Protocol for using oral phenoxybenzamine to prepare patients with catecholamine-secreting phaeochromocytoma and paraganglioma for surgery

Patient referred by doctor to EDCC for pre-operative Phenoxybenzamine work-up prior to surgery. The details of procedure on attendance at the EDCC are described below.

Any instructions regarding changes to relevant medications given to both patient and EDCC, when seen by referring Doctor.

Alternative prescriptions provided as needed, with full instructions.

Phenoxybenzamine is to be stocked in Chancellors Wing outpatients pharmacy (EDCC staff to ring ext 65626 before hand, and then fax the prescription to ext 65626 - they can be getting it ready and the patient can then collect it as long as they take the original with them)

Notes ideally need to be available and kept on the EDCC, to ensure that the work-up is documented and available for the surgeon and anaesthetist on admission.

The treatment chart and infusion chart can then be prescribed on the last visit to the EDCC, when reviewed by the doctor, and kept with the notes.

The EDCC need to ensure a bed will be available on Sunday (pre surgery Monday), by contacting the relevant surgeon’s secretary on the Friday. Details of the admission ward can be relayed to the patient, and the notes can be transferred over by the Specialist Nurse/Day Unit staff. (A record of note transfer will be kept on the EDCC, to ensure traceability).
Procedure during EDCC attendance

Patient attends EDCC

- Mon/Wed/Fri/ Mon/Wed/Fri for the 2 weeks prior to the planned admission for surgery, (best scheduled when Endocrinologist in clinic in case discussion required).

- Lying and standing BP performed and documented each visit.

- Resting heart rate recorded each visit

- Initial prescription to be written as ‘Phenoxybenzamine 10mg capsules, as directed. 60 capsules’

- Initially commenced phenoxybenzamine orally at a dose of 10mg twice daily, unless instructed otherwise by prescribing doctor.

- At each visit, after recording of BP (LYING AND STANDING) and RESTING heart rate, record any symptoms experienced. These may include:

  - Nasal stuffiness, dizziness, ejaculatory failure

  - If no significant postural drop recorded and patient is not experiencing tachycardia, increase dose of phenoxybenzamine by 10mg twice daily (every 48 hours), titrating up to a dose in the majority of patients of 20-30mg, although higher doses may be needed in some patients. The aim is for the patient to develop nasal stuffiness and significant postural drop, or a systolic BP of less than 110mmHg. When this is achieved, maintain the patient on that dose of phenoxybenzamine. This dose will continue until admission for surgery. (If patient unable to cope with symptoms, reduce back to previous dose)

  - If the patient develops tachycardia of resting heart rate >120bpm, beta-blockers will need to be commenced after review by an endocrinologist (propanolol 40mg, TDS)

  - At each review, it is important that the patient is reminded to drink plenty of fluids.
Assessment Chart for Pre-Surgery Work-up for using oral phenoxybenzamine to prepare patients with catecholamine-secreting phaeochromocytoma and paraganglioma for surgery

Diagnosis:

Patient Details
Affix Label

Consultant
Ward/Unit

<table>
<thead>
<tr>
<th>Date</th>
<th>Lying BP</th>
<th>Standing BP</th>
<th>Resting Pulse</th>
<th>Dose</th>
<th>Symptoms/Treatment Changes</th>
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Other information:
Symptoms may include nasal stuffiness, dizziness, ejaculatory failure.
Appendix 2
Previous Protocol for patients admitted pre-operatively for Phaeochromocytoma surgery using IV Phenoxybenzamine

Patient should be given α blocker Phenoxybenzamine at a dose of 1 mg/Kg body weight given as an intravenous infusion over 4 hours.

The total dose of Phenoxybenzamine should be diluted in 500 ml of Normal saline.

The infusion should be given once every day for 3 days, preferably during the daytime as this would allow his BP to me monitored closely.

The infusion is not given on the day of the surgery.

Watch for postural hypotension, check lying and standing BP 4 hourly.

If patient has significant hypotension, BP less than 110/70 mmHg, inform the doctors and start intravenous Normal Saline infusion @ 1 Litre over 6 hours. Further IV fluids to be decided on clinical response. Avoid Colloids like Gelofusin or Volplex.

Occasionally patients can have tachycardia, therefore monitor the heart rate. If the heart rate increases to more than 90/ min, inform doctors. Patients with sustained tachycardia will need to be started on a β blocker- Propranolol @ 40 mg TDS.

If there are any further concerns contact the on call Endocrine registrar during weekdays working hours. Dr. Orme or Endocrine Consultant in charge will usually see the patient whilst on the ward; any further queries could be addressed to him.
Appendix 3

Society for Endocrinology

Protocol using oral phenoxybenzamine to prepare patients with catecholamine-secreting phaeochromocytoma and paraganglioma for surgery

The suppliers of licensed phenoxybenzamine (“Dibenylane”) injection, Goldshield Group Limited, have been experiencing difficulties in manufacturing this product and are currently out of stock; they cannot give an indication of when supplies will be restored. It has been become apparent that many endocrinologists do not use intravenous phenoxybenzamine pre-operatively but rather use high doses of the oral preparation; such a protocol provides an alternative means of preparing patients for surgery whilst supplies of the intravenous compound are being restored. One such protocol, used by Mr Barney Harrison (Consultant Endocrine Surgeon, Royal Hallamshire Hospital, Sheffield) and Dr John Newell-Price (Reader in Endocrinology and Honorary Consultant Physician, University of Sheffield), is described here:

1. After diagnosis:

After diagnosis is confirmed, the dose of oral phenoxybenzamine is titrated to symptoms and to control blood pressure. Most patients are started on an initial dose of 10-20mg (oral, twice daily), titrating up to a dose in the majority of patients of 20-30mg, although higher doses may be needed in some patients. Most patients do not experience significant side effects (eg nasal stuffiness, ejaculatory failure) at these doses. Beta blockade is not routinely recommended. This regime is maintained until the start of the “pre-operative preparation”, which for most patients means that it will be sustained for several weeks.

2. Pre-operative preparation in the week prior to surgery:

If patients live at a distance or for other medical reasons, admission may be needed 5-7 days prior to surgery, but patients can also be managed by close liaison over the phone. Oral phenoxybenzamine is increased by 10mg per dose every 48 hours until nasal stuffiness and significant postural hypotension develops, or a systolic blood pressure less than 110mmHg is observed.

Patients tolerate anaesthesia extremely well under this protocol. It is important to note that beta blockade is not routinely used unless intolerable symptomatic tachycardia develops. It is also important to note that patients should be on alpha blockade for several weeks at least (to allow sufficient time for circulating volume expansion), and are in addition encouraged to drink sufficient fluids. Final volume expansion is achieved the night before the operation by the use of an intravenous infusion of normal saline overnight.

In Sheffield, this protocol has been used to prepare a large number (>100) of phaeochromocytoma / paraganglioma patients for surgery, with the majority undergoing laparoscopic procedures, although the same preparation method is also used for open procedures.

This information is provided by the Society for Endocrinology’s Clinical Committee

October 2010

JLA June 2012

Chairman Martin Buckley  Chief Executive Maggie Boyle

The Leeds Teaching Hospitals incorporating: Chapel Allerton Hospital  Cookridge Hospital  Leeds Chest Clinic
Leeds Dental Institute  Seacroft Hospital  St James’s University Hospital  The General Infirmary at Leeds
Wharfedale Hospital