Code A - PA (Nursing & Clinical Governance)

From: Watling, Jeff [Code A

Sent: 11 March 2004 18:15

To: Allen Nick 2003; Bagshaw Hazel 2003; Brember Janet 2003; Cameron Fiona; Dalby Ann; Fellows Elizabeth 2003; Helen McHale; Holden Andrew (J82098) SWAN SURGERY GU32 3AB; Hovenden Katie 2003; Ian Reid; Jane Marshall; Lewkowicz Nicholas (J82154) FAREHAM HEALTH CENTRE PO16 7ER; Paula Diaper; Peach Jan (J82006) GOSPORT HEALTH CENTRE PO12 3PN

Subject: PRINTED AND PUT IN B/U FILE FOR MONDAY - March Meeting of Guidelines and Medicines Management Committee

I enclose agenda papers for the meeting on at 12.30 pm on 15th March. I am sorry, Katie, for not changing date to accommodate you but there are double clashes for some of us next week with Oak Park and Form and Meds meetings. The venue for Monday's meeting is also changed to Elderly Services Seminar Room, South Block, QAH. Please also note potential changes of dates for meetings later in the year. Please confirm availability for these.

<<AGENDA March 2004.doc>> <<Notes January 2004.doc>> <<Guidelines Template March 2004.doc>> <<Guidelines Template Metronidazole March 2004.doc>>

The guidelines template metronidazole above is a worked example of how the template should look in practice. The following are revised guidelines, which will be modified once we get approval for the modified format.

<<medication History Taking Guideline Mar 2004.doc>> <<Antibiotic prophylaxis summary Mar 2004.doc>> <<2Antibiotic prophylaxis tables Mar 2004.doc>> <<Vaginal Infections Mar 2004.doc>>

<<Treatment of community acquired pneumonia Mar 2004.doc>> <<Syringe Mixing of Analgesics Antiemetics Mar 2004.doc>> <<magnesium sulphate admin guidelines Mar 2004.doc>>

New Guidelines for approval

<<medication History Taking Guideline Mar 2004.doc>> <<Metronidazole Compatibility Mar 2004.doc>> <<metronidazolecompatRef38.01PHPS 07001U Mar 2004.doc>> <<Treatment of cellulitis 0310 Mar 2004.doc>> <<Treatment of cellulitis.form Jan 2004.doc>> <<Drugs with Food and Drinks Mar 2004.doc>> <<Drugs with food and drinks PHPS 07001U Mar 2004.doc>> <<Tablets Soluble in Water Mar 2004.doc>> <<Tablets soluble in Water form ref100.01 PHPS 07001U Mar 2004.doc>>

We are missing the omeprazole revised guideline, which I hope to be able to send you tomorrow.

Jeff

Jeff

Jeff Watling
Head of Purchasing/Pharmacy Services Manager
Tel: Code A Fax: Code A

Meeting 15/3
@ 12.30

East Hants PCT
Fareham and Gosport PCT
Portsmouth City PCT
Portsmouth Hospitals NHS Trust
Royal Hospital, Haslar
Portsmouth & SE Hampshire LM Committee
West Hampshire NHS Trust

Guidelines and Medicines Management Subcommittee

Elderly Services Seminar Room, South Block, Queen Alexandra Hospital. 12.30 to 2.00pm Monday 15th March 2004. Lunch will be available

AGENDA

2.04.1 Apologies for absence

2.04.2 Notes of meeting 20th January 2004 (attached)

2.04.3 Matters arising

1.04.3a Format for Drug Treatment Guidelines (see attached)

1.04.3b Patient Group Directions JB/HB

2.03.4 Guidelines for the Management of Acute Confusion and Aggression for use in the Department of Elderly Medicine – progress?

2.04.4 Guidelines previously approved please see following for final approval subject to application of standard header

a. Medication history taking
b. Antibiotic prophylaxis in surgery
c. Vaginal infections
d. Omeprazole Intravenous Infusion for Bleeding Ulcers
e. Pneumonia, Community Acquired
f. Compatibility of intramuscular analgesics and other drugs in the same syringe
g. Magnesium Sulphate Intravenous Infusion in Asthma

2.04.5 New Guidelines for approval

a. Guideline for Medical/Pharmaceutical Representatives
b. Metronidazole Compatibility
c. Treatment of Cellulitis
d. Tablets soluble in water (very first draft for comments)
e. Drugs with Food and Drink (very first draft for comments)

2.04.6 Any other business

2.04.7 Dates for next meetings

7th June 2004, 2nd August, 27th September, 29th November
Please confirm availability for the above

East Hants PCT
Fareham and Gosport PCT
Portsmouth City PCT
Portsmouth Hospitals NHS Trust
Royal Hospital, Haslar
Portsmouth & SE Hampshire LM Committee
West Hampshire NHS Trust

Notes of Guidelines and Medicines Management Subcommittee. Tuesday 20th January 2004

1.04.1 Apologies for absence

1.04.2 Notes of meeting 13th November 2003 approved as a correct record

1.04.3 Matters arising

It was agreed that Drug Treatment Guidelines should be published in the intranet and extranet web sites but in the PCTs there was a need for a paper based system, where wards do not have access to the electronic media described above. Agreed to set up a register of interested people, who will take responsibility for circulation of documents and providing updates.

Agreed to reconsider format for Drug Treatment Guidelines and bring to next meeting.

Patient Group Directions

The Committee discussed the issue of whether it should approve PGDs. There was a primary care PGD group working across Hampshire reviewing PGDs but its future was unknown. JB/HB to come up with a recommendation on what should happen locally.

2.03.4 Guidelines on the Management of Acute Confusion and Aggression for use in the Department of Elderly Medicine.

There was some discussion about the issue of rapid tranquilisation. Agreed that Ann Dalby, Jane Marshall, Jan Peach and other interested parties should have a brief meeting to agree a revised wording on this issue. JJW to extract the PHT nursing view from Sarah Balchin.

2.03.5 Sedation in the elderly

It was reported that Elderly Mental Health were happy with the content of this guideline.

2.03.6 Medicines Policy

It was It was reported that this was now complete but needed some changes to indexing. JJW to issue to PCT Pharmaceutical Advisors on completion.

1.04.4 Guidelines previously circulated

a. Medication history taking

This was approved subject to the following amendments:

- standard front end wording
- wording pointing out that medicines may be a direct cause of admission
- revised heading "Allergies, Sensitivities, Adverse Drug Reactions or Potential Medicines Related Cause of Admission
- Include comments on timeliness of documents in table concerning "Where to Obtain Information From."

b. Antibiotic prophylaxis in surgery

Approved without comment subject to standard header

c. Vaginal infections (attached)

This was approved subject to the use of generic nomenclature for medicines throughout.

1.04.5 New Guidelines for discussion

a. Calculation of Drug Doses (attached)

Post meeting note. This Guideline was withdrawn following a meeting of the Formulary and Medicines Group. Will be subject of further clarification at a later date.

b. Omeprazole Intravenous Infusion for Bleeding Ulcers

Approved without comment subject to standard header

c. Pneumonia, Community Acquired

Approved subject to standard header and note saying, "not applicable to patients being treated in primary care."

d. Compatibility of intramuscular analgesics and other drugs in the same syringe

Approved subject to standard header and review to ensure that it does not contradict the syringe driver policy.

e. Magnesium Sulphate Intravenous Infusion in Asthma

Approved subject to standard header and use is unlicensed.

NB It was agreed that once amended the above guidelines should go to the Chairman for approval prior to publishing. This has been delayed due to a desire to have revised header approved before issuing guidelines.

1.04.6 Any other business

a. Guidelines for the use of buccal midazolam as a substitute for rectal diazepam.

JB/HMcH to draft a guideline recommending a training package for carers.

b. Guidelines for cholesterol testing and treatment

SH and HMcH to review and bring back to next meeting

c. Guideline for administration of oral medication

d. List/Index of Guidelines

Agreed that a list of guidelines should be produced and published on the intranet and extranet web sites.

1.04.7 Dates for next meetings

JJW to review dates for next meetings

Post Meeting Note

It has been suggested that the Guidelines and Medicines Management Committee should meet approximately two weeks after the Formulary and Medicines Group to allow their comment to be incorporated before the guidelines come to the Guidelines and Medicines Management Committee for approval. It is therefore suggested that the meeting dates should be as follows:

7th June 2004, 2nd August, 27th September, 29th November
Please confirm availability for the above

M69

East Hants PCT
Fareham and Gosport PCT
Portsmouth City PCT
Portsmouth Hospitals NHS Trust
Royal Hospital, Haslar
Portsmouth & SE Hampshire LM Committee
West Hampshire NHS Trust

Notes of Guidelines and Medicines Management Subcommittee Monday 15th March 2004

2.04.1 Present

Mrs S Halewood, Miss H McHale, Mrs J Brember, Mrs H Bagshaw, Dr N Lewkowicz, Mrs J Marshall, Mr J Watling

Apologies for absence

Dr I Reid, Mrs P Diaper, Ms Katie Hovenden, Dr E Fellows, Ms S Chan, Dr N Allen, Dr A Holden.

2.04.2 Notes of meeting 20th January 2004 approved as a correct record

2.04.3 Matters arising

1.04.3a Format for Drug Treatment Guidelines. Revised template approved but JJW to check whether RHH and West Hants wished to be mentioned specifically and whether the latter organisation should be represented on the subcommittee. It was reaffirmed that Drug Treatment Guidelines would be published on the PHT Intranet and Portsmouth and SE Hants Extranet web sites. It was up to Pharmaceutical Advisors to ensure that Guidelines were available on wards where there was no electronic access to these web sites. JJW to discuss with Paula Diaper how Guidelines should be distributed to EMH wards.

1.04.3b Patient Group Directions

It was reported that the pre-existing Hampshire Group based on Central Hants PCT will continue to produce and review PGDs on behalf of primary care in Hampshire. It was agreed that PGDs approved by this group should be accepted in Portsmouth and South East Hampshire without being approved by this subcommittee. The PHT/East Hants PCT subgroup was about to meet for the first time this year chaired by Amanda Cooper. This group would be responsible for approving secondary care PGDs on behalf of the local health economy. It was noted the PHT, RHH and East Hants PCT were represented and suggested that representatives should be invited from Portsmouth City PCT and Fareham and Gosport PCT.

2.03.4 Guidelines for the Management of Acute Confusion and Aggression for use in the Department of Elderly Medicine

A small group had met to discuss this Guideline and agreed to modify the wording concerning referring patients to A/E departments if staffing was inadequate to monitor rapid tranquillisation adequately. Subsequent to that meeting the minutes of a nurse

managers meeting in Fareham and Gosport had reported that they were happy with the original wording. Subsequent to this, guidance had been received from the CSM concerning the long-term use of antipsychotic medication and link with stroke. Agreed that the subcommittee should ask Dr A Dowd and Dr Brown to review the Guideline in the light of current guidance.

2.04.4 Guidelines previously approved please see following for final approval subject to application of standard header

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e. Compatibility of intramuscular analgesics and other drugs in the same syringe
f. Magnesium Sulphate Intravenous Infusion in Asthma

These were approved on block with minor amendments. The Omeprazole Guideline needs slight modification but will be e-mailed to members for approval.

New Guidelines for approval

a. Guideline for Medical/Pharmaceutical Representatives

This was not circulated to subcommittee members but to be e-mailed to members for approval

b. Metronidazole Compatibility

Approved but details in "evidence base" to include approved names after trade names.

c. Treatment of Cellulitis

Approved with an additional note 5 "Doses may need to be reduced for renal impairment."

d. Tablets soluble in water

It was reported that this wa
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or injectable preparations,
raised concerning the use
be included concerning t
crushed. Agreed guideline

e. Drugs with Food and Drink

The comment as above to u
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Oral nystatin and miconazole

When used for oral thrush,

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d. Tablets soluble in water

It was reported that this was part of a proposed document to include guidance on oral dose preparations, which may be crushed, dispersed or otherwise modified or injectable preparations, which may be given orally. Some general points were raised concerning the use of generic nomenclature throughout. A section should be included concerning those modified release preparations which may be crushed. Agreed guideline to be brought to the next meeting for approval.

e. Drugs with Food and Drink

The comment as above to use generic nomenclature throughout was repeated. It was noted that preparations containing Methyldopa should not be taken immediately following a high protein meal. Item 4 to read as follows:

Oral nystatin and miconazole gel

When used for oral thrush, these should be given after meals since, if given

beforehand the drug is washed away by food and saliva and efficacy is reduced.

2.04.5 Any other business

The issue of publicising the role of the subcommittee and drug treatment guidelines was discussed. Agreed that this should be done through existing PHT and PCT newsletters.

2.04.6 Dates for next meetings

The proposed dates listed below were not universally acceptable. JJW to discuss with Chairman and KH and offer alternatives.

7th June 2004, 2nd August, 27th September, 29th November

GUIDELINES FOR MEDICAL/PHARMACEUTICAL REPRESENTATIVES

Introduction

Representatives visiting hospitals and clinics within the District are expected to observe the Code of Practice for the Pharmaceutical Industry drawn up by the ABPI.

Visits

- Visits to doctors should be made by arrangement through the department secretaries.
- Consultants should be approached before junior medical staff.
- Visits should be restricted to those that are strictly necessary.
- The appropriate directorate pharmacist should be approached when promoting a new medical product and when medical staff show genuine interest in using a new or recently promoted product. Likewise, the dietitian should be seen in respect of food products, and NHS Supplies (South and West Division) approached in respect of equipment and dressings.
- ***No visit may be made to wards, theatres or outpatient clinics without prior appointment***, or to nursing staff without the approval of the appropriate Service Manager. Ward and department staff should refuse to see or admit representatives without such approval.
- On arrival on site please sign in using the register provided at QAH reception or SMH maternity reception.
- An ID badge (preferably with photo) should be worn at chest height. If a personal company badge is not displayed you should wear a dated "Medical Representative" sticker, obtained from reception.

District Prescribing Formulary

- The whole local health economy including hospitals and local PCTs, operate a strict District Prescribing Formulary. Medicines NOT included in the Prescribing Formulary are not available for prescribing and will not be ordered (unless there are exceptional circumstances). Products not on the Formulary may ONLY be promoted to or discussed with Speciality Clinical Directors or Directorate Pharmacists.
- The Formulary and Medicines Group consider hospital-wide medication issues and the Area Prescribing Committee are responsible for the District Prescribing Formulary.

Access to Pharmacists

- No representative will be seen by any pharmacist without a prior appointment.
- The fullest information concerning drugs is welcomed, particularly by the Medicines Information Centre.
- All purchasing, pricing and contract-related enquiries should be directed to John Grayson at the Regional Drug Purchasing Centre.

Samples

- Samples of medicinal products, including medicated dressings, aerosols and food products for use in the hospital must not be left on wards, theatres or departments. All such samples must be directed to the hospital pharmacy for issue through the normal procedures. Ward staff must not accept free supplies for assessment, however generous such offers may seem.
- Samples of medicinal products requested for the private use of doctors should be sent to their private address or given to the doctor concerned personally on the specific understanding that they will not be used within the hospital.
- Hospital pharmacies will not accept samples unless there has been a specific prior agreement between the doctor concerned and the pharmacist in charge.

Clinical Trials, Clinical Assessments and Named-Patient Supplies

- Supplies for clinical trials, clinical assessments and named-patients should normally be sent to the hospital pharmacy.
- Where a clinician has specifically requested that material be sent to him direct, the pharmacy should be advised that material was sent in this way.

- A pharmacist must take part in the planning of any clinical trial in which the pharmacy department is to participate, and no trial material should be dispatched before the arrangements for packaging, labelling and dispensing it have been agreed. Such arrangements may include a fee for participation.
- The Trusts do not approve of clinical trials or assessments which are poorly planned and controlled, and which carry offers of free supplies as an inducement for future prescribing. Pre-marketing clinical trials must have the approval of the Ethics Committee and ARDSU (Academic Research & Development Support Unit), and post-marketing clinical assessments must have the approval of the Formulary & Medicines Group.

Gifts, Inducements and Hospitality

- The ABPI Code of Practice on these must be observed, as well as any District policies which may be in force.
- The Trusts do not approve of, and will not be influenced by, offers to cut hospital prices substantially as an inducement to purchase, while prices remain high for continuity of treatment in primary care. The Trusts may regard this loss-leading practice as questioning the integrity of the company concerned and will review their purchasing policies accordingly.

Breaches of Policy

The Trusts view breaches of these arrangements by representatives or hospital staff seriously, and will not hesitate to take appropriate action when they are detected.

Contact information

New representatives wishing to inform pharmacists about new products or services, or wanting information about actual or potential usage etc., should direct their attention to the person most likely to help them or to benefit from their advice.

Speciality/Area	Pharmacist	Contact Number	Speciality/Area	Pharmacist	Contact Number
A & E	Mel Stevens	5284	Intensive Care	Liz Randall	5411
Anaesthetics	Liz Randall	5411	Isotopes, cytotoxics	Rob Williams	3777
Cardiology	Michelle Small	Bleep 1858	Medicine	Vacant	5284
Clinical Trials	C/o Dispensary	See below	Medicines Information	Julia Fletcher	6632
Day Surgery	Liz Randall	5411	Maxillofacial Unit	Julia Marsh	5411
Dermatology	Vacant		Mental Health	Paula Diaper	3772
Diabetes	Rosemary Dempsey	5282	Microbiology	Vacant	
Diagnostic Imaging	Liz Randall	5411	Neurology	Vacant	
Dispensary QAH	Heather Rawlings	6117	Obstetrics	Diane Kingswood	3776
Dispensary SMH	Peter Smith	3775	Oncology	Catrin Watkinson	Bleep 1990
Dispensary RHH	Vacant		Orthopaedics	Liz Randall	5411
Education & Training	Gill Daddow	5282	Paediatrics	Amanda Cooper	3772
Elderly Medicine	Jane Marshall	5412	Pain Clinic	Liz Randall	5411
Endoscopy	Liz Randall	5411	Palliative Care	Paula Diaper	3772
ENT	Julia Marsh	5411	Regional Drug Purchasing Centre	John Grayson	(01489) 788322
Eye	Julia Marsh	5411			
Gastroenterology	Rosemary Dempsey	5412	Renal	Vacant	
Genito-Urinary Med	Vacant	3771	Rheumatology	Julia Marsh	5411
Guidelines	Helen McHale		Respiratory	Michelle Small	Bleep 1858
Gynaecology	Diane Kingswood	3776	Surgery	Julia Marsh	5411
Haematology	Catrin Watkinson	Bleep 1990	Urology	Diane Kingswood	3776

Mel Stevens, Principal Pharmacist manages this guideline (ext 5284)
See Trust Policy for the Production of Drug Therapy Guidelines
Approved by: Formulary & Medicines Group Date: Nov 03
Ratified by: Clin Gov Subgroup Date: Feb 2004
Review date: Nov 2005

Portsmouth and South East Hampshire Guidelines and Medicines Management Committee

NHS

Drug Therapy Guideline No 38.01 Jan 2004
Title Metronidazole: compatibility with other I/V antibiotics (Draft)

Metronidazole: compatibility with other I.V. Antibiotics (Draft)

Introduction

This guideline has been developed in order to:

- Minimise the number of injections needing to be administered to patients when multiple antibiotics are prescribed.
- Reduce the risk of causing harm to the patient by mixing drugs that are incompatible.

This guideline applies to patients/practitioners under the care of the NHS Trusts/Primary Care Trusts listed below. This guideline applies to patients receiving IV metronidazole in combination with other IV antibiotics.

Recommendations

- The antibiotics listed below are stable when added to a metronidazole 500mg/100ml bag.
- Reconstitute each vial in the normal way using water for injection, as directed by the package insert.
- Inject into metronidazole bag through the side-port using aseptic technique.
- Mix the bag and contents thoroughly.
- **Do NOT add more than one antibiotic to a metronidazole bag.**

Antibiotics Compatible with Metronidazole 500mg/100ml bag
Cefotaxime 500mg - 4g
Ceftazidime 500mg - 2g
Cefuroxime 750mg - 1.5g
Flucloxacillin up to 1g

In the interest of safety, the member of staff preparing the mixture should:

1. Check the bag for signs of incompatibility before giving to the patient (eg discolouration, cloudiness, precipitation). This indicates that the bag should not be used.
2. Use the bag immediately and not store it.
3. Label the bag to show that it now contains two antibiotics.

Once mixed with metronidazole, the bag should be infused in the normal way (100ml should be infused over 20-30 minutes).

Evidence Base

This data has been reproduced from the Handbook of Injectable Drugs and Summaries of Product Characteristics for Flagyl, Zinacef, Fortum, Claforan and Floxapen. Only cefuroxime is covered by a

manufacturer's product licence (known physical & chemical stability). The stability of the remainder have been reported in the previously mentioned pharmaceutical literature.

Julia Fletcher, Medicines Information Pharmacist, manages this guideline
See Trust Policy for the Production of Drug Therapy Guidelines
Approved by: Date:
Ratified by: Date:
Review date:

Portsmouth and South East Hampshire Guidelines and Medicines Management Committee

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See Trust Policy for the Production of Drug Therapy Guidelines
Approved by: Date:
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Medication History Taking (Draft)

Introduction

There are numerous potent drugs available which can profoundly influence the outcome of diseases. Drugs may produce clinical features, which closely resemble naturally occurring disorders and even obscure the correct diagnosis. They may also be a direct cause of admission to hospital due to their adverse effects. Therefore it is important an accurate drug history is taken.

The objectives of this guideline are to ensure that an accurate drug history is taken in order to minimise risk to patients from essential drugs being omitted and incorrect doses and drugs being prescribed.

This guideline should apply to all patients admitted to Portsmouth Hospitals NHS Trust.

Recommendations

The following should be obtained whenever a mediation history is taken:

- **Bold type** indicates an essential record
- *Italic type* indicates that the information is desirable but may be more difficult to ascertain

Current prescription, non-prescription and 'over the counter' or purchased medicines, herbal and complementary medicines taken

Information to be obtained for each drug or product	**Notes for History Taking**
Name and Description	Take care to identify modified release preparations. Drugs should be prescribed by generic name, but also recording the trade name may aid in identification of the correct preparation.
Strength	Beware drugs with more than one strength. Take care with products containing combinations of drugs e.g. Co-Tenidone 2.5/25.
Dose and frequency of dosage	The times of day should be recorded.
Formulation	
Indication	
Date medication started	
Outcome of therapy	
compliance	

Relevant Past Medication History

The same details as for the current medicines should be obtained for medication usage that is relevant to the current clinical problem.

e.g. Drugs tried and failed.
Antidepressants recently stopped.
Timing of previous courses of steroids.

Allergies, Sensitivities and Adverse Drug Reactions

These details should also be recorded in the appropriate section of the drug chart.
If there are no known allergies, state: None.
If the information cannot be obtained, state: Unobtainable.

Information to be obtained for each drug or product	Notes for allergy taking
Name and description	Description of allergy or reaction

Potential Drug Related Admissions to Hospital

Where the patient has been admitted to hospital due to a potential adverse drug reaction or interaction the drug name, dosage, duration the patient has been taking the drug and the actual adverse effect should be documented in the notes. Whether the drug is to be stopped or continued should also be documented.

Where to Obtain Information From

Source of Information	Notes on sources of information
Patient	Patients may know all of their drugs off the top of their head. The patient may have a list with them e.g. repeat prescription (check when it was last ordered).
Patients own drugs (PODs)	Check dates on the PODs to get an idea of whether the patient is still taking them and question the patient on this. Drug histories can be more accurate if the names, strengths and dosages are confirmed by examining the directions on the medication labels.
Relatives/ carers	They may have a list.
GP	The GP may have sent a letter into the hospital stating the drug history, (caution sometimes doses may be missing). You may need to phone the surgery and ask for the history, remember to ask when the drug was last prescribed as well as above information.
Nursing Homes	Usually keep records of medications their patients are taking.
Community Pharmacy	Might be useful if patients are taking methadone or have medicines in a monitored dosage system. They also keep electronic records

Smoking and Alcohol Consumption

Both of these can interact with drugs that may be prescribed in hospital

e.g. smoking can increase clearance of aminophylline.
chronic alcohol consumption can induce enzymes possibly increasing clearance of some drugs.

References to national Guidelines

Spoonful of Sugar
Building a Safer NHS for Patients

Evidence base

While there is no evidence to state the best way of obtaining a drug history there is evidence in the form of small studies to suggest that inaccurate drug histories can adversely affect patient outcomes. These studies have given standards/ guidelines that could be included in drug histories, which have been incorporated into this guideline.

Helen McHale, Pharmacist, manages this guideline.
See Trust Policy for the Production of Drug Therapy Guidelines.
Approved by: Date:
Ratified by: Date:
Review date:

Medication History Taking (Draft)

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Source of Information	Notes on sources of information
Patient	Patients may know all of their drugs off the top of their head. The patient may have a list with them e.g. repeat prescription (check when it was last ordered).
Patients own drugs (PODs)	Check dates on the PODs to get an idea of whether the patient is still taking them and question the patient on this. Drug histories can be more accurate if the names, strengths and dosages are confirmed by examining the directions on the medication labels.
Relatives/ carers	They may have a list.
GP	The GP may have sent a letter into the hospital stating the drug history, (caution sometimes doses may be missing). You may need to phone the surgery and ask for the history, remember to ask when the drug was last prescribed as well as above information.
Nursing Homes	Usually keep records of medications their patients are taking.
Community Pharmacy	Might be useful if patients are taking methadone or have medicines in a monitored dosage system. They also keep electronic records

Smoking and Alcohol Consumption

Both of these can interact with drugs that may be prescribed in hospital

e.g. smoking can increase clearance of aminophylline.
chronic alcohol consumption can induce enzymes possibly increasing clearance of some drugs.

References to national Guidelines

Spoonful of Sugar
Building a Safer NHS for Patients

Evidence base

While there is no evidence to state the best way of obtaining a drug history there is evidence in the form of small studies to suggest that inaccurate drug histories can adversely affect patient outcomes. These studies have given standards/ guidelines that could be included in drug histories, which have been incorporated into this guideline.

Helen McHale, Pharmacist, manages this guideline.
See Trust Policy for the Production of Drug Therapy Guidelines.
Approved by: Date:
Ratified by: Date:
Review date:

ANTIBIOTIC PROPHYLAXIS IN SURGERY

Introduction

Infection of incised skin or soft tissue is a common but avoidable complication in surgery. Prophylactic antibiotics inhibit the growth of contaminating bacteria reducing the risk of infection but their administration can also increase the risk of antibiotic resistant bacteria and Clostridium difficile.

The objectives of this guideline are to:

- Decrease the incidence of surgical site infection
- Use antibiotics in a manner supported by evidence of effectiveness.
- Minimise the effect of antibiotics on patients natural flora.
- Minimise adverse effects.

This guideline applies to all adult patients undergoing the defined surgical procedures

Summary of recommendations

- The antibiotics selected for prophylaxis must cover the common pathogens.
- Prophylactic antibiotics should be administered intravenously.
- Antibiotic prophylaxis should be administered immediately before or during a procedure.
- Antibiotic prophylaxis should be confined to the perioperative period.
- The single dose of antibiotic for prophylactic use is, in most circumstances, the same as would be used therapeutically.
- Patients with a history of anaphylaxis or urticaria or rash occurring immediately after penicillin therapy are at increased risk of immediate hypersensitivity to penicillins and should not receive prophylaxis with a beta-lactam antibiotic (such as a penicillin or cephalosporin).
- Patients with a history of allergy to a penicillin without a history of immediate hypersensitivity may be prescribed a cephalosporin.
- Policies for surgical prophylaxis that recommend beta-lactam antibiotics as first line agents should also recommend an alternative for patients with allergy to penicillins or cephalosporins.
- An additional dose of prophylactic agent is not indicated in adults, unless there is blood loss of up to 1500 ml during surgery or haemodilution of up to 15 ml/kg.
- Fluid replacement bags should not be primed with prophylactic antibiotics because of the potential risk of contamination and calculation errors.

CLASSIFICATION OF OPERATION

Clean Operations in which no inflammation is encountered and the respiratory, alimentary or genitourinary tracts are not entered. There is no break in aseptic operating theatre technique.

Clean-contaminated Operations in which the respiratory, alimentary or genitourinary tracts are entered but without significant spillage.

Contaminated Operations where acute inflammation (without pus) is encountered, or where there is visible contamination of the wound. Examples include gross spillage from a hollow viscus during the operation or compound/open injuries operated on within four hours.

Dirty Operations in the presence of pus, where there is a previously perforated hollow viscus, or compound/open injuries more than four hours old.

Antibiotic prophylaxis is recommended in:

CARDIOTHORACIC SURGERY

- Cardiac pacemaker insertion

ENT SURGERY

- Head and neck surgery (clean-contaminated/contaminated)

GENERAL SURGERY

- Colorectal surgery
- Appendicectomy
- Biliary surgery (open)
- Breast surgery
- Clean-contaminated procedures (extrapolated from specific clean-contaminated procedures)
- Endoscopic gastrostomy
- Gastroduodenal surgery
- Oesophageal surgery
- Small bowel surgery
- Laparoscopic or non-laparoscopic hernia repair with mesh

OBSTETRICS & GYNAECOLOGY

- Caesarean section
- Hysterectomy (abdominal or vaginal)
- Induced abortion

OPHTHALMOLOGY

- Cataract surgery

ORTHOPAEDIC SURGERY

- Total hip replacement
- Prosthetic knee joint replacement
- Closed fracture fixation
- Hip fracture repair
- Spinal surgery
- Insertion of prosthetic device (extrapolated from trials of specific devices)

UROLOGY

- Transrectal prostate biopsy
- Shock-wave lithotripsy
- Transurethral resection of the prostate

VASCULAR SURGERY

- Lower limb amputation
- Vascular surgery (abdominal and lower limb)

Antibiotic prophylaxis is NOT recommended in:

ENT SURGERY
Ear surgery (clean)
Head and neck surgery (clean)
Nose or sinus surgery
Tonsillectomy

GENERAL SURGERY
Laparoscopic hernia or non-laparoscopic hernia surgery without a mesh
Laparoscopic cholecystectomy

ORTHOPAEDIC SURGERY
Orthopaedic surgery without prosthetic device (elective)

UROLOGY
Transurethral resection of bladder tumours

Portsmouth Hospitals will not support the use of prophylaxis where SIGN does not recommend it.

Key National Refences
Scottish Intercollegiate Guidelines Network. Antibiotic Prophylaxis in Surgery. July 2000.
Available on the SIGN website: www.sign.ac.uk

Evidence Base
This guidance is based upon the SIGN guidelines published in 2000. The SIGN document summarises the relevant evidence and makes recommendations on which types of surgery benefit from prophylaxis and those which do not. It is the intention that Portsmouth Hospitals follows this guidance closely. It is recommended that all surgeons read the sections that apply to their surgery.

Dr R Brindle, Consultant Microbiologist manages this guideline (ext 3204)
See Trust Policy for the Production of Drug Therapy Guidelines
Approved by: Date
Ratified by: Date
Review date

ANTIBIOTIC PROPHYLAXIS IN SURGERY

Tables

1. The primary antibiotic should be given to all patients except those who give a history of allergy to a penicillin.
2. The secondary antibiotic should be given to those who have a history of allergy to penicillin without a history of immediate hypersensitivity.
3. The tertiary antibiotic should be given to those who have a history of immediate hypersensitivity to beta-lactam (either a cephalosporin or penicillin).

The tertiary antibiotic may also be given to patients who have evidence of infection with bacteria which are resistant to the primary and secondary antibiotics. Those patients known to have MRSA infections or to be MRSA colonised might need to receive teicoplanin with or instead of the listed antibiotics.

Surgical procedures

	Primary Antibiotics	Dose	Secondary Antibiotics	Dose	Tertiary Antibiotics	Dose
CARDIOTHORACIC SURGERY						
Cardiac pacemaker insertion	Flucloxacillin	1 g	Cefuroxime	1.5 g	Teicoplanin	400 mg
ENT SURGERY						
Head and neck surgery (clean-contaminated/contaminated)	Co-amoxiclav	1.2 g	Cefuroxime + Metronidazole	1.5 g 500 mg	Clindamycin	600 mg

	Primary Antibiotics	Dose	Secondary Antibiotics	Dose	Tertiary Antibiotics	Dose
GENERAL SURGERY						
Colorectal surgery	Co-amoxiclav	1.2 g	Cefuroxime + Metronidazole	1.5 g 500 mg	Gentamicin + Metronidazole	2 mg/kg 500 mg
Appendicectomy	Co-amoxiclav	1.2 g	Cefuroxime + Metronidazole	1.5 g 500 mg	Gentamicin + Metronidazole	2 mg/kg 500 mg
Biliary surgery (open)	Co-amoxiclav	1.2 g	Cefuroxime	1.5 g	Gentamicin	2 mg/kg
Breast surgery	Flucloxacillin	1 g	Cefuroxime	1.5 g	Clindamycin	600 mg
Clean-contaminated procedures	Co-amoxiclav	1.2 g	Cefuroxime + Metronidazole	1.5 g 500 mg	Gentamicin + Metronidazole	2 mg/kg 500 mg
Endoscopic gastrostomy	Co-amoxiclav	1.2 g	Cefuroxime + Metronidazole	1.5 g 500 mg	Gentamicin	2 mg/kg
Gastroduodenal surgery	Co-amoxiclav	1.2 g	Cefuroxime + Metronidazole	1.5 g 500 mg	Gentamicin	2 mg/kg
Oesophageal surgery	Co-amoxiclav	1.2 g	Cefuroxime + metronidazole	1.5 g 500 mg	Gentamicin	2 mg/kg
Small bowel surgery	Co-amoxiclav	1.2 g	Cefuroxime + Metronidazole	1.5 g 500 mg	Gentamicin + Metronidazole	2mg/kg 500mg
Laparoscopic or non-laparoscopic hernia repair with mesh	Flucloxacillin	1 g	Cefuroxime	1.5 g	Teicoplanin	400 mg

	Primary Antibiotics	Dose	Secondary Antibiotics	Dose	Tertiary Antibiotics	Dose
VASCULAR SURGERY						
Lower limb amputation	Flucloxacillin	1 g	Cefuroxime	1.5 g	Clindamycin	600 mg
Vascular surgery (abdominal and lower limb)	Flucloxacillin	1 g	Cefuroxime	1.5 g	Clindamycin	600 mg

	Primary Antibiotics	Dose	Secondary Antibiotics	Dose	Tertiary Antibiotics	Dose
OBSTETRICS & GYNAECOLOGY						
Caesarean section	Co-amoxiclav	1.2 g	Cefuroxime Metronidazole	1.5 g 500 mg	Gentamicin Metronidazole	2 mg/kg 500 mg
Hysterectomy (abdominal or vaginal)	Co-amoxiclav	1.2 g	Cefuroxime Metronidazole	1.5 g 500 mg	Gentamicin Metronidazole	2 mg/kg 500 mg
Induced abortion (vacuum)*	None					
Induced abortion (late)*	Co-amoxiclav	1.2 g	Cefuroxime Metronidazole	1.5 g 500 mg	Gentamicin Metronidazole	2 mg/kg 500 mg
OPHTHALMOLOGY						
Cataract surgery http://www.rcophth.ac.uk/publications/guidelines/cataract_surgery10.html	Awaited					
Other intra-ocular surgery						
Dacryocystrhinostomies						

	Primary Antibiotics	Dose	Secondary Antibiotics	Dose	Tertiary Antibiotics	Dose
ORTHOPAEDIC SURGERY						
Total hip replacement	Cefuroxime	1.5 g			Teicoplanin	400 mg
Prosthetic knee joint replacement	Cefuroxime	1.5 g			Teicoplanin	400 mg
Closed fracture fixation	Cefuroxime	1.5 g			Teicoplanin	400 mg
Hip fracture repair	Cefuroxime	1.5 g			Teicoplanin	400 mg
Spinal surgery	Cefuroxime	1.5 g			Teicoplanin	400 mg
Insertion of prosthetic device	Cefuroxime	1.5 g			Teicoplanin	400 mg

	Primary Antibiotics	Dose	Secondary Antibiotics	Dose	Tertiary Antibiotics	Dose
UROLOGY						
Transrectal prostate biopsy	Ciprofloxacin	500 mg Oral				
Shock-wave lithotripsy	Ciprofloxacin	500 mg Oral				
Transurethral resection of the prostate	Co-amoxiclav	1.2 g	Cefuroxime	1.5 g	Gentamicin	2 mg/kg
Cystectomy	Co-amoxiclav	1.2 g	Cefuroxime	1.5 g	Gentamicin	2 mg/kg
Insertion of prosthetic device	Co-amoxiclav	1.2 g	Cefuroxime	1.5 g	Gentamicin	2 mg/kg

(DRAFT) VAGINAL INFECTIONS

Introduction

- Vulvo-vaginal candidosis, bacterial vaginosis and trichomoniasis are the most common vaginal infections.
- Completion of the entire course of recommended treatment is essential.
- In peri- and post-menopausal women, Oestriol Cream (Ovestin) (for short term use only) will help prevent secondary bacterial invasion associated with vaginal oestrogen deficiency.

The objectives of this guideline are to:

- Treat vulvo-vaginal candidosis, bacterial vaginosis and trichomoniasis.
- Use treatments in a manner supported by evidence of effectiveness.

This guideline applies to all female adult patients with the defined condition.

Vulvo-vaginal Candidosis

1. Symptoms

Patients complain of irritation and soreness, vaginal discharge and sometimes discomfort with intercourse.

2. First Line Treatment

Imidazole derivatives have replaced nystatin as the standard first-line treatment. Single dose local therapies should be preferred to maximise adherence, eg:

- Clotrimazole 500mg pessary (canesten)
- Clotrimazole 10% vaginal cream (canesten)
- Miconazole 1.2g ovule (Gyno-Daktarin; GUM only)
- Miconazole 100mg pessary twice daily or 100mg once daily (GUM only)

Lower strength versions of any of these can be used each day over a 3-7 day period.

Patients with severe pruritus and vulval excoriation may gain more rapid relief by the application of a steroid-containing cream **as well** (eg Canesten HC or Daktacort).

3. Oral Medication

- As effective as single dose local treatments but expensive.
- Reserve for resistant infections, those occurring in the presence of other conditions such as genital herpes, and in selected immunocompromised patients.
- **Dose**: Fluconazole 150mg stat or Itraconazole 200mg bd for one day.

4. Recurrent Infection

Recurrent vaginal candidosis should be confirmed microbiologically and referral to a specialist considered. Long term use of low-dose vaginal pessaries over many months is often necessary in these cases.

Treatment of asymptomatic male partners is rarely helpful in preventing recurrence.

Bacterial Vaginosis

1. Symptoms

Patients complain of a maladorous vaginal discharge.

2. First Line

Metronidazole 400mg bd for 5 days. Sexual partners do not usually need to be treated.

3. Alternative

Metronidazole 0.75% (zidoval) vaginal cream inserted at night for one week at a dosage of 5g is useful for patients who cannot tolerate oral metronidazole.

Trichomoniasis

1. Symptoms

Patients complain of a smelly vaginal discharge with vulval soreness. Trichomoniasis is much less common than vaginal candidosis and bacterial vaginosis. It often involves the lower urinary tract as well as the genital tract and requires systemic treatment.

2. Investigation

Trichomoniasis is a sexually transmitted infection and patients should be referred to GUM for full screening as a second STI will be present in 40-50%. Contact tracing must also be carried out in all cases.

3. Treatment

Metronidazole is effective; there are 3 different regimens:

- 400mg bd for 5 days
- 2g stat dose
- 200mg tds for 7 days

Metronidazole may interact with alcohol, so patients must avoid alcohol.

In pregnancy metronidazole should only be used if considered essential. The short high-dose regimen is not recommended.

Key National References

Association of GU Medicine National Guidelines 2002 (www.agum.org.uk) :

- National Guidelines for the management of bacterial vaginosis.
- National Guidelines for the management of vulvovaginal candidiasis.
- National guidelines for the management of trichomonas vaginalis.

Evidence Base

These recommendations have been based on evidence taken from meta-analysis of randomised controlled trials from literature of overall good quality and consistency addressing the specific recommendation; randomised controlled trials and well conducted clinical studies. For specific ratings refer to national guideline.

Linda Tucker, Dr JM Tobin and Andy Fox manage this guideline (ext)
See Trust Policy for the production of Drug Therapy Guidelines.
Approved by: Date
Ratified by: Date
Review date:

Pneumonia, Community Acquired

Introduction

Community acquired pneumonia is common and associated with significant morbidity, mortality and is a drain on NHS resources. This guideline is a summary of the BTS guidelines on Community acquired pneumonia in adults.

The objectives of this guideline are to decrease:

- The use of iv broad-spectrum antibiotics.
- The use of combination antibiotic therapy.
- The occurrence of antibiotic induced side effects e.g. Clostridium difficile.
- Antibiotic costs.

This guideline deals with antibiotic treatment of Community Acquired Pneumonia in adult patients admitted to hospital, in the local health economy. Supportive therapy (e.g. oxygen and IV fluids) should also be considered.

This guideline does not apply to patients:

- in primary care at home.
- with Chronic Obstructive Pulmonary Disease (COPD).
  (These patients should be treated with bronchodilators, systemic steroids and controlled oxygen therapy. Physiotherapy may be indicated in bronchiectasis or COPD. Antibiotic recommendations for patients with COPD can be found in the BTS guidelines on the management of COPD.)

The most common cause of acute bacterial pneumonia is *Streptococcus pneumoniae.* **Less common causes are:** *Mycoplasma pneumoniae, Legionella pneumoniae, Chlamydia, Haemophilus influenzae & Staphylococcus aureus.* **It is impossible to differentiate one from another clinically or radiologically.**

ASSESMENT OF SEVERITY

Severity assessment is necessary to plan the appropriate management of the patient. Many patients with pneumonia can be treated on the ward with oral antibiotics. Patients with severe pneumonia may need admission to Respiratory High Care or Critical Care.

The following adverse prognostic features are associated with increased risk of death.

Pre-existing Adverse prognostic features

1. Age >50
2. Presence of co-existing disease
    a. Chronic congestive cardiac failure
    b. Cardiovascular disease
    c. Chronic renal disease
    d. Chronic liver disease
    e. Neoplastic disease

- Patients with 2 or more core features are at risk of death and should be treated as severe pneumonia.

Core Features

1. Confusion, abbreviated mental test score <9
2. Urea >7mmol/l
3. Respiratory rate >30/minute
4. Blood pressure, systolic <90 and or diastolic <60 mm Hg

- Patients with 1 core feature are at increased risk of death. The decision to treat such patients as having severe or non-severe pneumonia is a matter of clinical judgement, preferably from an experienced clinician. This decision can be assisted by considering pre-existing and additional adverse prognostic features.

Additional adverse prognostic features

1. Oxygenation SaO2 <92%, PaO2 <8kPa, regardless of FiO2
2. Bilateral or multilobe involvement

INVESTIGATIONS

1. Chest x-ray
2. Blood gases, recording the $Fi0_2$
3. Blood for U&Es, CRP, FBC
4. Blood cultures should be taken before antibiotics are given
5. Clotted blood sample for acute serology (tested with convalescent sample)
6. Sputum, if available, for culture (microscopy is not routinely performed)
7. Urine for pneumococcal and legionella antigen in severe pneumonia

ANTIBIOTIC THERAPY

MILD PNEUMONIA	SEVERE PNEUMONIA
Amoxycillin caps 1g tds and **Erythromycin tabs 500mg qds** If IV therapy is needed: **Amoxycillin IV 1g tds or** and **Clarithromycin IV 500 mg bd** If allergic to penicillin treat with erythromycin alone.	**Co-amoxiclav IV 1.2g tds or** **Cefuroxime IV 1.5g tds** and **Clarithromycin IV 500mg bd** Change to oral medication as below within 48 hours if possible: **Co-Amoxiclav 625mg tds** and **Erythromycin tabs 500mg qds** If allergic to penicillin use cefuroxime and erythromycin

Notes

1. Change medication if clinically relevant microbiological results become available.
2. Ask for specialist advice if immunosuppression is suspected, or if the patient does not improve or deteriorates on this treatment within 24 hours.
3. Change to oral antibiotics within 48 hours if possible.
4. Duration of therapy depends upon clinical response.
5. Avoid using cefuroxime in the elderly due to increased risk of C diff infection.
6. Avoid the use of cephalosporins in patients with a history of immediate anaphylaxis or urticaria. Patients with a history of allergy to penicillin but without a history of immediate hypersensitivity may be prescribed cefuroxime.

Key National References

British Thoracic Guidelines for the Management of Community Acquired pneumonia in Adults. Thorax. 2001, 56 supplement IV, iv1-iv64.

Evidence Base

The recommendations in this guideline have been made on the basis of assessing laboratory, clinical, pharmacokinetic and safety data, interpreted in an informed manner. There is a need for prospective randomised controlled trials to enable the management of community acquired pneumonia on a truly evidenced basis. For specific gradings see the national guidelines.

Dr Richard Brindle, Consultant Microbiologist, manages this guideline.
See Trust Policy for the Production of Drug Therapy Guidelines.
Approved by: Date:
Ratified by: Date:
Review date:

(DRAFT)Compatibility of Intra-muscular (i.m.) Drugs in the Same Syringe

Introduction

This guideline has been developed in order to:

- Minimise the number of i.m. injections needing to be administered to patients when iv/ oral access is unavailable.
- Reduce the risk of causing harm to the patient by mixing drugs that are incompatible.

This guideline should apply to adult patients receiving i.m. injections of the stated combinations of drugs.

Recommendations

Several points should be considered when mixing drugs in the same syringe for i.m. administration:

- Once mixed in the syringe, the contents MUST BE USED IMMEDIATELY.
- The nurse or doctor administering a mixed injection of this type is responsible for checking that no precipitation has occurred in the syringe.

DO NOT ADMINISTER A MIXED INJECTION IF PRECIPITATION HAS OCCURRED

- It is not recommended that more than two drugs be mixed in the same syringe.
- The guidelines on compatibility below only apply to the doses stated and for mixtures given by the intra-muscular route.

The following individual analgesics may be mixed in the same syringe with any one drug in the anti-emetics/anti-secretory list:

Analgesic	Anti-emetic/ Anti-secretory
Morphine up to 10mg	Atropine up to 400-600microgram
Papaveretum up to 15.4mg	Hyoscine Hydrobromide up to 400-600microgram
Pethidine up to 100mg	Metoclopramide up to10mg
	Prochlorperazine up to 12.5mg
Additionally, diamorphine at a dose of up to 20mg in 1ml water for injection, can be mixed with up to 10mg metoclopramide in the same syringe.	

Disadvantages/ Adverse Reactions

Slower onset of action of the drugs than with intravenous administration.
Pain at site of injection.

Evidence Base

This data is reproduced from The Handbook of Injectable Drugs 12th Edition (Trissel) (A collection of information from published literature on the pharmaceutics of parenteral medications as applied to the clinical setting). None of these mixtures is covered by a manufacturer's product licence.

Helen McHale, pharmacist, manages this guideline,
See Trust Policy for the Production of Drug Therapy Guidelines
Approved by: Date:
Ratified by Date:
Review date:

Magnesium Sulphate Intravenous Infusion for Asthma in Adults (

Introduction

This guideline has been developed because IV magnesium sulphate use in asthma is not licensed.

Magnesium is an important cofactor in many enzymatic reactions and is linked to cellular homeostasis. In addition, magnesium has an effect on smooth muscle cells, with hypomagnesemia causing contraction and hypermagnesemia causing relaxation. There is some evidence that when magnesium is infused into asthmatic patients, it can provide additional bronchodilation. In addition, evidence suggests that magnesium may reduce the neutrophilic burst seen with the inflammatory response.

The objectives of this guideline are to provide guidance on the safe administration of intravenous magnesium sulphate in adult patients with asthma.

Indications

- Acute severe asthma in adult patients who have not had a good initial response to inhaled bronchodilator therapy.
- Life threatening or near fatal asthma.

Preparation

- Magnesium sulphate 50% injection (approx. 2mmol/ml) 2ml amp = 1 gram
  5ml amp = 2.5 grams
  10ml amp = 5 grams

Administration
2g magnesium sulphate in 50 ml diluent given over 20 minutes.

Diluents
- Sodium Chloride 0.9%
- Glucose 5%
- Glucose 4% and Sodium Chloride 0.18%

Max rate 150mg/ minute, maximum concentration = 20% magnesium sulphate.

Dose
2g over 20 minutes.

Adverse Effects
Muscle weakness, arrhythmias, bradycardia, cardiac arrest, nausea, vomiting, thirst, flushing of skin, hypotension, coma, respiratory depression, confusion, drowsiness, loss of tendon reflexes.

Contra-indications and Cautions

- Avoid in patients with heart block or severe renal impairment.
- Caution in less severe degrees of renal impairment and in patients with myasthenia gravis.

Monitoring

- Monitor for signs of hypermagnesaemia (see adverse effects above)
- ECG monitoring

Y- site compatibilities

Calcium gluconate, potassium chloride, vancomycin, aciclovir, cefotaxime, dobutamine, gentamicin, heparin, morphine sulphate

Incompatibilities

Amphotericin

Interactions

- Neuro-muscular blockers eg. turbocurarine, suxamethonium, vecuronium,- caution, use with magnesium sulphate can increase their effects.
- Aminoglycosides- caution, use together can result in additive neuromuscular block.
- Calcium channel antagonists – caution, when used together may cause muscular paralysis, as both compounds, working in concert, can reduce the amount of calcium ions needed for normal muscle contraction.

Key National References

British Guideline on the Management of Asthma. The British Thoracic Society and The Scottish Intercollegiate Guidelines Network, Thorax 2003;**58** (Suppl I)

Evidence Base

The British Guideline on the Management of Asthma has been adopted for this guideline. The evidence in the national guideline has been taken from systematic reviews of trials involving large numbers of patients, which showed that Magnesium Sulphate is effective in patients with severe asthma and life threatening or near fatal asthma. Unfortunately there are several weaknesses in this review and other evidence shows conflicting results. More large well designed trials are needed to prove the efficacy of this drug for this unlicensed use.

Helen McHale and Michelle Small Medical Service Pharmacists, Manage this guideline,
See Trust Policy for the Production of Drug Therapy Guidelines
Approved by: Formulary and Medicines Committee Date:March 2003
Ratified by: Date:
Review Date: March 2005

Metronidazole: compatibility with other I.V. Antibiotics (Draft)

Introduction

This guideline has been developed in order to:

- Minimise the number of injections needing to be administered to patients when multiple antibiotics are prescribed.
- Reduce the risk of causing harm to the patient by mixing drugs that are incompatible.

This guideline applies to patients receiving IV metronidazole in combination with other IV antibiotics.

Recommendations

- The antibiotics listed below are stable when added to a metronidazole 500mg/100ml bag.
- Reconstitute each vial in the normal way using water for injection, as directed by the package insert.
- Inject into metronidazole bag through the side-port using aseptic technique.
- Mix the bag and contents thoroughly.
- **Do NOT add more than one antibiotic to a metronidazole bag.**

Antibiotics Compatible with Metronidazole 500mg/100ml bag
Cefotaxime 500mg - 4g
Ceftazidime 500mg - 2g
Cefuroxime 750mg - 1.5g
Flucloxacillin up to 1g

In the interest of safety, the member of staff preparing the mixture should:

1. Check the bag for signs of incompatibility before giving to the patient (eg discolouration, cloudiness, precipitation). This indicates that the bag should not be used.
2. Use the bag immediately and not store it.
3. Label the bag to show that it now contains two antibiotics.

Once mixed with metronidazole, the bag should be infused in the normal way (100ml should be infused over 20-30 minutes).

Evidence Base

This data has been reproduced from the Handbook of Injectable Drugs and Summaries of Product Characteristics for Flagyl, Zinacef, Fortum, Claforan and Floxapen. Only cefuroxime is covered by a manufacturer's product licence (known physical & chemical stability). The stability of the remainder have been reported in the previously mentioned pharmaceutical literature.

Julia Fletcher, Medicines Information Pharmacist, manages this guideline
See Trust Policy for the Production of Drug Therapy Guidelines
Approved by: Date:
Ratified by: Date:
Review date:

Appendix 2. PHPS Form 07 001U Documentation of Preparation, Approval, Publishing, Audit and Review of Drug Therapy Guidelines

Record of Preparation, Publishing, Audit and Review of Drug Therapy Guidelines

Preparation

Title of Drug Therapy Guideline	Metronidazole: Compatibility with other IV Antibiotics
Reference number	38.01
Name of Guideline Project Manager	Julia Fletcher

Membership of Guideline Development Group	**Date**
1 Julia Fletcher	Jan 2004
2	
3	
4	
5	
6	
7	
8	

Methods used to formulate recommendations
Specific Product Information datasheets, Trissel Handbook of Injectable Drugs and advice from the manufacturers were used to obtain information for this guideline. The guideline was viewed by the senior pharmacists at Portsmouth Hospitals NHS Trust and a consensus of opinion reached.

Documentation of Development Process		
Reviewing groups		**Date**
Initial proposal	Guideline Development Group	Jan 2004
Draft 2		
Draft 3		
Draft 4		
Finalisation by Guideline Development Group		

Documentation of Minimum Requirements (state reasons for exclusion and enter the information if it is not included for any other reason than it is not applicable in the boxes below)	
Requirement	**Included**
Reasons for developing drug therapy guideline	☒
Objectives of drug therapy guideline	☒
A description of patients to whom the guideline should apply (not ageist)	☒
A clear description of condition to be detected, treated or prevented Not applicable	☐
Clear description of health benefits likely to be gained from following the guidelines	☒
Clear definition of alternative options for management of the condition Not applicable	☐
Statement of how the guideline to be disseminated Not included for conciseness. To be published on the trust intranet and extranet. Paper copiesto be distributed to the wards and PCTs.	☐
Clear presentation of the recommendations	☒
An adequate description of harms and risks associated with recommended management	☒
Reference to key national guidelines Not applicable	☐
Comment concerning evidence base	☒

Documentation of Additional Information	**Incl**
Estimated costs of expenditures likely to occur from the recommended management	☐
Explicit statement of how patient preferences should be taken into account in applying the guidelines	☐
Clear definition of standards or targets or measurable outcomes, that can be monitored	☐

References Used in Preparing Drug Therapy Guideline

Trissel L, Handbook of Injectable Drugs, 12th ed. American Society of Health System Pharmacists. 2003.
Flagyl Injection SPC from the eMC, Rhone-Poulenc Rorer. Last updated January 2002. www.emc.vhn.net.
Fortum for Injection SPC from the eMC. GlaxoSmith Kline UK. Last updated March 2003. www.emc.vhn.net.
Zinacef SPC from the eMC, GlaxoSmith Kline UK. last updated July 2003. www.emc.vhn.net.
Claforan SPC from the eMC, Aventis, last updated September 2003. www.emc.vhn.net.
Floxapen SPC from the eMC GlaxoSmith Kline UK, last updated May 2003. www.emc.vhn.net

Methods Used to Interpret Strength of Evidence

The information in this guideline has been taken from the Handbook of injectable Drugs. This text is a collection of information from published literature on the pharmaceutics of parenteral medications as applied to the clinical setting.

While this is a highly recommended and reliable text in some instances entries give conflicting information possibly due to varying conditions or materials used in the studies. While the evidence used in this guideline is of reasonable quality a caution has been included so that if a combination of drugs does precipitate they are not administered. Only the mixing of metronidazole and cefuroxime is covered by a manufacturers product license.

Approval

Documentation of Approval Process	
Group	**Date**
Approval by Formulary and Medicines Group	
Approval by Guidelines and Medicines Management Committee	
Approval by Area Prescribing Committee	
Ratified by sub-committee of Clinical Governance Committee	

Publishing and Dissemination

Final version prepared by;		**Date**
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Alternative publication methods		

Pilot Process (if applicable)	**Duration**
Audit of Pilot Process	
Changes made as a result of pilot process	

Review

Review date/frequency proposed by Guideline Development Group		
Proposed review methodology		
Review date and method agreed by relevant approval committee?	**Yes** ☐	**No** ☐
Revised and approved review date or method		
Review completed by		**Date**
Changes to guideline required?	**Yes** ☐	**No** ☐

Revised version prepared by*		**Date**
Revised version placed on intranet website by:		**Date**
Intranet address:		

* Detailed documentation of review of each drug therapy guideline will be undertaken using a new PHPS Form 07 001U in accordance with the requirement of PHPSWI07 001U.

Audit

Audit date proposed by Guideline Development Group		**Date**	
Proposed audit methodology			
Audit date and method approved by relevant approval committee?		**Yes** ☐	**No** ☐
Revised and approved audit date or method			
Audit completed		**Date**	
Results reported by			
Results reported to			
Changes to guideline required?		**Yes** ☐	**No** ☐
Revised version prepared by*		**Date**	
Revised version placed on intranet website by		**Date**	
Intranet address			

* Detailed documentation of audits of each drug therapy guideline will be undertaken using a new PHPS Form 07 001U in accordance with the requirement of PHPSWI07 001U.

TREATMENT OF CELLULITIS

Introduction

This guideline covers the treatment of uncomplicated cellulitis in the immuno-competent adult patient. It does not cover the treatment of impetigo, infectious gangrene or necrotising fasciitis.

Description

Cellulitis is an acute spreading infection of the skin, which may involve the subcutaneous tissues. The area of cellulitis will be painful, swollen and erythematous. It may follow an abrasion, insect bite, other minor trauma or tinea pedis. The most common cause is *Streptococcus pyogenes* (group A streptococcus) and may, in patients with injury or long standing ulcers, involve *Staphylococcus aureus*.

Cellulitis may result in severe tissue damage, which takes weeks to recover. This recovery period is not shortened by extending the duration of antibiotics for more than a few days.

Cellulitis is frequently recurrent.

The objective of this guideline is to ensure the appropriate treatment of cellulitis.

SEVERITY

The infection can be considered to be severe if there is:

- **Severe local tissue invasion and damage** e.g. rapidly expanding area of erythema and oedema, skin necrosis, bullae formation and/ or,
- **Systemic features**:
  rigors, hypotension, tachycardia, hypoxia, renal impairement and/ or,
- **Progression despite adequate doses of appropriate oral antibiotics**.

INVESTIGATIONS

1. Blood for U&Es, CRP, FBC, Glucose, LFTs
2. Blood cultures
3. Wound swab

TREATMENT:

Treat underlying cause (e.g. treat tinea pedis with imidazole cream)

Inpatient treatment

Severe	Not severe
Benzylpenicillin IV 1.2g qds **and** Flucloxacillin IV 500mg qds *If allergic to penicillin*: Cefuroxime IV 1.5g tds **only**	Penicillin V orally 500mg qds **and** Flucloxacillin orally 500mg qds *If allergic to penicillin:* Erythromycin orally 500mg qds **only**

Outpatient treatment

Severe	Not severe
Ceftriaxone IV 2 grams once daily for 3 days **and** Flucloxacillin orally 500mg qds x 5 days ***Or** if allergic to penicillin:* Erythromycin orally 500mg qds	Penicillin V orally 500mg qds **and** Flucloxacillin orally 500mg qds x 5 days *If allergic to penicillin:* Erythromycin orally 500mg qds **only**

Notes

1. Change the antibiotic regimen if clinically relevant microbiological results become available.
2. Ask specialist advice if the patient does not improve or deteriorates on this treatment.
3. Change IV to oral medication within 48 hours if possible.
4. Duration of therapy depends upon clinical response

Evidence base

Recommendations in this guideline have been taken from national prescribing guidance from the BNF and Public Health Laboratory Service. Drugs have been chosen according to theoretical principles, clinical experience, expert opinion and the local formulary have also been taken into account.

Dr R Brindle manages this guideline (ext 3204)
See Trust Policy for the Production of Drug Therapy Guidelines
Approved by: Date
Ratified by: Date
Review date:

Appendix 2. PHPS Form 07 001U Documentation of Preparation, Approval, Publishing, Audit and Review of Drug Therapy Guidelines

Record of Preparation, Publishing, Audit and Review of Drug Therapy Guidelines

Preparation

Title of Drug Therapy Guideline	Treatment of Cellulitis
Reference number	33.01
Name of Guideline Project Manager	Dr R Brindle

Membership of Guideline Development Group	**Date**
1R Brindle	October 2003
2H. McHale	January 2004
3Dr P Featherstone	October 2003
4Dr P Schmidt	October 2003
5Dr N Hedger	October 2003
6	
7	
8	

Methods used to formulate recommendations
NICE, SIGN, E.Guidelines, Cochrane Library, Bandolier, national electronic library for health and Department of Health websites/ databases were searched for evidence on cellulitis. The guideline was viewed by the senior pharmacists and a selection of Consultants and a consensus of opinion formed.

Documentation of Development Process		
Reviewing groups		**Date**
Initial proposal	Guideline Development Group	October 2003
Draft 2		
Draft 3		
Draft 4		
Finalisation by Guideline Development Group		

Documentation of Minimum Requirements (state reasons for exclusion and enter the information if it is not included for any other reason than it is not applicable in the boxes below)	
Requirement	**Included**
Reasons for developing drug therapy guideline	☒
Objectives of drug therapy guideline	☒
A description of patients to whom the guideline should apply (not ageist)	☒
A clear description of condition to be detected, treated or prevented	☒
Clear description of health benefits likely to be gained from following the guidelines	☒
Clear definition of alternative options for management of the condition	☒
Statement of how the guideline to be disseminated Not included for conciseness. Guideline to be published in the intranet and extranet. Electronic copies to be sent to the PCTs and paper copies to be distributed to the wards and doctors.	☐
Clear presentation of the recommendations	☒
An adequate description of harms and risks associated with recommended management Not included for conciseness sakes. Adverse effects can be readily found in the BNF and relevant product datasheets either on the wards or in medicines information.	☐
Reference to key national guidelines No national guidelines available	☐
Comment concerning evidence base	☒

Documentation of Additional Information	**Incl**
Estimated costs of expenditures likely to occur from the recommended management	☐
Explicit statement of how patient preferences should be taken into account in applying the guidelines	☐
Clear definition of standards or targets or measurable outcomes, that can be monitored	☐

References Used in Preparing Drug Therapy Guideline
Dilemmas when managing cellulitis. Drug and Therapeutics Bulletin. 2003, 41 (6), 43-45.

Methods Used to Interpret Strength of Evidence
Recommendations in these guidelines have been taken from national prescribing guidance in the BNF and public health laboratory service. Drugs have been chosen according to theoretical principles, clinical experience, expert opinion and cost and local formulary implications. There are too few published data to help determine the optimal antibacterial drug for treating cellulitis or optimal duration of treatment. Several published randomised controlled trials have compared different antibacterials, but these do not show a clear first choice of therapy. There is a need for prospective randomised controlled trials to enable the management of cellulitis on a truly evidenced basis.

Approval

Documentation of Approval Process	
Group	**Date**
Approval by Formulary and Medicines Group	
Approval by Guidelines and Medicines Management Committee	
Approval by Area Prescribing Committee	
Ratified by sub-committee of Clinical Governance Committee	

Publishing and Dissemination

Final version prepared by;		**Date**
Final version placed on intranet website by		**Date**
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Pilot Process (if applicable)	**Duration**
Not applicable	
Audit of Pilot Process	
Not applicable	
Changes made as a result of pilot process	
Not applicable	

Review

Review date/frequency proposed by Guideline Development Group		**Jan 2006**
Proposed review methodology		
literature search and multidisciplinary review.		
Review date and method agreed by relevant approval committee?	**Yes** ☐	**No** ☐
Revised and approved review date or method		
Review completed by		**Date**
Changes to guideline required?	**Yes** ☐	**No** ☐
Revised version prepared by*		**Date**
Revised version placed on intranet website by:		**Date**
Intranet address:		

* Detailed documentation of review of each drug therapy guideline will be undertaken using a new PHPS Form 07 001U in accordance with the requirement of PHPSWI07 001U.

Audit

Audit date proposed by Guideline Development Group			**Date** Jan 2005
Proposed audit methodology			
Audit date and method approved by relevant approval committee?		**Yes** ☐	**No** ☐
Revised and approved audit date or method			
Audit completed			**Date**
Results reported by			
Results reported to			
Changes to guideline required?		**Yes** ☐	**No** ☐
Revised version prepared by*			**Date**
Revised version placed on intranet website by			**Date**
Intranet address			

* Detailed documentation of audits of each drug therapy guideline will be undertaken using a new PHPS Form 07 001U in accordance with the requirement of PHPSWI07 001U.

Drugs with Food and Drinks

Introduction

Food interacts with many drugs to reduce or enhance their efficacy. Concomitant administration of food with some drugs can also prevent some side effects such as gastric irritation, nausea and vomiting. It is therefore important that certain drugs and food are taken in a specific order to enhance their efficacy or minimise their side effect profile.

The objectives of this guideline are to ensure that drug efficacy is enhanced and adverse effects are minimised where possible by the appropriate timing of drug administration with respect to food.

This guideline applies to doctors prescribing, nurses administering and pharmacists, endorsing the relevant drugs.

Drugs That Must Be Given Before Food

The drugs below will bind to food so that absorption and efficacy is reduced:

- Flucloxacillin
- Penicillamine
- Rifampicin
- Oxytetracycline
- Penicillin V (Phenoxymethylpenicillin)
- Thyroxine
- Azithromycin
- Demeclocycline

Bisphosphonates

- Clodronate must be taken on an empty stomach - ie at least 2 hours before or after eating. In practice, administration at 10am or 10pm is often acceptable.
- Risedronate should be taken at least 30 minutes before the first food or drink of the day or if taking at any other time of the day, avoid food for at least 2 hours before or after risedronate.
- Alendronate should be taken at least 30 minutes before breakfast.

Sucralfate and Denol 'coat' ulcers to heal them. They must be taken at least one hour before eating or they 'coat' food instead and the treatment does not work.

'Colofac' (Mebeverine) should be taken 20 minutes before food, to reduce the symptoms of irritable bowel syndrome at meal times.

Drugs That Must Be Taken With or After Food

1. Drugs that cause nausea or vomiting

These should preferably be taken after a meal to minimise this side effect.

- Allopurinol
- Azathioprine
- Betahistine
- Bezafibrate
- Bromocriptine
- Cefaclor mr
- Creon
- Codydramol
- Cyproterone acetate
- Dihydrocodeine
- Dipyridamole mr
- Erythromycin
- Ferrous Sulphate
- Ganciclovir
- 'Madopar' (Co-Beneldopa)
- Metformin
- Metronidazole tablets
- Misoprostol
- Olsalazine
- 'Sinemet' (Co-careldopa)
- Sodium fusidate
- Venlafaxine
- Sando K
- Trazodone

2. Irritant Drugs

These may cause indigestion, inflammation or ulcers, but irritancy is reduced by food. Administration need not be with/after a meal (although this is best), but some biscuits, a sandwich or a glass of milk is usually sufficient.

- Aspirin.
- Non-Steroidal Anti-Inflammatory Drugs (eg diclofenac, ibuprofen etc).
- Steroids (e.g. prednisolone, hydrocortisone and dexamethasone).

3. Antacids

If patients experience reflux or indigestion at mealtimes the most benefit is gained by giving antacids immediately after, or in the middle of, a meal.

4. Nystatin and Miconazole Gel

When used for oral thrush, these must be given after meals, since if given beforehand the drug is washed away by food, and efficacy is reduced.

5. Itraconazole and Food

The bioavailability of itraconazole is increased when taken with or after food.

Drugs That Must Be Taken With A Large Drink

All tablets and capsules should be taken with a drink to wash them quickly into the stomach. This speeds up the onset of action and prevents lodging in the oesophagus.

Certain drugs **must** be taken with a large drink of water because lodging in the oesophagus can cause irritation and ulceration:

- Alendronate
- Risedronate
- Allopurinol
- Slow K
- Doxycycline

Magnesium hydroxide and **Fybogel** need to be taken with lots of water, otherwise they may not be effective as laxatives and may even cause constipation.

Drugs and Alcohol

- Alcohol may exacerbate drowsiness when taken with drugs known to cause this side effect.
- Alcohol should not be taken with metronidazole or chlorpropamide, since the combination can lead to a very unpleasant reaction.
- Alcohol may be taken with warfarin in small amounts (less than 2-3 units per day). Larger amounts should be avoided unless consumed every day (the warfarin dose can then be adjusted to take account of it). Drunkenness must be avoided

Drugs That Must Not Be Taken With Certain Drinks

Tea or coffee may decrease the absorption of **chlorpromazine** and related drugs. It is important that these are not mixed before administration to the patient.

Calcium resonium will not work if taken with fruit juice.

Grapefruit juice should not be taken with ciclosporin or terfenadine, since it can lead to potentially dangerous increased levels of both these drugs. It may also increase levels of nifedipine, amlodipine and felodipine.

Cranberry juice should not be taken with warfarin as unstable raised INRs have been reported.

Milk should not be taken with the following drugs:

- Ciprofloxacin
- Ciclosporin
- Tetracycline
- Risedronate/ Clodronate

Monoamine Oxidase Inhibitors (MAOIs)

These include phenelzine, tranylcypromine and isocarboxazid. See separate policy.

Evidence Base

This guideline is based on information taken from the BNF and the relevant manufacturer's product information.

Helen McHale, Pharmacist, manages this guideline.
See Trust Policy for the Production of Drug Therapy Guidelines
Approved by: Date:
Ratified by: Date:
Review date:

Appendix 2. PHPS Form 07 001U Documentation of Preparation, Approval, Publishing, Audit and Review of Drug Therapy Guidelines

Record of Preparation, Publishing, Audit and Review of Drug Therapy Guidelines

Preparation

Title of Drug Therapy Guideline	Drugs with Food and Drinks	
Reference number	53.01	
Name of Guideline Project Manager	Helen McHale	
Membership of Guideline Development Group		**Date**
1Helen McHale 2Original author unknown 3 4 5 6 7 8		Jan 2004

Methods used to formulate recommendations
Product literature and standard interactions texts were used to research this guideline. Drug examples given fall in line with the formulary at the time of writing the guideline. The guideline was viewed by all the senior pharmacists and a consensus of opinion reached.

Documentation of Development Process		
Reviewing groups		**Date**
Initial proposal	Guideline Development Group	Jan 2004
Draft 2		
Draft 3		
Draft 4		
Finalisation by Guideline Development Group		

Documentation of Minimum Requirements (state reasons for exclusion and enter the information if it is not included for any other reason than it is not applicable in the boxes below)	
Requirement	**Included**
Reasons for developing drug therapy guideline	☒
Objectives of drug therapy guideline	☒
A description of patients to whom the guideline should apply (not ageist)	☒
A clear description of condition to be detected, treated or prevented Not applicable	☐
Clear description of health benefits likely to be gained from following the guidelines	☒
Clear definition of alternative options for management of the condition Not applicable	☐
Statement of how the guideline to be disseminated Not included for conciseness. Guideline to be published on the intranet and extranet and electronic copies to be sent to the PCTs. Paper copies to be sent to the wards and doctors.	☐
Clear presentation of the recommendations	☒
An adequate description of harms and risks associated with recommended management Not applicable	☐
Reference to key national guidelines None available	☐
Comment concerning evidence base	☒

Documentation of Additional Information	**Incl**
Estimated costs of expenditures likely to occur from the recommended management	☐
Explicit statement of how patient preferences should be taken into account in applying the guidelines	☐
Clear definition of standards or targets or measurable outcomes, that can be monitored	☐

References Used in Preparing Drug Therapy Guideline
British National Formulary 46th ed. September 2003. Drug Interactions. 5th ed. Ivan Stockley. Pharmaceutical Press. 1999. Current Problems in Pharmacovigilence. September 2003. vol 29.

Methods Used to Interpret Strength of Evidence
The information in this guideline has been taken from the BNF, product information and a text book of Drug Interactions. The information in this guideline is in accordance with the licensed recommendations for taking the drugs.

Approval

Documentation of Approval Process	
Group	**Date**
Approval by Formulary and Medicines Group	
Approval by Guidelines and Medicines Management Committee	
Approval by Area Prescribing Committee	
Ratified by sub-committee of Clinical Governance Committee	

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Changes made as a result of pilot process	

Review

Review date/frequency proposed by Guideline Development Group		
Proposed review methodology		
Review date and method agreed by relevant approval committee?	**Yes☐**	**No☐**
Revised and approved review date or method		
Review completed by		**Date**
Changes to guideline required?	**Yes ☐**	**No ☐**
Revised version prepared by*		**Date**
Revised version placed on intranet website by:		**Date**
Intranet address:		

* Detailed documentation of review of each drug therapy guideline will be undertaken using a new PHPS Form 07 001U in accordance with the requirement of PHPSWI07 001U.

Audit

Audit date proposed by Guideline Development Group	**Date**	
Proposed audit methodology		
Audit date and method approved by relevant approval committee?	**Yes** ☐	**No** ☐
Revised and approved audit date or method		
Audit completed	**Date**	
Results reported by		
Results reported to		
Changes to guideline required?	**Yes** ☐	**No** ☐
Revised version prepared by*	**Date**	
Revised version placed on intranet website by	**Date**	
Intranet address		

* Detailed documentation of audits of each drug therapy guideline will be undertaken using a new PHPS Form 07 001U in accordance with the requirement of PHPSWI07 001U.

Tablets Soluble in Water Draft

Introduction

This guideline has been developed to aid drug administration when patients are unable to take solid oral dosage forms and liquid preparations don't exist.

Some tablets not specifically labelled dispersible by the manufacturer can be crushed and will dissolve or disperse in water, however other tablets should not be crushed due to their pharmaceutical properties e.g. modified release (MR, SR, XL) and enteric coated (ec) tablets.

The administration of tablets in any other way than that which the manufacturer intended, ie crushed or dispersed in water, is unlicensed and therefore requires Doctors approval/ prescription.

This guideline applies to patients and practitioners in Portsmouth Hospitals NHS Trust and the local PCTs in the health economy.

Recommendations

The following tablets contain active ingredients, which are soluble in water. This means that the tablet can be dispersed in water to make a solution. The tablet may need to be crushed to encourage dissolution. There may be insoluble parts of the tablet remaining in the bottom.

- Do not store any of these solutions. Use them immediately. Discard any remainder.

Drug	Notes
Acetazolamide	Non-m/r tablets only. The m/r tablet must not be crushed..
Allopurinol	
Amiodarone	
Amitriptyline	
Amlodipine	Nifedipine may be an easier choice (see below)
Azathioprine	caution: CYTOTOXIC. Avoid skin contact. Wear gloves.
Bendrofluazide	Frusemide available as a liquid from pharmacy.
Bisoprolol	
Captopril	Will also dissolve under the tongue
Ciprofloxacin	A liquid formulation is also available.
Clonazepam	A unlicensed liquid formulation may be ordered by pharmacy.
Clonidine	
Co-amilofruse (RPR)	Frusemide available as a liquid from pharmacy.
Cyclizine	
Cyproterone	
Dexamethasone	Injection can also be given orally
Diltiazem tablets	

Enalapril	
Fleicanide	
Fludrocortisone	
Gabapentin	
Glibenclamide	
Gliclazide	Easier to use s.c. insulin instead?
Hydrocortisone	Injection can be given orally as well.
Isosorbide Mononitrate	Easier to try suscard buccal or a GTN patch instead.
Lamotrigine	There are dispersible tablets as well.
Levomepromazine	
Lorazepam	Will also dissolve under tongue. Diazepam syrup also available.
Losartan	
Medroxyprogesterone	
Megestrol	
Metformin	
Metoprolol	Very slow to disperse. Ready-made atenolol syrup is preferable.
Metolazone	
Nifedipine capsules	Bite open & swallow, or remove liquid with needle & syringe give p.o.
Nimodipine	Light sensitive therefore should be crushed and administered at the bedside.
Norethisterone	Disperses slowly
Perindopril	Disperses slowly in 5 minutes.
Pyridostigmine	Neostigmine injection can be given orally
Selegiline	A liquid formulation can be ordered by pharmacy but is unlicensed.
Sertraline	
Simvastatin	Light sensitive therefore should be crushed and administered at the bedside.
Sinemet	Madopar is available as dispersible tablets
Tamoxifen	Pharmacy can buy a tamoxifen syrup if necessary.
Thyroxine	Crushing is needed to ensure dispersal.
Verapamil	
Warfarin	s.c heparin may be a better alternative.

References

1. Mistry B, Samuel L, Bowden S, McArtney R. Simplifying Orla Drug Therapy for Patients with Swallowing Difficulties. The Pharmaceutical Journal. 1995: 254, 808-809.
2. Appendix 10: Administering Drugs via Feeding Tubes. Palliative Drugs.com 2002.

3. Southern General Hospital, Victoria Infirmary, South Glasgow University Hospitals NHS Trust and University of Strathclyde/GGHB pharmacy Practice Unit. A to Z guide to Administration of Drugs via Nasogastric/ PEG Tube. June 2000.

Evidence Base

The information in this guideline has been taken from small studies and experience. No large well controlled trials evaluating the stability using chemical analysis methods were available.

Simon Wills originally wrote this guideline 1999
Helen McHale, Pharmacist, manages this guideline ext 6636
See Trust Policy for the Production of Drug Therapy Guidelines
Approved by: Date:
Ratified by: Date:
Review date:

Appendix 2. PHPS Form 07 001U Documentation of Preparation, Approval, Publishing, Audit and Review of Drug Therapy Guidelines

Record of Preparation, Publishing, Audit and Review of Drug Therapy Guidelines

Preparation

Title of Drug Therapy Guideline	Tablets Soluble in water
Reference number	100.01
Name of Guideline Project Manager	Helen McHale

Membership of Guideline Development Group	**Date**
1Simon Will (original author)	1999
2Helen McHale	Jan 2004
3Viewed by Senior Pharmacists	
4	
5	
6	
7	
8	

Methods used to formulate recommendations
A literature search of Medline, Embase, Pharmline and The Pharmaceutical Journal search engine were carried out. The information was used to review and update the existing guideline. The guideline was viewed by all the senior pharmacists and a consensus of opinion reached.

Documentation of Development Process		
Reviewing groups		**Date**
Initial proposal	Guideline Development Group	Feb 2004
Draft 2		
Draft 3		
Draft 4		
Finalisation by Guideline Development Group		

Documentation of Minimum Requirements (state reasons for exclusion and enter the information if it is not included for any other reason than it is not applicable in the boxes below)	
Requirement	**Included**
Reasons for developing drug therapy guideline	☐
Objectives of drug therapy guideline	☒
A description of patients to whom the guideline should apply (not ageist)	☒
A clear description of condition to be detected, treated or prevented Not applicable	☐
Clear description of health benefits likely to be gained from following the guidelines Patients able to receive important medication when no liquid preparation is available.	☒
Clear definition of alternative options for management of the condition Not applicable. Should I state either give by iv route if a preparation is available or choose an alternative drug.	☐
Statement of how the guideline to be disseminated Not included for conciseness. The be published on the Trust extranet and intranet. Paper copies also to be distributed to the wards and doctors and PCTs.	☐
Clear presentation of the recommendations	☒
An adequate description of harms and risks associated with recommended management	☒
Reference to key national guidelines	☒
Comment concerning evidence base	☒

Documentation of Additional Information	**Incl**
Estimated costs of expenditures likely to occur from the recommended management	☐
Explicit statement of how patient preferences should be taken into account in applying the guidelines	☐
Clear definition of standards or targets or measurable outcomes, that can be monitored	☐

References Used in Preparing Drug Therapy Guideline

1 Mistry B, Samuel L, Bowden S, McArtney R, Roberts D. Simplifying Oral Drug Therapy for Patients with Swallowing Difficulties. The Pharmaceutical Journal. 1995: 254;808-809.
2 Appendix 10: Administering Drugs via Feeding Tubes. Palliative Drugs.com 2002.
3 Southern General Hospital, Victoria Infirmary, South Glasgow University Hospitals NHS Trust and University of Strathclyde/GGHB Pharmacy Practice Unit. A to Z Guide to Administration of Drugs via nasogastric/ PEG tube. June 2000.

Methods Used to Interpret Strength of Evidence

The recommendations in this guideline have been taken from a small study determining whether certain tablets will dissolve in water. Chemical analysis of the solutions was not carried out though to determine the stability of the resultant solutions. The Study authors state in their paper that no complaints have been made about their recommendations with respect to patients receiving inadequate responses to their drugs when administered dissolved in water. Other hospitals local

guidelines with recommendations taken from the above study and experience have also been used.

Approval

Documentation of Approval Process	
Group	**Date**
Approval by Formulary and Medicines Group	
Approval by Guidelines and Medicines Management Committee	
Approval by Area Prescribing Committee	
Ratified by sub-committee of Clinical Governance Committee	

Publishing and Dissemination

Final version prepared by;		**Date**
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Alternative publication methods		

Pilot Process (if applicable)	**Duration**
Not applicable	
Audit of Pilot Process	
Not applicable	
Changes made as a result of pilot process	
Not applicable	

Review

Review date/frequency proposed by Guideline Development Group		
Proposed review methodology		
Review date and method agreed by relevant approval committee?	**Yes☐**	**No☐**
Revised and approved review date or method		
Review completed by		**Date**
Changes to guideline required?	**Yes ☐**	**No ☐**
Revised version prepared by*		**Date**
Revised version placed on intranet website by:		**Date**
Intranet address:		

* Detailed documentation of review of each drug therapy guideline will be undertaken using a new PHPS Form 07 001U in accordance with the requirement of PHPSWI07 001U.

Audit

Audit date proposed by Guideline Development Group		**Date**	
Proposed audit methodology			
Audit date and method approved by relevant approval committee?		**Yes** ☐	**No** ☐
Revised and approved audit date or method			
Audit completed		**Date**	
Results reported by			
Results reported to			
Changes to guideline required?		**Yes** ☐	**No** ☐
Revised version prepared by*		**Date**	
Revised version placed on intranet website by		**Date**	
Intranet address			

* Detailed documentation of audits of each drug therapy guideline will be undertaken using a new PHPS Form 07 001U in accordance with the requirement of PHPSWI07 001U.