PostScript

NHS Greater Glasgow and Clyde

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This edition contains articles on:

A focus on PPIs

New NHSGGC guidance on oral PPI prescribing on discharge from hospital is now available on Staffnet. This includes a comprehensive list of indications for which PPIs may be used as well as advice on dose, frequency and recommended treatment duration. There is information on which indications are unlicensed. Where initiation of off-label treatment occurs in hospital, it is the responsibility of the consultant to ensure that appropriate information is provided to the GP as per the NHSGGC policy. Some examples of the treatments recommended are:

- GORD: Omeprazole 20mg once daily or lansoprazole 30mg once daily for 4-8 weeks. If symptoms persist, omeprazole 40mg or lansoprazole 30mg once daily until symptoms are controlled. Then reduce dose over two weeks; first to omeprazole 20mg once daily or lansoprazole 15mg once daily, then to as required dosing.
- Oesophageal cancer: PPI not required
- Gastric ulcer: Omeprazole 20mg once daily or lansoprazole 30mg once daily. Continue until confirmation of healing from a repeat endoscopy after 4-8 weeks.
- Hiatus hernia (before repair): If patient presents symptoms of GORD, treat as for GORD. If patient does not present symptoms of GORD, PPI not required. After repair: PPI not required
- Anaemia with no signs of underlying GI bleed: PPI not required.

There may be some indications added to the table where a PPI is not required, but that may lead to the development of GI symptoms such as acid reflux or dyspepsia. In that case, PPIs may be used for the management of those specific symptoms, not the primary clinical condition.

Safety

Increasing evidence suggests that PPIs may be related to adverse events such as hypomagnesaemia and increased risk of bone fractures. This has been highlighted by MHRA as a drug safety concern and was previously highlighted in *PostScript* 70.

These adverse events appear to be associated with high doses and long treatment courses (>1 year). In order to minimise risk it is recommended that the lowest effective dose is prescribed for the shortest duration appropriate for the condition being treated.

Long-term treatment with PPIs should be reviewed periodically. Note that if long-term treatment needs to be stopped this should be done slowly, rather than stopped abruptly, to prevent symptoms of rebound acid hypersecretion.

A tale of two patients

A 56 year old woman developed vomiting and diarrhoea, most likely due to infection with the winter vomiting virus. Her usual medication was omeprazole 20mg daily and amlodipine 5mg daily. She had a history of excess alcohol consumption. Two days after the vomiting and diarrhoea had settled her GP referred her for admission to hospital because she was unable to care for herself due to weakness and anorexia. On admission there were no abnormal physical findings. Her serum magnesium was low at 0.40mmol/L and her serum potassium was also low at 3.0mmol/L, but the rest of her results were unremarkable. Her omeprazole was discontinued and the magnesium and potassium were replaced intravenously. The following morning her symptoms of weakness had resolved and she was eating well.

In primary care, a Glasgow GP saw a patient on long term PPI treatment who presented with dizziness and falls. There were no abnormal neurological findings. He considered electrolyte imbalance as a potential cause, and being aware of the recent information on long term PPI use, had cause to test serum magnesium levels. Magnesium levels were found to be low and the PPI was stopped. Serum magnesium returned to normal and symptoms resolved.

This highlights the potential to consider adverse drug effects as a cause of some presentations, especially in the absence of clinical signs. Many patients present in primary care with non-specific issues which can be difficult to explain.

For all ADTC decisions see http://www.ggcprescribing.org.uk/blog/category/news/

Learning points:

- Symptoms of hypomagnesaemia include fatigue, tetany, delirium, convulsions, dizziness and ventricular arrhythmia. These may begin insidiously and so the cause may be overlooked.
- Always use the lowest dose PPI for the shortest length of time. Record indication for starting treatment and review periodically.
- If considering stopping PPI, note original indication and consider alternatives.
- Consider that certain patient groups may be more at risk of hypomagnesaemia if nutrition is status poor, eg alcohol misuse.
- Ruling out possible causes is an important part of the diagnostic process. If hypomagnesaemia had not been identified, these patients may have been given unnecessary drug therapy to treat the symptoms rather than the cause. Accurate diagnosis helps to avoid polypharmacy.

PostScript Extra 21: Drug induced QT prolongation

Prolongation of the QT interval can lead to a life threatening ventricular arrhythmia known as torsades de pointes which can result in sudden cardiac death. There are a number of widely used drugs which are known to cause QT prolongation. Recently there have been warnings relating to drug-induced QT prolongation for citalopram, domperidone and ondansetron. Extra vigilance is required by healthcare professionals to be alert to the risk of drug induced QT prolongation and drug interactions. For more details of the issue, clinical scenarios and a flowchart to guide practice see our website.

Patient safety: opioid overdose

A patient had recently been discharged from the hospice with a terminal diagnosis. One of the hospice clinical nurse specialists (CNS) visited the patient in the late afternoon. When the CNS entered the house, the patient had just taken a breakthrough oral dose of oxycodone. The CNS noticed that the bottle was oxycodone 10mg/ml concentrated oral solution. This is ten times the strength of the regular liquid and is rarely used. The hospice team had recommended that the GP prescribe oxycodone, but this strength is rarely used in the hospice.

Attempts were made to contact the GP surgery to clarify the prescription. The patient was alert, so there were no immediate concerns. The CNS checked exactly how much had been taken. At this point the error in the dosage was identified. The 50mg dose that the patient received was ten times higher than recommended.

About 15 to 20 minutes after the dose had been taken, the patient showed signs of becoming semi-comatose and her respiratory rate dropped. One of the nurses promptly rang for an ambulance and a paramedic attended. The patient responded well to treatment for the overdose at the scene. She had expressed that her preferred place of end of life care was at home, so it was considered inappropriate to admit her to hospital. The patient was offered appropriate out of hours support and arrangements were made for the GP and nurses to return. The syringe driver was restarted later that evening when it was deemed safe.

Learning Points

A number of learning points were highlighted for the different professions (see below). Good communication between healthcare professionals and patients or carers is vital for safe patient care. Having contact numbers for other members of the healthcare team and a means to contact them promptly in an urgent situation would be helpful.

GP Practice

Issue	Possible Solution
The GP had chosen the wrong product from the drop down menu. The concentrate was the first oral liquid product on the list.	Oxycodone liquid 5mg/5ml has been added to the Preferred list for the next EMIS Formulary update so that it is in bold and more obvious to prescribers.
The GP prescribing system presents drugs in alphabetical order by default with Formulary Preferred choices in bold.	Practices can sort the list by frequency of use. Choosing this option will help keep more unusual items from the top of the list.
The GP prescribing system does warn about high strength opioid products; however the prescriber was not aware of these.	Prescribers need to be alert to warnings on the system, especially for products that they are not familiar with.
There were a number of attempts to contact the practice. When the nurse managed to speak to someone at the practice, it was difficult to speak to a doctor.	GP practices should have a way to allow other professionals timely access to a GP to question potentially dangerous situations. The person making the phone call must ensure that the practice staff are aware of the serious and urgent nature of the call.

Community Pharmacy

Issue	Possible Solution
Community pharmacists may not have information about a patient's clinical situation. This makes assessment of suitability of medicines difficult, especially when the prescription is being collected by someone who is not the patient or their next-of-kin.	Prompt supply must never be at the expense of patient safety.
For unusual prescription items, patients or carers may have to visit more than one pharmacy before obtaining stock. It must never be assumed that the initial pharmacy have verified the clinical suitability of the prescription.	Unless the suitability of the product is known, it may be prudent to verify all prescriptions for concentrated opioids with the prescriber.

Hospice Clinical Nurse Specialist

Issue	Possible Solution
The CNS does not prescribe directly, but makes recommendations to the GP about appropriate treatment. The recommendation was made verbally by phone.	It is best practice to communicate clinical information in writing. Prescribers may not be aware that there is more than one product available. The recommendation including dose and strength must be unambiguous.

Case studies are fictionalised for the purposes of education and prevention of future events.

ADTC decisions summary

See the website for full details of indications and restrictions.

Some additions to the *Adult Formulary*:

- Aclidinium as maintenance bronchodilator treatment for adults with COPD.
- 5-aminolaevulinic acid for mild to moderate actinic keratosis on the face and scalp. Restricted to use by consultant dermatologists.
- Dexmedetomidine for sedation in adult intensive care units restricted to use in accordance with local protocol.
- Ferric carboxymaltose and iron isomaltoside for iron deficiency. Restrictions apply.
- Perampanel for adjunctive treatment of partial-onset seizures. Restricted to specialist initiation.
- Ticagrelor for co-administration with aspirin for the prevention of atherothrombotic events in adult patients with non ST elevation myocardial infarction or ST elevation myocardial infarction. Implementation plans to support prescribing are currently in development.
- Ustekinumab for moderate to severe plaque psoriasis who have failed to respond to or have a contraindication to other systemic therapies. Restricted to specialist use.
- Zopiclone has been added to the *Preferred List* to replace temazepam for the short-term treatment of insomnia.

The following medicines were among those not added to the *Adult Formulary*

- Argatroban as anticoagulant therapy in adult patients with heparin induced thrombocytopenia.
- Adalimumab for moderately active Crohn's disease. This drug is included in the *Formulary* for severely active Crohn's disease.
- Interferon beta-1a (Rebif®) for patients with a single demyelinating event.
- Olmesartan / amlodipine / hydrochlorothiazide (Sevikar HCT®) for hypertension.
- Racecadotril for acute diarrhoea.
- Ranolazine for angina.

The following medicines were among those added to the *Paediatric Formulary*

- Sildenafil for pulmonary arterial hypertension.

The following medicines were among those not added to the *Paediatric Formulary*

- Racecadotril for acute diarrhoea.

Non-*Formulary* pending protocol / consultation

- Denosumab for prevention of skeletal events in adults with bone metastases from solid tumours.
- Ranibizumab for visual impairment due to diabetic macular oedema in adults.

BNF smartphone apps

The NICE BNF and NICE BNFC (British National Formulary for Children) smartphone applications are now available for download by healthcare professionals who work for or who are contracted by NHS Scotland. The apps provide easy access to the latest up-to-date prescribing information from the BNF and BNFC and are free via the Apple App Store.

Users will need to enter their NHS Education for Scotland Athens user name and password to activate the app and download the content. The apps do not rely on a network connection once activated and provide direct offline access to the latest version of the BNF and BNFC. If you don't have an NHS Scotland Athens password, register at The Knowledge Network (www.knowledge.scot.nhs.uk).

Fingolimod: oral therapy for multiple sclerosis

Fingolimod is added to the Total Formulary restricted to use as single disease modifying therapy in highly active relapsing remitting multiple sclerosis in adult patients with high disease activity despite treatment with a beta-interferon with an unchanged or increased relapse rate or ongoing severe relapses, as compared to the previous year.

This new product is the first orally active disease modifying preparation licensed for multiple sclerosis (MS). There has been significant media attention and interest from patient groups who welcome the introduction of oral therapies. This is not considered a first line therapy. There are some other new oral treatments for MS on the horizon.

It has been added to the Total Formulary after being accepted by SMC restricted to use as single disease modifying therapy in highly active relapsing remitting multiple sclerosis (RRMS) in adult patients with high disease activity despite treatment with a beta-interferon with an unchanged or increased relapse rate or ongoing severe relapses, as compared to the previous year. Fingolimod reduced the annualised relapse rate significantly more than a beta-interferon in patients with clinically active RRMS. An indirect comparison also demonstrated similar efficacy to another disease modifying therapy in established use in RRMS.

Fingolimod has a complex safety profile and long-term safety data are lacking. Potential cardiac side effects mean hospital admission is needed for the first dose and ocular side effects require ophthalmology review. Treatment with fingolimod is not recommended for patients at known risk of cardiovascular adverse events. The licensed indications for fingolimod and natalizumab are identical, but their place in therapy is different based on SMC restrictions. A local guideline is in development which clarifies the place in therapy for the different agents

Change to home oxygen service

Home oxygen for adults should only be prescribed following assessment by an appropriately trained respiratory clinician.

Home oxygen for children should only be prescribed following assessment by a paediatrician, neonatologist or cardiologist.

The National Advisory Group for Respiratory MCNs' new guidance (*Domiciliary Oxygen Therapy Service National Guidance Best Practice*) will result in changes to oxygen provision. Oxygen provision can be summarised as follows:

- Oxygen is a drug which requires a prescription.
- Oxygen is a treatment for hypoxemia, not breathlessness.
- Significant hypoxemia in adults requiring treatment is defined as PaO2 < 8kPa (SPO2 <90% in room air).
- Oxygen has no impact on the sensation of breathlessness in non-hypoxemic patients.

The key recommendations for prescribing are as follows:

- Home oxygen for adults should only be prescribed following assessment by an appropriately trained respiratory clinician.
- Home oxygen for children should only be prescribed following assessment by a paediatrician, neonatologist or cardiologist.
- Health Boards should compile a local list of authorised oxygen prescribers

NHS Scotland is planning changes to the way that home oxygen is delivered to ensure patients are receiving the most appropriate therapy, and to ensure best value for money. Many patients receiving home oxygen may not have had a full respiratory assessment from secondary care. The new equipment and technology can provide a more convenient and cost effective solution for patients.

Community pharmacy oxygen contractors will cease to supply oxygen to patients. Dolby Medical will take over the responsibility for the provision of oxygen to patients directly to their home. The transition to the new service should start in February 2013 and be complete by the end of March 2013.

Further details, including Frequently Asked Questions, can be found by clicking on the Home Oxygen Service link at NHS Health Facilities Scotland website. There is a local NHSGGC transition group which is led by Cath McFarlane, General Manager, ECMS. Any questions on the local planning process can be directed to Karen Ross.

www.ggcprescribing.org.uk

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