NHS Grampian NHS Highland NHS Orkney NHS Shetland NHS Eileanan Siar Western Isles

# Patient Group Direction For The Administration Of Medicines Included In The Radiographers PGD Formulary By Radiographers Working Within NHS Grampian, Highland, Orkney, Shetland And Western Isles

| | | |
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| **Lead Author:**<br>Medicines Management Specialist Nurse NHSG | **Consultation Group**:<br>See relevant page in the PGD | **Approver:**<br>NoS PGD Group<br><br>**Authorisation:**<br>NHS Grampian |

| | | |
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| **Signature:** | | **Signature:** |

| | | |
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| **NoS Identifier:**<br>NoS/PGD/Radio_Meds/ MGPG1172 | **Review Date:**<br>June 2023<br><br>**Expiry Date:**<br>June 2024 | **Date Approved:**<br>June 2021 |

**NHS Grampian, Highland, Orkney, Shetland and Western Isles have authorised this Patient Group Direction to help individuals by providing them with more convenient access to an efficient and clearly defined service within the NHS Boards. This Patient Group Direction cannot be used until Appendix 1 and 2 are completed.**

**Uncontrolled when printed**

**Version 1.1 (Amended July 2023)**

**Revision History:**

| | |
|---|---|
| **Reference and approval date of PGD that has been adapted and/or superseded** | New PGD Adapted from the following NHSG PGDs:<br>NHSG/PGD/Buscopan/MGPG931<br>NHSG/PGD/GTNRadio/MGPG910<br>NHSG/PGD/GIExam/MGPG964<br>NHSG/PGD/Betaloc/MGPG949<br><br>Adapted from the following NHSH PGDs:<br>01_08_v5 Buscopan PGD<br>01_14_v3 Sodium Citrate PGD |

| **Date of change** | **Summary of Changes** | **Section heading** |
|---|---|---|
| March 2020 | New NoS PGD formulary created for use by radiographers in NHSG, NHSH, NHSS and NHSWI. | |
| July 2023 | NHS Orkney added. | Throughout PGD |
| July 2023 | Expiry date added to front cover. | Front cover |

| | |
|---|---|
| **NoS Identifier:** | NoS/PGD/Radio_Meds/MGPG1172 |
| **Keyword(s):** | PGD Patient Group Direction radiographer medicines |

**Policy Statement:** It is the responsibility of the individual healthcare professionals and their line managers to ensure that they work within the terms laid down in this PGD and to ensure that staff are working to the most up to date PGD. By doing so, the quality of the services offered will be maintained, and the chances of staff making erroneous decisions which may affect individual, staff or visitor safety and comfort will be reduced. Supervisory staff at all levels must ensure that staff using this PGD act within their own level of competence.

The lead author is responsible for the review of this PGD and for ensuring the PGD is updated in line with any changes in clinical practice, relevant guidelines, or new research evidence.

**Review date:** The review date for a PGD needs to be decided on a case-by-case basis in the interest of safety. The expiry date should not be more than 3 years, unless a change in national policy or update is required.

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| Document: | Drafted: | March 2020 / February 2021 |
| | Completed: | May 2021 |
| | Approved: | June 2021 (published – August 2021) |
| | Amended: | July 2023 |

## Organisational Authorisations

**This PGD is not legally valid until it has had the relevant organisational authorisation.**

**PGD Developed/Reviewed by;**

| | |
|---|---|
| **Medical practitioner** | **Name:** Dr Barbara Flont<br>**Health Board:** NHSH<br>**Title:** Consultant Radiologist<br>**Contact email:** Barbara.Flont@nhs.scot<br>**Signature:** Barbara Flont |
| **Senior representative of the professional group who will provide care under the direction** | **Name:** Laura Farquharson<br>**Health Board:** NHSG<br>**Title:** Superintendent Radiographer<br>**Contact email:** laura.farquharson@nhs.scot<br>**Signature:** |
| **Lead author** | **Name:** Frances Adamson<br>**Health Board:** NHSG<br>**Title :** Medicines Management Specialist Nurse<br>**Contact email:** frances.adamson@nhs.scot<br>**Signature:** |
| **Pharmacist** | **Name:** Mary McFarlane<br>**Health Board:** NHSS<br>**Title :** Principal Pharmacist<br>**Contact email:** mary.mcfarlane@nhs.scot<br>**Signature:** |

**Approved for use within NoS Boards by;**

| North of Scotland (NoS) PGD Group Chair | Signature | Date Signed |
|---|---|---|
| Lesley Coyle |  | 24/08/21 |

**Authorised and executively signed for use within NoS Boards by;**

| NHS Grampian Chief Executive | Signature | Date Signed |
|---|---|---|
| Professor Caroline Hiscox |  | 25/08/21 |

**Management and Monitoring of Patient Group Direction**

**PGD Consultative Group**

The consultative group is legally required to include a medical practitioner, a pharmacist and a representative of the professional group who will provide care under the direction.

| **Name:** | **Title:** |
|---|---|
| Frances Adamson | **Lead Author:** Medicines Management Specialist Nurse |
| Mary McFarlane | **Pharmacist:** Principal Pharmacist NHSS |
| Dr Barbara Flont | **Medical Practitioner:** Consultant Radiologist NHSH |
| Laura Farquharson | **Senior Representative:** Superintendent Radiographer NHSG |
| Nicola Fox | Radiology Team Leader NHSH |
| Lorna Main | Superintendent Radiographer NHSG |
| Lauren Gault | Superintendent Radiographer NHSG |
| Dympna McAteer | Consultant Radiologist NHSG |

# Patient Group Direction For The Administration Of Medicines Included In The Radiographers PGD Formulary By Radiographers Working Within NHS Grampian, Highland, Orkney, Shetland And Western Isles

## Clinical indication to which this PGD applies

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| **Definition of situation/ Condition** | This Patient Group Direction (PGD) will authorise radiographers to administer medications as included in the Radiographers PGD Formulary (Appendix 3) to individuals from 2 years of age and over.<br><br>**NOTE:** Prior to the examination, all individuals will be asked a series of questions from the specialised Patient Identification Protocol or equivalent in all Boards. Within NHSG the checklist will be scanned into the Radiology Information System (RIS) as a record following the procedures outlined in this PGD.<br><br>This PGD should be used in conjunction with the individual Board protocols and recommendations in the current British National Formulary (BNF), British National Formulary for Children (BNFC), and the individual Summary of Product Characteristics (SmPC). |
| **Inclusion criteria** | • Individuals attending radiology departments for investigation or treatment.<br><br>**NOTE:** See individual medicine monographs for specific age inclusion criteria and specific inclusions.<br><br>• Individual must have completed a pre-examination checklist relevant to the imaging procedure being undertaken.<br><br>Prior to the administration of the medicine, valid consent to receiving treatment under this PGD must be obtained. Consent must be in line with current individual NHS Boards consent policy. |
| **Exclusion criteria** | • Individuals aged less than 2 years of age.<br>• Where there is no valid consent.<br><br>**NOTE:** See individual medicine monographs for specific exclusions. |
| **Precautions and special warnings** | • If there is any concern about the appropriate use of the medicine in the specific indications given within the PGD then medical advice should be sought.<br>• Precautions listed in the individual monographs should be taken into account. |

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| | • The medicine Patient Information Leaflet (PIL) should be consulted to ensure that the individual has not experienced a previous hypersensitivity reaction to any ingredients or excipients.<br><br>See individual medicine monographs for specific precautions and warnings. |
| **Action if excluded from treatment** | Medical advice must be sought – refer to radiologist or relevant medical practitioner.<br><br>Document the reason for exclusion under the PGD and any action taken in the individual's appropriate clinical records. |
| **Action if treatment is declined** | Inform/refer to the relevant medical practitioner if individual/person with parental responsibility declines treatment.<br><br>Document that the administration was declined, the reason and advice given in appropriate clinical records. |

**Description of treatment available under the PGD**

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| **Name form and strength of medicine** | See individual medicine monographs. |
| **Legal status** | The medicines included in this PGD are either Pharmacy (P) medicines or Prescription-only Medicines (PoM). |
| **Dosage/Maximum total dose** | See individual medicine monographs. |
| **Frequency of dose/Duration of treatment** | See individual medicine monographs. |
| **Maximum or minimum treatment period** | See individual medicine monographs. |
| **Route/Method of administration** | See individual medicine monographs. |
| **Quantity to be administered** | See individual medicine monographs. |
| **Storage requirements** | See individual medicine monographs. |

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| **Follow-up (if applicable)** | Individuals should not leave if they are feeling unwell without speaking to the radiographer who administered the medicine first. If necessary a doctor or the individuals GP should be contacted for advice. |
| **Advice (Verbal)** | Advise individual/person with parental responsibility what to expect and what to do for minor and major reactions.<br>If serious adverse or persistent effects occur, the individual/person with parental responsibility should be advised to contact their GP/Accident and Emergency department/NHS24. |
| **Advice (Written)** | The Patient Information Leaflet (PIL) contained in the medicine(s) should be made available to the individual/person with parental responsibility. Where this is unavailable, or unsuitable, sufficient information should be given in a language that they can understand. |
| **Identifying and managing possible adverse reactions** | See individual medicine monographs.<br><br>**This list is not exhaustive. Please also refer to current BNF/BNFC and manufacturers SmPC for details of all potential adverse reactions.**<br><br>**BNF/BNFC**:<br>BNF British National Formulary - NICE<br>BNF for Children British National Formulary - NICE<br><br>**SmPC/PIL/Risk Minimisation Material:**<br>Home - electronic medicines compendium (emc)<br>MHRA Products \| Home<br>RMM Directory - medicines starting with A - (emc)<br><br>If an adverse reaction does occur give immediate treatment and inform relevant medical practitioner as soon as possible.<br><br>Report any severe reactions using the Yellow Card System.<br>Yellow Card Scheme - MHRA |
| **Facilities and supplies required** | The following are to be available at sites where the medicine is to be supplied/administered:<br>• Appropriate storage facilities<br>• An acceptable level of privacy to respect individual's right to confidentiality and safety<br>• Basic airway resuscitation equipment (e.g. pocket mask, bag valve mask, supraglottic airway)<br>• Immediate access to Epinephrine (Adrenaline) 1 in 1000 injection<br>• Access to a working telephone |

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| | • Another competent adult, who can summon urgent emergency support if required should ideally be present<br>• Access to medical support (this may be via the telephone)<br>• Approved equipment for the disposal of used materials<br>• Clean and tidy work areas, including access to hand washing facilities or alcohol hand gel<br>• A copy of this current PGD in print or electronically. |

## Characteristics of staff authorised to administer medicine(s) under PGD

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| **Professional qualifications** | Radiographers registered with the Health and Care Professions Council (HCPC). |
| **Specialist competencies** | **Approved by the organisation as:**<br>• Competent to assess the individual/person with parental responsibilities capacity to understand the nature and purpose of the medicine administration in order to give or refuse consent<br>• Aware of current treatment recommendations and be competent to discuss issues about the medicine with the individual/person with parental responsibility<br>• Having undertaken appropriate training to carry out clinical assessment of individuals identifying that treatment is required according to the indications listed in the PGD.<br>• Competent to undertake administration of the medicine<br>• Competent to work under this PGD. |
| **Ongoing training and competency** | **All professionals working under this PGD must:**<br>• Have undertaken PGD training as required/set out by each individual Health Board<br>• Have attended basic life support training either face to face or online and updated in-line with individual Board requirements<br>• Have undertaken NHS e-anaphylaxis training or equivalent which covers all aspects of the identification and management of anaphylaxis in-line with individual Board requirements<br>• Maintain their skills, knowledge and their own professional level of competence in this area according to their Code of Professional Conduct<br>• Have knowledge and familiarity of the following;<br>  ○ SmPC for the medicine(s) to be administered in accordance with this PGD. |

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| **Responsibilities of professional manager(s)** | **Professional manager(s) will be responsible for;**<br><br>Ensuring that the current PGD is available to all staff providing care under this direction.<br><br>Ensuring that staff have received adequate training in all areas relevant to this PGD and meet the requirements above.<br><br>Maintain up to date record of all staff authorised to administer the medicine(s) specified in this direction. |

## Documentation

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| **Authorisation of administration** | Radiographers working within NHS Grampian, Highland, Shetland and Western Isles can be authorised to administer the medicine(s) specified in this PGD by their Unit Clinical Director or Consultant Radiologist.<br><br>All authorised staff are required to read the PGD and sign the Agreement to Administer Medicines Under PGD (Appendix 1).<br><br>A Certificate of Authorisation (Appendix 2) signed by the authorising professional/manager should be supplied. This should be held in the individual health professional's records, or as agreed within the individual Health Board. |
| **Record of administration** | An electronic or paper record for recording the screening of individuals and the subsequent administration, or not of the medicine(s) specified in this PGD must be completed in order to allow audit of practice. This should include as a minimum:<br>• Date and time of administration<br>• Individuals name and CHI<br>• Exclusion criteria, record why the medicine was not supplied/administered (if applicable)<br>• Record that valid consent to treatment under this PGD was obtained<br>• The name, dose, form, route (batch number, expiry date and site where appropriate for injectable medicines) of the medicine administered/supplied<br>• Advice given, including advice given if excluded or declined treatment under this PGD<br>• Signature and name in capital letters of the healthcare professional who supplied/administered the medicine<br>• Record of any adverse effects (advise individuals GP/relevant medical practitioner). |

<table>
<tr><td></td><td>Depending on the clinical setting where administration is undertaken, the information should be recorded manually or electronically, in one (or more) of the following systems, as appropriate:<br>• Secondary Care Medical Notes<br>• Individual radiology specific systems.<br><br>NOTE: Prior to the examination, all individuals will be asked a series of questions from the specialised Patient Identification Protocol or equivalent in all Boards. Within NHSG the checklist will be scanned into the Radiology Information System (RIS) as a record following the procedures outlined in this PGD.</td></tr>
<tr><td>Audit</td><td>All records of the medicine specified in this PGD will be filed with the normal records of medicines in each practice/service. A designated person within each practice/service where the PGD will be used will be responsible for annual audit to ensure a system of recording medicines supplied/administered under a PGD.</td></tr>
<tr><td>References</td><td>Electronic Medicines Compendium<br>http://www.medicines.org.uk<br><br>
<table>
<tr><th>Medicine</th><th>Date of Revision</th><th>Date Accessed</th></tr>
<tr><td>Betaloc® I.V. Injection</td><td>17/02/20</td><td>17/03/21</td></tr>
<tr><td>Buscopan® 20mg/mL Solution for Injection</td><td>20/04/20</td><td>17/03/21</td></tr>
<tr><td>Carbex® Granules and Solution</td><td>March 2018</td><td>17/03/21</td></tr>
<tr><td>Glyceryl Trinitrate 500microgram Tablets (Accord Brand)</td><td>30/10/19</td><td>17/03/21</td></tr>
<tr><td>Klean-Prep® 69g Sachet Powder for Oral Solution</td><td>21/09/20</td><td>17/03/21</td></tr>
<tr><td>Duphalac® 3.335 g/5 ml Oral Solution</td><td>August 2020</td><td>17/03/21</td></tr>
<tr><td>Metoclopramide Hydrochloride 5mg/5mL oral Solution (Rosemount Brand)</td><td>20/09/19</td><td>17/03/21</td></tr>
</table></td></tr>
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NHS Grampian NHS Highland NHS Orkney NHS Shetland NHS Eileanan Siar Western Isles

**Appendix 1**

## Healthcare Professional Agreement to Administer Medicine(s) Under Patient Group Direction

**I:** _____ (Insert name)

**Working within:** _____ e.g. Area, Practice

Agree to administer the medicine(s) contained within the following Patient Group Direction:

## Patient Group Direction For The Administration Of Medicines Included In The Radiographers PGD Formulary By Radiographers Working Within NHS Grampian, Highland, Orkney, Shetland And Western Isles

I have completed the appropriate training to my professional standards enabling me to administer the medicine(s) under the above direction. I agree not to act beyond my professional competence, nor out with the recommendations of the direction.

**Signed:** _____

**Print Name:** _____

**Date:** _____

**Profession:** _____

**Professional Registration number/PIN:** _____

NHS Grampian NHS Highland NHS Orkney NHS Shetland NHS Eileanan Siar Western Isles

**Appendix 2**

## Healthcare Professionals Authorisation to Administer Medicine(s) Under Patient Group Direction

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| **The Lead manager/Professional** of each clinical area is responsible for maintaining records of all clinical areas where this PGD is in use, and to whom it has been disseminated. |
| **The Senior Nurse/Professional** who approves a healthcare professional to administer the medicine(s) under this PGD is responsible for ensuring that he or she is competent, qualified and trained to do so, and for maintaining an up-to-date record of such approved persons. |
| **The Healthcare Professional** that is approved to administer the medicine(s) under this PGD is responsible for ensuring that he or she understands and is qualified, trained and competent to undertake the duties required. The approved person is also responsible for ensuring that administration is carried out within the terms of the direction, and according to his or her individual code of professional practice and conduct. |
| **Patient Group Direction For The Administration Of Medicines Included In The Radiographers PGD Formulary By Radiographers Working Within NHS Grampian, Highland, Orkney, Shetland And Western Isles** |
| **Local clinical area(s) where the listed healthcare professionals will operate under this PGD:** |

| Name of Healthcare Professional | Signature | Date | Name of Manager | Signature | Date |
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| Patient Group Direction For The Administration Of Medicines Included In The Radiographers PGD Formulary By Radiographers Working Within NHS Grampian, Highland, Orkney, Shetland And Western Isles | | | | | |
|---|---|---|---|---|---|
| **Name of Healthcare Professional** | **Signature** | **Date** | **Name of Manager** | **Signature** | **Date** |
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# Appendix 3 - Medicine Monographs

**Medicine** **Page**

| Carbex® Sachet Sodium Bicarbonate 1.26g, Simethicone 0.042g Granules and Citric Acid 1g/10mL Solution (Administer) | |
|---|---|
| **Indication** | Gas producing agent for double contrast radiography of the gastrointestinal tract. |
| **Inclusion Criteria** | As per main PGD inclusion criteria and additionally;<br>• All individuals aged 12 years old and over. |
| **Exclusion Criteria** | As per PGD general exclusions as there are no specific exclusions for the use of Carbex®. |
| **Precautions and Special Warnings** | As per PGD general precautions as there are no specific precautions for the use of Carbex®.<br><br>There are no known effects of Carbex® on pregnancy or lactation. |
| **Legal Status** | Carbex® is a Prescription (P) Medicine. |
| **Dose/Maximum total dose** | The contents of one sachet (2.8g) of Carbex® granules should be consumed along with the included 10mL Carbex® solution.<br><br>**Maximum dose of one 2.8g sachet only allowed under this PGD.** |
| **Frequency of dose/Duration of treatment** | Once only during procedure. |
| **Maximum or minimum treatment period** | See Frequency of dose/Duration of treatment section above. |
| **Route/Method of Administration** | Oral administration<br><br>Open one sachet of Carbex® granules. Have the patient place the granules on their tongue. Have the patient immediately swallow the complete contents of the Carbex® solution 10mL bottle.<br><br>It is recommended that the barium should be swallowed thirty seconds later. |
| **Quantity to be administered** | One 2.8g sachet of Carbex® granules and included 10mL solution. |

| Carbex® Sachet Sodium Bicarbonate 1.26g, Simethicone 0.042g Granules and Citric Acid 1g/10mL Solution (Administer) | |
|---|---|
| **Potential Adverse Reactions** | No known effects. |
| **Advice** | No specific advice as regards the Carbex®, but as the patient will also be supplied with barium, advise them they can eat and drink as normal and to drink plenty of fluids and eat high-fibre foods for the first few days, to help stop the barium causing constipation. |
| **Follow up (If applicable)** | Individuals who have undergone barium meal or barium swallow examinations should remain under observation until they have been seen to recover from the procedure. It is not possible to specify an exact length of time, but patients should remain on the premises for at least 10–15 minutes.<br><br>Individuals should not leave if they are feeling unwell without speaking to the radiographer or GI Advanced Practice Radiographer first. If necessary, a doctor should be contacted for advice. If any complications arise during or immediately after the procedure then the opinion of a consultant or supervising radiologist should be sought. |
| **Storage** | Store in a dry place. Do not store above 25° C. |

| Glyceryl Trinitrate (GTN) 500microgram Tablets (Administer) | |
|---|---|
| **Indication** | To promote vasodilation and accuracy of CT angiography. |
| **Inclusion Criteria** | As per main PGD inclusion criteria and additionally;<br>• All individuals 16 years and over attending for a CT coronary angiogram. |
| **Exclusion Criteria** | As per main PGD exclusion criteria and additionally:<br>• Have had a previous reaction to Glyceryl Trinitrate (GTN)<br>• Are taking phosphodiesterase type 5 inhibitors (e.g. sildenafil, vardenafil, tadalafil)<br>• Have angina caused by hypertrophic obstructive cardiomyopathy as it may exaggerate outflow obstruction.<br>• Mitral stenosis<br>• Constrictive pericarditis<br>• Have possible increased intracranial pressure (e.g. cerebral haemorrhage or head trauma)<br>• Have closed angle glaucoma<br>• Have marked anaemia<br>• Severe hypotension (systolic blood pressure below 90mm Hg)<br>• Have rare hereditary problems of galactose intolerance, lapp lactase deficiency or glucose-galactose malabsorption<br>• Currently prescribed heparin<br>• Currently prescribed ergot alkaloids medications, e.g. Migril as this may oppose the coronary vasodilatation of nitrates<br>• Moderate or severe aortic stenosis (this will include all Transcatheter Aortic Valve Implantation (TAVI) referrals)<br>• Congenital heart disease especially if cyanotic or associated with pulmonary hypertension<br>• Moderate or severe pulmonary hypertension secondary to lung disease. |
| **Precautions and Special Warnings** | Caution is necessary in patients with severe hepatic or renal impairment, hypothyroidism, hypoxaemia, hypothermia or a recent history of myocardial infarction and malnutrition.<br><br>GTN should be used with caution in patients with cerebrovascular disease since symptoms may be precipitated by hypotension.<br><br>GTN may worsen hypoxaemia in patients with lung disease or cor pulmonale. Arterial hypotension with bradycardia may occur in patients with myocardial infarction; this is thought to be reflexly mediated. |

| Glyceryl Trinitrate (GTN) 500microgram Tablets (Administer) | |
|---|---|
| | The use of GTN could theoretically compromise myocardial blood supply in patients with left ventricular hypertrophy associated with aortic stenosis because of the detrimental effects of tachycardia and decreased aortic diastolic pressure. |
| **Legal Status** | GTN in tablet form is a Pharmacy (P) only medicine.<br><br>**NOTE:** The use of GTN for this indication is outside the terms of the marketing authorisation and constitutes an off-label use of GTN. As such, the individual must be informed prior to the administration that the use is off-label. |
| **Dose/Maximum total dose** | Single 500microgram dose.<br><br>**Maximum dose allowed under this PGD is 500micrograms.** |
| **Frequency of dose/Duration of treatment** | Single dose for procedure indicated. |
| **Maximum or minimum treatment period** | See Frequency of dose/Duration of treatment section above. |
| **Route/Method of Administration** | GTN tablets must be placed under the tongue (administered sublingually) and retained in the mouth until dissolved. |
| **Quantity to be administered** | One 500microgram tablet. |
| **Potential Adverse Reactions** | Treatment with other agents with hypotensive effects (e.g. vasodilators, antihypertensives, beta-blockers, calcium channel blockers and neuroleptics, tricyclic antidepressants and sapropterin) may potentiate the hypotensive effect of GTN tablets.<br><br>N-acetylcysteine may potentiate the vasodilator effects of GTN tablets.<br><br>There is a potential for drugs that cause dry mouth (e.g. anticholinergic, antimuscarinics, tricyclic antidepressants) to reduce the effectiveness of sublingual nitrates. |

<table>
<tr><th colspan="2">Glyceryl Trinitrate (GTN) 500microgram Tablets (Administer)</th></tr>
<tr><td></td><td>An enhanced hypotensive effect with sublingual apomorphine may occur as a result of concomitant administration with GTN tablets.<br><br>GTN Tablets may cause the following side effects;<br><br>Common<br>Headaches<br>Dizziness<br>Drowsiness<br>Tachycardia<br>Hypotension<br>Asthenia<br><br>Rare<br>Facial flushing<br>Fainting<br>Localised feeling of discomfort in the mouth or tongue, blistering or ulcers<br>Nausea and vomiting</td></tr>
<tr><td>Advice</td><td>Advice should be given on what to expect and what to do for major and minor reactions.</td></tr>
<tr><td>Follow up (If applicable)</td><td>If any complications arise during or immediately after the procedure then the opinion of a supervising radiologist should be sought.<br><br>All adverse incidents will be documented in the radiology report and DATIX or equivalent report should be completed. Adverse incidents will also be reported back to supervising radiologist.</td></tr>
<tr><td>Storage</td><td>Store below 25°C in a dry place and protect from light.<br><br>Add date when opening the packaging.<br><br>Close the cap tightly after removing a tablet.<br><br>Discard unused tablets after 8 weeks from opening.</td></tr>
</table>

| Hyoscine Butylbromide (Buscopan®) 20mg/mL Solution for Injection (Administer) | |
|---|---|
| **Indication** | Hyoscine butylbromide is used as a prophylactic anti-peristaltic agent in radiological procedures such as CT colonography, CT enterography and MR abdomen/pelvis, to enable the successful completion of the procedure and optimise views. |
| **Inclusion Criteria** | As per main PGD inclusion criteria and additionally;<br>• All individuals aged 12 years or over attending for procedures performed by a radiographer, e.g. CT colonography, CT enterography and MR abdomen/pelvis. |
| **Exclusion Criteria** | As per main PGD exclusion criteria and additionally:<br>• Aged less than 12 years old<br>• Individuals with any of the following;<br>  ○ Narrow angle glaucoma<br>  ○ Prostate enlargement with urinary retention<br>  ○ Mechanical stenosis in the gastrointestinal tract<br>  ○ Paralytical or obstructive ileus<br>  ○ Myasthenia gravis<br>  ○ Tachycardia (Heart Rate >100bpm)<br>  ○ Megacolon<br>  ○ Acute porphyria<br>• History of significant local or general allergic reaction to a previous administration of hyoscine butylbromide injection (Buscopan®)<br>• Should not be used during pregnancy or lactation. |
| **Precautions and Special Warnings** | Because of the possibility that anticholinergics may reduce sweating, hyoscine butylbromide injection (Buscopan®) should be administered with caution to patients with pyrexia.<br><br>Hyoscine butylbromide injection (Buscopan®) ampoules can cause tachycardia, hypotension and anaphylaxis, therefore use with caution in patients with cardiac conditions such as cardiac failure, coronary heart disease, cardiac arrhythmia or hypertension, and in cardiac surgery. Monitoring of these patients is advised. Emergency equipment and personnel trained in its use must be readily available.<br>Patients taking any of the medications listed in the concurrent medications section should be discussed with an appropriate supervisor before being included for treatment under this PGD. |
| **Legal Status** | Hyoscine butylbromide injection (Buscopan®) is a Prescription-only Medicine (POM). |

| Hyoscine Butylbromide (Buscopan®) 20mg/mL Solution for Injection (Administer) | |
|---|---|
| | **NOTE:** The use of buscopan® in children aged 12-18 years old is outside the terms of the marketing authorisation and constitutes an off-label use of the medicine. The individual should be informed prior to the administration that the use is off-label. |
| **Dose/Maximum total dose** | 20mg dose.<br><br>The lowest dose that provides sufficient enhancement for diagnostic purposes should be used.<br><br>**Maximum total dose allowed under this PGD is 40mg during one examination.** |
| **Frequency of dose/Duration of treatment** | Intravenous antispasmodics have a relatively short duration of action therefore it is acceptable to give a further dose of 20mg after 10 minutes if there is insufficient pyloric or colonic relaxation. |
| **Maximum or minimum treatment period** | See Frequency of dose/Duration of treatment section above. |
| **Route/Method of Administration** | Administer intravenously. Intravenous injection should be performed 'slowly' (in rare cases a marked drop in blood pressure and even shock may be produced by hyoscine butylbromide injection (Buscopan®)). |
| **Quantity to be administered** | Dependent on clinical requirement. |
| **Potential Adverse Reactions** | The anticholinergic effect of drugs such as antidepressants, antihistamines, quinidine, amantadine, antipsychotics (e.g. phenothiazines, butyrophenones), disopyramide and other anticholinergics (e.g. tiotropium, ipratropium, atropine-like compounds) may be intensified by Buscopan.<br><br>The tachycardic effects of beta-adrenergic agents may be enhanced by Buscopan.<br><br>Concomitant treatment with dopamine antagonists such as metoclopramide may result in diminution of the effects of both drugs on the gastrointestinal tract. |

| Hyoscine Butylbromide (Buscopan®) 20mg/mL Solution for Injection (Administer) | |
|---|---|
| | If the individual is taking any of the above medicines, the MR or CT radiographer must discuss this with the supervising radiologist before proceeding. Any such patient would not be excluded from receiving treatment under this PGD unless they met any of the exclusion criteria. Discussion with medical staff in regard to concurrent medication must always be documented.<br><br>**NOTE:** It is the individual radiographer's decision and responsibility as to whether or not such individuals be treated under the PGD should there be issues in regard to concurrent medications.<br><br>The MR or CT radiographer will use the current BNF and SmPC to establish potential interactions with other less common medications. If in doubt about medicine compatibility, consult with the supervising radiologist.<br><br>Common side effects reported include but are not limited to; Visual accommodation disturbances, tachycardia, dizziness and dry mouth. |
| **Advice** | Advice should be given on what to expect and what to do for major and minor reactions.<br><br>Advice should be given to seek urgent ophthalmological advice when patients develop a painful, red eye with loss of vision after the injection of hyoscine butylbromide injection (Buscopan®).<br><br>Individuals should be advised to avoid consumption of alcohol for 24 hours.<br><br>If individuals experience transient blurred vision disturbances, dizziness or drowsiness then they should be advised not to drive or operate machinery until it subsides. The episode is normally self-limiting. |
| **Follow up (If applicable)** | Recipients of hyoscine butylbromide should remain under observation until they have been seen to recover from the procedure. It is not possible to specify an exact length of time, but patients should remain on the premises for at least 10 – 15 minutes. |

| Hyoscine Butylbromide (Buscopan®) 20mg/mL Solution for Injection (Administer) | |
|---|---|
| | If any complications arise during or immediately after the procedure then the opinion of a supervising radiologist should be sought.<br><br>All adverse incidents will be documented in the radiology report and DATIX or equivalent report should be completed. Adverse incidents will also be reported back to supervising radiologist. |
| **Storage** | Store below 30°C.<br><br>Store in the outer carton. For single use only. |

| Klean-Prep® 69g Sachet Powder for Oral Solution (Administer) | |
|---|---|
| **Indication** | For MRI Enterography |
| **Inclusion Criteria** | As per main PGD inclusion criteria and additionally;<br>• Individuals aged 12 years and over. |
| **Exclusion Criteria** | As per main PGD exclusion criteria and additionally:<br>• Individuals aged under 12 years<br>• Gastrointestinal obstruction or perforation ileus<br>• Gastric retention<br>• Acute colitis and toxic megacolon<br>• Known cardiac disease<br>• Moderate to severe renal disease<br>• Woman who are pregnant or currently breast feeding. |
| **Precautions and Special Warnings** | Caution should be used in individuals with an impaired gag reflex, reflux oesophagitis, or diminished levels of consciousness.<br><br>Klean-Prep® contains aspartame, which is metabolised to phenylalanine. This may be harmful for individuals with phenylketonuria. |
| **Legal Status** | Klean-Prep® 69mg Sachets are a Pharmacy (P) Medicine. |
| **Dose/Maximum total dose** | 1 sachet diluted in 1 litre of water.<br><br>**Maximum total dose allowed under this PGD is 1 sachet (69mg) during one examination.** |
| **Frequency of dose/Duration of treatment** | Once only treatment. |
| **Maximum or minimum treatment period** | See Frequency of dose/Duration of treatment section above. |
| **Route/Method of Administration** | Oral |
| **Quantity to be administered** | One (69mg) sachet. |

| Klean-Prep® 69g Sachet Powder for Oral Solution (Administer) | |
|---|---|
| **Potential Adverse Reactions** | Oral medication taken within one hour of administration of Klean-Prep may be flushed from the gastro-intestinal tract and not absorbed.<br><br>Side effects with unknown frequency include; Angioedema; arrhythmia; chills; confusion; dehydration; dizziness; dyspnoea; electrolyte imbalance; fever; flatulence; gastrointestinal discomfort; headache; malaise; nausea; palpitations; seizure; skin reactions; thirst and vomiting. |
| **Advice** | Advice should be given on what to expect and what to do for major and minor reactions.<br><br>Advise individual that there may be a continued laxative effect post scan<br><br>Individual should be informed that whilst uncommon a mild allergic reaction such as a rash, itchiness, feeling hot or cold, runny nose, watery eyes can occur and that they must inform a healthcare professional if they experience these symptoms. |
| **Follow up (If applicable)** | Individuals should be assessed prior to being discharged from the department for any adverse effects from the administered medicine.<br><br>Advise of the possible adverse effects and where to seek advice in the event of a suspected adverse reaction developing.<br><br>If any complications arise during or immediately after the procedure then the opinion of a supervising radiologist should be sought.<br><br>All adverse incidents will be documented in the radiology report and DATIX or equivalent report should be completed. Adverse incidents will also be reported back to supervising radiologist. |
| **Storage** | • Store at room temperature and do not freeze. |

| Lactulose (Duphalac) 3.335g/5mL Oral Solution (Administer) | |
|---|---|
| **Indication** | For MRI Enterography. |
| **Inclusion Criteria** | As per main PGD inclusion criteria and additionally;<br>• Individuals aged 2 years and over. |
| **Exclusion Criteria** | As per main PGD exclusion criteria and additionally:<br>• Under 2 years of age<br>• Galactosaemia<br>• Gastro-intestinal obstruction, digestive perforation or risk of digestive perforation. |
| **Precautions and Special Warnings** | The defecation reflex may be altered during the treatment with lactulose. |
| **Legal Status** | Lactulose (Duphalac) 3.335g/5mL Oral Solution is a Pharmacy (P) Medicine. |
| **Dose/Maximum total dose** | 50mLs<br><br>To be supplied with 1 litre of water which is required to be consumed pre-scan.<br><br>**Maximum total dose allowed under this PGD is 50mLs.** |
| **Frequency of dose/Duration of treatment** | Once only administration. |
| **Maximum or minimum treatment period** | See Frequency of dose/Duration of treatment section above. |
| **Route/Method of Administration** | Oral |
| **Quantity to be administered** | 50mL |
| **Potential Adverse Reactions** | Refer to the product Summary of Product Characteristics (SmPC) for full details of known adverse effects.<br>The below list details only commonly reported adverse effects (>1 in 100) and does not represent all the product's known adverse effects: Nausea (can be reduced by administration with water), vomiting, flatulence, cramps and abdominal discomfort. |

| Lactulose (Duphalac) 3.335g/5mL Oral Solution (Administer) | |
|---|---|
| **Advice** | Advice should be given on what to expect and what to do for major and minor reactions.<br><br>Advise individual to consume in tandem with water if too sweet to consume in one administration.<br><br>Advise individual that bowel movements may be softer following administration. |
| **Follow up (If applicable)** | If any complications arise during or immediately after the procedure then the opinion of a supervising radiologist should be sought.<br><br>All adverse incidents will be documented in the radiology report and DATIX or equivalent report should be completed. Adverse incidents will also be reported back to supervising radiologist. |
| **Storage** | Do not store above 25°C. Do not refrigerate or freeze. |

| Metoclopramide Hydrochloride 5mg/5mLOral Solution (Administer) | |
|---|---|
| **Indication** | To accelerate small bowel transit during small bowel study examinations. |
| **Inclusion Criteria** | As per main PGD inclusion criteria and additionally;<br>• Individuals aged 12 years and over. |
| **Exclusion Criteria** | As per main PGD exclusion criteria and additionally:<br>• Individuals aged less than 12 years of age<br>• Individual with a history of gastro-intestinal obstruction, perforation or haemorrhage<br>• Individual 3–4 days after gastro-intestinal surgery<br>• Individual with phaeochromocytoma<br>• Individual with hypersensitivity to metoclopramide hydrochloride or any of the excipients<br>• Methaemoglobinaemia<br>• NADH cytochrome-b5 deficiency<br>• Individual who do not have a pylorus, e.g. gastrectomy, gastrojejunostomy, gastric bypass<br>• Parkinson's disease or history of neuroleptic or metoclopramide-induced tardive dyskinesia<br>• Epilepsy<br>• Individual who are hypersensitive to procaine or procainamide<br>• Breastfeeding. |
| **Precautions and Special Warnings** | Metoclopramide Hydrochloride should be used with caution in the following patients:<br>• Frail and/or elderly as there is an increased risk of side effects<br>• In individuals aged 12 – 19 years old as there is an increased risk of extrapyramidal effects<br>• Atopic allergy (including asthma). |
| **Legal Status** | Metoclopramide Hydrochloride 5mg/5mLOral Solution is a Prescription only Medicine (POM).<br><br>**N.B.** The use of metoclopramide in children aged 12-18 years for the indication in this PGD is outside the terms of the marketing authorisation and constitutes an off-label use of metoclopramide. As such, the individual must be informed prior to the administration that the use is off-label. |
| **Dose/Maximum total dose** | Individuals aged 18 years and over - Single dose of 10mL.<br><br>Individuals aged 12 – 18 years of age – Single dose of 5mL. |

| Metoclopramide Hydrochloride 5mg/5mLOral Solution (Administer) | |
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| | **Maximum dose of 10mL only allowed under this PGD.** |
| **Frequency of dose/Duration of treatment** | Once only during procedure. |
| **Maximum or minimum treatment period** | See Frequency of dose/Duration of treatment section above. |
| **Route/Method of Administration** | Oral administration<br><br>For individuals aged 18 years and over 10mL of metoclopramide hydrochloride 5mg/5mL oral solution is provided to the patient for self-administration prior to the ingestion of E-Z-Paque® solution.<br><br>For individuals aged 12 – 18 years 5mL of metoclopramide hydrochloride 5mg/5mL oral solution is provided to the patient for self-administration prior to the ingestion of E-Z-Paque® solution. |
| **Quantity to be administered** | Individuals 18 years of age and over - One 10mL dose only.<br>Individuals 12 – 18 years of age – One 5mL dose only. |
| **Potential Adverse Reactions** | Refer to the product Summary of Product Characteristics (SmPC) for full details of known adverse effects.<br>The below list details only commonly reported adverse effects (>1 in 100) and does not represent all the product's known adverse effects:<br>• Diarrhoea<br>• Asthenia<br>• Somnolence<br>• Extrapyramidal disorders<br>• Depression<br>• Restlessness. |
| **Advice** | Metoclopramide may cause drowsiness, dizziness, dyskinesia and dystonias which can affect the vision and also interfere with the ability to drive and operate machinery. |
| **Follow up (If applicable)** | Individual who have undergone small bowel study examinations should remain under observation until they have been seen to recover from the procedure. It is not possible to specify an exact length of time, but individual should remain on the premises for at least 10-15 minutes. |

| Metoclopramide Hydrochloride 5mg/5mLOral Solution (Administer) | |
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| | Individual should not leave if they are feeling unwell without speaking to the radiographer or GI Advanced Practice radiographer first. If necessary, a doctor should be contacted for advice. If any complications arise during or immediately after the procedure then the opinion of a consultant or supervising radiologist should be sought. |
| **Storage** | Store below 25°C and keep in the original outer carton. |

| Metoprolol Tartrate (Betaloc) 5mg/5mL Solution for Injection (Administer) | |
|---|---|
| **Indication** | Administered to lower heart rate before a CT Coronary Angiogram (CTCA). This reduces ectopic activity and heart rate variability resulting in better diagnostic images. |
| **Inclusion Criteria** | As per main PGD inclusion criteria and additionally;<br>• Individuals 16 years of age and over who require a CTCA to show the anatomy of the coronary arteries who have a heart rate greater than 65 beats per minute. |
| **Exclusion Criteria** | As per main PGD exclusion criteria and additionally:<br>• They have a known allergy or hypersensitivity to other beta-blocker medicines (such as atenolol or propranolol)<br>• They have poorly controlled asthma or are currently wheezy<br>• They have or have had any of the following heart problems:<br>  ○ Suspected current heart attack<br>  ○ Suspected current cardiogenic shock<br>  ○ Heart failure which is not under control<br>  ○ Second or third-degree heart block<br>  ○ Bradycardia (<50bpm)<br>• They are hypotensive (BP < 110/60mmHg)<br>• Severe aortic stenosis<br>• Congenital heart disease (discuss with cardiologist)<br>• Decompensated cardiac failure (pulmonary oedema, hypoperfusion or hypotension)<br>• Sick sinus syndrome (unless a permanent pacemaker is in place)<br>• Severe peripheral arterial circulatory disease<br>• They have untreated phaeochromocytoma<br>• They have metabolic acidosis<br>• They are currently taking verapamil or diltiazem<br>• They are pregnant. |
| **Precautions and Special Warnings** | Care should be taken if the patient currently has or may have had previously any of the conditions listed below. However, it should be noted that these conditions do not exclude individual from receiving metoprolol tartrate. Radiographers should exercise their professional judgement with regard to administering metoprolol tartrate. If there is any doubt as to the patient's suitability they should be discussed with radiologist.<br><br>• Prinzmetal's angina<br>• Poor blood circulation |

| Metoprolol Tartrate (Betaloc) 5mg/5mL Solution for Injection (Administer) | |
|---|---|
| | • Controlled heart failure<br>• First-degree heart block<br>• Severe liver dysfunction<br>• Psoriasis<br>• Although contra-indicated in severe peripheral arterial circulatory disorder, care should be taken with less severe peripheral arterial circulatory disorders<br>• Currently taking ivabradine<br>• Administration of metoprolol tartrate may increase both the sensitivity towards allergens and the severity of anaphylactic reactions. |
| **Legal Status** | Metoprolol Tartrate (Betaloc) 5mg/5mLis a Prescription-only Medicine (PoM).<br><br>**NOTE:** Administration for this indication constitutes an off-label use of metoprolol tartrate. However the administration of intravenous metoprolol tartrate is a recognised practice in CTCA as its use allows a reduction in effective radiation dose, significantly reduces scanning time, is safe, well tolerated and maintains diagnostic quality. The individual should be informed prior to the administration that the use is off-label. |
| **Dose/Maximum total dose** | The dose of metoprolol tartrate should be adjusted to the individual requirements of the patient.<br><br>Starting dose of 5mg intravenously over one minute followed by a saline flush, with re-administration of the same dose every 2-3 minutes until the heart rate is below 65bpm, or until maximum dose of 20mg has been administered.<br><br>**Maximum dose allowed under this PGD is 20mg.** |
| **Frequency of dose/Duration of treatment** | See Dose/Maximum total dose section above. |
| **Maximum or minimum treatment period** | See Dose/Maximum total dose section above. |
| **Route/Method of Administration** | Metoprolol tartrate is administered intravenously. |

| Metoprolol Tartrate (Betaloc) 5mg/5mL Solution for Injection (Administer) | |
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| **Quantity to be administered** | Dependent on clinical requirement, see Dose/Maximum total dose section above. |
| **Potential Adverse Reactions** | Care should be taken if the individual is currently prescribed, or has recently taken any other medications. Under this PGD, the cardiologist and radiologist will have pre-prescribed the metoprolol tartrate and will have given consideration to all current and recent medications.<br><br>The radiographer has a duty of care under this PGD to check which medications the patient is on and list them in the CTCA checklist. However, it should be noted that most medications (with the exception of those named in the exclusion criteria) do not exclude individual from receiving metoprolol tartrate.<br><br>Radiographers should exercise their professional judgement with regard to administering metoprolol tartrate. If there is any doubt as to the patient's suitability they should be discussed with radiologist.<br><br>Metoprolol tartrate may cause the following side effects:<br><br>**Common**<br><br>Slow pulse rate<br>Pounding heart beat<br>Dizziness (especially on standing)<br>Abdominal Pain<br>Headache<br>Nausea<br>Shortness of breath on exertion<br>Diarrhoea |
| **Advice** | Advice should be given on what to expect and what to do for major and minor reactions. |
| **Follow up (If applicable)** | Blood pressure and heart rate monitored post examination (Individual should remain in the department for 30 minutes) and prior to them leaving the department.<br><br>If any complications arise during or immediately after the procedure then the opinion of a supervising radiologist should be sought.<br><br>All adverse incidents will be documented in the radiology report and DATIX or equivalent report should be completed. Adverse incidents will also be reported back to supervising radiologist. |

| Metoprolol Tartrate (Betaloc) 5mg/5mL Solution for Injection (Administer) | |
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| **Storage** | Store below 25ºC in a dry place and protect from light.<br><br>The medicine should be used immediately after opening |