Brighton and Sussex University Hospitals NHS Trust

Guideline for use in Recovery

This document is not a protocol. It is intended to guide clinicians, who do not regularly anaesthetise patients for carotid endarterectomy, in managing post procedure hypertension in a timely and effective manner.

Guideline for the Management of Post-Carotid Endarterectomy Hypertension

Lability of blood pressure is common after carotid endarterectomy (CEA) for various reasons including manipulation of the carotid bulb during surgery, local anaesthesia of the carotid sheath/bulb, and various vaso-active medications which have been given intra-operatively or omitted pre-operatively. **Cerebral Hyperperfusion Syndrome** is uncommon, but occurs in 1-3% of patients post CEA and is due to impaired cerebral autoregulation, which will resolve in time. Symptoms include ipsilateral headache, nausea and vomiting, visual disturbance and focal seizures. If not treated promptly it may result in intracerebral haemorrhage which may be catastrophic. **Good post-operative blood pressure control is the key to prevention of this complication.**

The optimal blood pressure for each individual patient may vary. The anaesthetist and surgeon will decide together upon appropriate limits for each case and document below:

Keep systolic arterial pressure above:	mmHg	Keep systolic arterial pressure below:	mmHg

If the Blood pressure is too high (above limits sets above) please do the following (and confirm action with tick in box):

Step One	Inform anaesthetist and surgeon performing the case, or the on-call team if it is out of hours and the operating team have left. Consider and treat possible causes of hypertension such as pain, anxiety, full bladder, high $PaCO_2$	☐ ☐

Step Two	If the patient has omitted their usual antihypertensive medication on the morning of surgery give it orally now.	☐

**** Has the patient got a headache? If yes move on to step 3 NOW ****

If the patient does not have a headache wait for 30 minutes to allow time for the oral medication to be effective before moving on to step 3

Step 3	Control Blood Pressure with intravenous medication Call Vascular Registrar or Anaesthetic Registrar Use one or more options (overleaf), in any order according to the individual situation, as required to control blood pressure within set limits.	☐

Option 1 If HR > 60	Give intravenous Labetolol in 10mg boluses every 3 minutes up to a total of 100mg (100mg in 20mls, each 1ml is 5mg, give 2mls each time). If Labetolol is effective but wears off, consider an infusion at 50-100mg/hr (titrate rate to BP)	☐

Option 2	Give Clonidine 15 micrograms intravenously every 10 mins up to a maximum of 1 microgram/kg. (draw up 150 micrograms and dilute with saline to 10mls, give 1ml at a time)	☐

Option 3	Magnesium – put 2g in 100mls saline and give over 15 minutes via an infusion pump. Repeat if first dose ineffective.	☐

Option 4	Hydralazine (10mg in 10mls) give 1-2mg every 5mins up to 10mg total If effective but wears off can be given as an infusion.	☐

- If the blood pressure is still too high:

Further Treatment	Call the Consultant Vascular Anaesthetist and or Consultant Vascular Surgeon for advice regarding further management Vasodilators such as GTN may be considered. They are not first line due to the risk of cerebral arterial dilatation. If fitting occurs it should be controlled (as per standard management – BDZs phenytoin etc) and dexamethasone 8mg should be considered to reduce cerebral oedema. Refer the patient to HDU as they will need close monitoring for at least 24 hours until BP is settled Patient must not be sent to the ward with a blood pressure above set limits	☐ ☐ ☐ ☐

If the blood pressure is too low, assess filling status (is the patient thirsty? Does the USCOM suggest room for filling?)

Under-filled?	Give up to 4 x 250ml fluid boluses (each over 5 minutes).	☐

If this is ineffective, call an Anaesthetist who will consider giving vasopressors:

Oral Route preferable	Give Ephedrine tablets 30mg (2 x 15mg tablets)	☐