflexia first appeared, then stop the procedure and resume after the symptoms subside**

**Other causes**

If an overfull rectum isn’t the cause, investigate alternative causes from the list given previously. It is important to ensure the patient is calm when they have an autonomic dysreflexic episode that you remain calm; anxiety can make the problem worse. Once identified, remove the offending stimulus.

Ideally, the SCI person or carers and family members, should know the persons normal blood pressure following the SCI, that the SCI person important for you to know your normal blood pressure and pulse rate and document them in an obvious place when an AD episode of autonomic dysreflexia.

As people with high-level paraplegia and tetraplegia usually have a low resting blood pressure, (80 or 90 systolic for a cervical injury) a rise to 120 or 130 systolic, could be dangerous.

**If possible record a baseline BP**

If the BP increases by 20 mm/Hg and is accompanied by a lowering of the pulse rate, then the person could be having an episode of autonomic dysreflexia. Check the persons blood pressure and check the persons normal BP as a comparison.

If appropriate once you have eliminated bladder and bowel distension as the cause of the autonomic dysreflexia, sit up and have frequent BP checks until the episode has resolved.

If you are unable to measure your BP using the appropriate measuring machine (sphygmomanometer) then a good indicator is the severity of your headache. If your BP continues to rise, then your headache will become more intense; when it begins to fall, your headache will be less painful. Ask the person how their headache is, better or worse.

If the symptoms persist despite interventions, ask for a medical assessment. Persons at risk will have been prescribes your treatment options in the event of autonomic dysreflexia. You should also be provided with an appropriate vasodilator (substance that causes the blood vessels to widen, thereby reducing BP) for use at home, which should be administered if you have an episode of autonomic dysreflexia. This is usually

As mentioned previously, since not all medical and healthcare staff are familiar with autonomic dysreflexia and its treatment, you should carry an emergency medical card with you always that describes the condition and the treatment required. You can obtain a free emergency medical card from SIA, see Appendix 6.

**Autonomic Dysreflexia Emergency Kit**

SCI persons who are at risk may have a AD Kit, in their car is also worthwhile to have an AD kit with you at all times. This would contain:

Catheter and supplies: if you use intermittent catheterisation, pack a straight catheter, and if you use an indwelling catheter, pack insertion supplies, irrigation syringe and sterile water/saline solution.

Medicine prescribed for autonomic dysreflexia (usually Nifedipine or Glyceryl tri- nitrate - GTN) – check this from time to time to make sure it is in date - r

Anaesthetic lubricant like 2% lidocaine (lignocaine) gel

Sterile vinyl gloves

Wet wipes and disposal bag.

**Warning: postural hypotension (a drop in blood pressure) can occur following medication for AD.**

How can the risk of autonomic dysreflexia be reduced?

Fortunately, there are precautions you can take to reduce the risk of autonomic dysreflexia including:

**Bladder**

Change catheters regularly to prevent blockage

Keep catheters free off kinks, clean, and follow your intermittent catheterisation regime regularly to avoid an overfull bladder

Check urine for signs of infection (UTIs)

Have regular bladder and bowel check-ups with your GP or at your SCIC

Drink enough fluids.

**Bowel**

Maintain a regular bowel regime (ideally alternate or daily days between bowel evacuations)

Adequate fibre in diet to help avoid constipation

Get treatment for any haemorrhoids.

**Skin**

Frequent pressure relief when in both chair and bed

Check skin regularly

Avoid tight or restrictive clothing

Avoidance of sunburn / scalds (avoid overexposure, use sunscreen with SPF15 or higher, avoid extreme water temperatures)

Establish good posture in your wheelchair

Maintain essential equipment, especially making sure the wheelchair cushion is fit for purpose.

**Other**

If pregnant or planning to get pregnant, make sure your obstetrician /

gynaecologist is aware of your healthcare needs as a SCI person

Correct dosage and timing of medications

Be educated in the causes, signs and symptoms, first aid, and prevention of autonomic dysreflexia and make sure those around you, or caring for you, are similarly educated.

**In Summary**

AD is a potentially life-threatening medical problem

It requires immediate attention

Quickly identify the cause

Have the necessary items to manage the AD episode

Find and fix the problem, stay calm

Call for medical attention if the symptoms do not subside.

For an Emergency Medical Card, ring SIA Advice Line – Tel: 0800 980 0501

\*Adapted from Managing Spinal Cord Injury: Continuing Care; Chapter 22 ‘Autonomic Dysreflexia’ by Paul Harrison & Alison Lamb.

**Disclaimer**

This factsheet has been prepared by SIA and contains general advice only which we hope will be of use to you. Nothing in this factsheet should be construed as the giving of specific advice and it should not be relied on as a basis for any decision or action. SIA does not accept any liability arising from its use. We aim to ensure the information is as up-to-date and accurate as possible, but please be warned that certain areas are subject to change from time to time. Please note that the inclusion of named agencies, companies, products, services or publications in this factsheet does not constitute a recommendation or endorsement by SIA. Revised March 2013

Revised By Anne Seaman Practice Educator January 2019

Duke Of Cornwall Spinal Treatment Centre