Medication Safety Today

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DOAC interactions

An increasing number of patients are taking Direct Oral Anticoagulants (DOACs), also known as Non Vitamin K antagonists (NOACs), for example apixaban, dabigatran, edoxaban and rivaroxaban. While they have fewer interactions than warfarin, there are some important interactions with other medicines that must be considered.

Some common interactions include:

- Medicines which are strong inhibitors of CYP3A4 and P-gp increase levels of DOACs and increase risk of bleeding. These include antifungals (ketoconazole, itraconazole, posaconazole, voriconazole) and HIV protease inhibitors.
- Medicines which are strong inducers of CYP3A4 and P-gp reduce levels of DOACs, which may then be less effective and increase risk of thrombosis. These include rifampicin, phenytoin, carbamazepine, phenobarbital and St John's Wort.
- Medicines which are antiplatelets, other anticoagulants and NSAIDs due to increased risk of bleeding. Herbal/dietary supplements may also increase bleeding risk, e.g. garlic capsules, ginseng, ginkgo biloba, vitamin E (>400 units/day).

Please refer to the full list of interactions and advice on whether concomitant use is contraindicated, not recommended, to be used with caution or dose adjustment required, in the BNF or Summary of Product Characteristics available at: www.medicines.org.uk/emc/

S*A*L*A*D

Sound Alike Look Alike Drugs

A number of incidents have been reported in recent months where medicines with similar looking or sounding names have been mixed up when prescribing, dispensing or administering. This type of incident is more likely where the dose or strength is the same for the similar medicine names.

For example:

Azithromycin 500mg	Erythromycin 500mg
Bendroflumethiazide 2.5mg	Bisoprolol 2.5mg
Bisoprolol 5mg	Bisacodyl 5mg
Mercaptopurine 50mg	Mercaptamine 50mg
Propanolol 40mg	Prednisolone 40mg
Bumetanide	Budesonide
Risperidone 500micrograms	Ropinirole 500micrograms

Safety tips

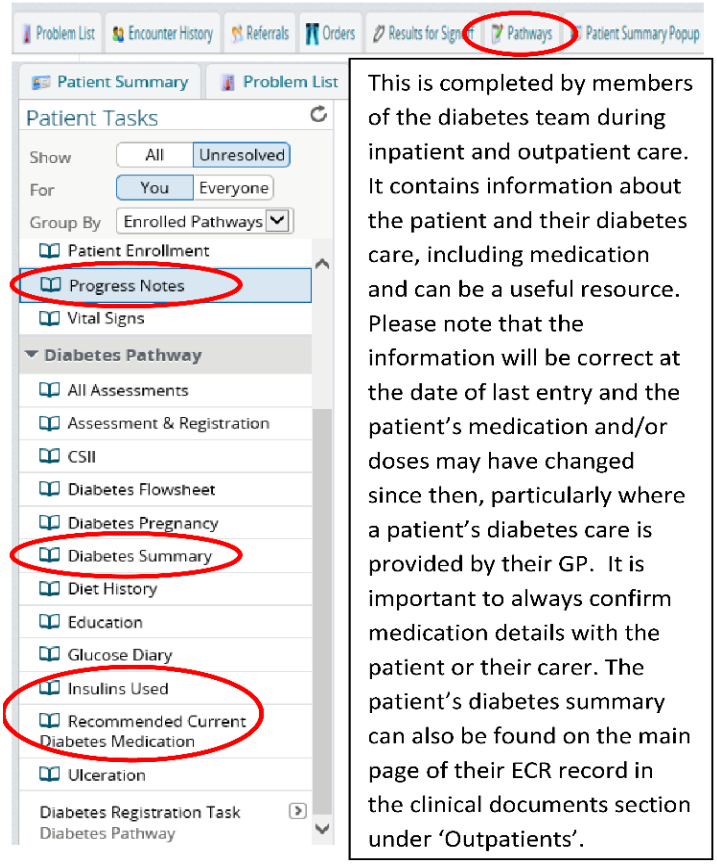
- When typing medicine names into prescribing or dispensing programs, type the first 5 letters of the medicine names.
- Be aware that, particularly when handwritten, some medicine names may be confused with a medicine with a similar name.
- Print medicine names and write doses/strengths legibly.

Peanut Allergy

The BNF indicates where a medicine is known to contain peanut (Arachis) oil. Check the most up to date Summary of Product Characteristics www.medicines.org.uk/emc/ or contact the Pharmacy Department.

Are you on the right path?

There a number of pathways available on NIECR, one of these is the diabetes pathway.



This is completed by members of the diabetes team during inpatient and outpatient care. It contains information about the patient and their diabetes care, including medication and can be a useful resource. Please note that the information will be correct at the date of last entry and the patient's medication and/or doses may have changed since then, particularly where a patient's diabetes care is provided by their GP. It is important to always confirm medication details with the patient or their carer. The patient's diabetes summary can also be found on the main page of their ECR record in the clinical documents section under 'Outpatients'.

Did you know...

Aciclovir (by oral and intravenous routes) must be dose reduced in patients with reduced renal function to prevent neurotoxicity?

Aciclovir is used in the treatment, suppression and prophylaxis of viral infections such as herpes simplex, varicella zoster (chicken pox), herpes zoster (shingles) and viral encephalitis.

Aciclovir is predominantly renally excreted and so can accumulate in patients with reduced renal function. These patients are more susceptible to aciclovir-related neurotoxicity which can manifest as agitation, tremor, hallucinations, myoclonus and coma. Patients treated with peritoneal dialysis (PD) are at an even higher risk as aciclovir is not removed by PD.

In patients with reduced renal function i.e. eGFR < 25 ml/min/1.73m^2 the dose needs to be reduced and the BNF should be consulted.
For patients treated with haemodialysis or peritoneal dialysis the dose reduction is even more marked. The Renal Drug Handbook should be consulted or if this is not available, advice sought from Pharmacy.

If you have any comments on this newsletter, please contact Sharon O'Donnell, Medicines Governance pharmacist on 02896156911 at BHSCT or by e-mail at sharon.odonnell@belfasttrust.hscni.net.
Further copies of this newsletter can be viewed at http://www.medicinesgovernance.hscni.net or on your Trust intranet.

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Infusion rate errors…*watch your speed!!*

Approximately 10% of intravenous medication administrations are associated with an error, with more errors occurring during administration compared to the preparation of the medication. Wrong rate of infusion is reported as the most common type of administration error.[1]

Medication incidents continue to be reported where an infusion is administered too fast, potentially leading to harm.
Examples include:

- Phenytoin: risk of cardiotoxicity
- Vancomycin: risk of red man syndrome
- Furosemide: risk of ototoxicity

Programming errors can result in a medication being administered too fast or too slow if the rate of infusion or volume of infusion is programmed incorrectly into the infusion device.

Safety tip

- An independent second check should be carried out before commencing an intravenous infusion. For a thorough check, both practitioners must observe the volume, the dose and the final rate setting programmed into the device. Introducing a 'pump check' can help detect errors that may have occurred in the preparation of the infusion. The volume, dose and rate are **read and confirmed** by **both** practitioners in the 'pump check'.[2]

[1]Incidence and prevalence of intravenous medication errors in the UK: a systemic review. Sutherland A, Canobbio M, Clarke J, *et al. Eur J Hosp Pharm* 2020;27:3-8

[2]Infusion Medication Error Reduction by Two-Person Verification: A Quality Improvement Initiative. *Pediatrics.* Subramanyam R, Mahmoud M, Buck D, et al. 2016;138(6):e20154413

CAUTION: PENICILLIN ALLERGY

Pivmecillinam is the orally active prodrug of mecillinam, an extended spectrum penicillin antibiotic. It is indicated as an alternative agent for the treatment of lower urinary tract infections (UTI) where there are contraindications, significant renal impairment or known/suspected resistance to alternative first line options (such as trimethoprim, nitrofurantoin or amoxicillin). Given increasing antimicrobial resistance to first line agents, pivmecillinam is being prescribed more frequently in increasing patient groups. Medication incidents have been reported where pivmecillinam has been prescribed and administered to patients with a known hypersensitivity reaction to penicillin.

All staff should be aware that pivmecillinam is ***contraindicated in patients with a known hypersensitivity to penicillins/ cephalosporins.*** Please refer to your individual Trust antimicrobial policy for further details regarding prescribing indications and allergy awareness.