DOACs: Common and uncommon errors. A brief patient safety intervention and review.

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Introduction

Direct oral anticoagulants (DOACs) are now increasingly used in both thrombosis clinics and acute medicine nationwide. The number of inpatient prescriptions has gone up 56% in Newcastle-Upon-Tyne Hospitals (NUTH) between 2014-2015 and 2015-2016. Despite being on the market since 2008 they are relatively unfamiliar drugs to both general medical and nursing staff.

Due to a number of patient safety related incidents with DOACS a review of reported incidents was undertaken in September 2015. The aim of the review was to provide a summary of common issues related to DOACS in order to help recognise them, provide solutions for them and highlight issues to staff to reduce patient harm from drug errors related to unfamiliar drugs. Here we provide a summary of the issues and brief interventions conducted to reduce related patient safety incidents.

Method

The data was collected for all DATIX system-reported incidents between 2014 and 2015 involving DOACS. In our trust this included Apixaban, Dabigatran and Rivaroxaban. 25 incidents were identified, accepting that many incidents may not have been identified, or some may have been identified but not reported.

Summary of issues

Incidents	
Co-prescription of DOAC and tinzaparin (LMWH)	9
Wrong doses for indication	3
Missed doses	3
Dispensary Errors	2
Double dose	2
Dabigatran in medibox	2
DOAC not stopped pre-operatively	1
Continued dosing despite suspected GI bleed	1
Message not passed to GP so prescription not dispensed	1
Patient not educated sufficiently so took both warfarin and DOAC	1

Table 1: Number of incidents 2014-2015

- **Co-prescribing of DOAC with LMWH**

This was the most common error seen in our review of cases.
Co-prescription highlights the lack of awareness of what DOACs are and what they are used for. This highlights the lack of familiarity with these drugs for both doctors and nurses.

- **Wrong dose**

Patients were prescribed the wrong dose for indication e.g. AF dose of Apixaban for PE. Again highlights the need for familiarity with different dosing. Prescribers need to be aware dosing is effected by indication, age, renal function and if initiating or maintaining therapy.

- **Missed doses**

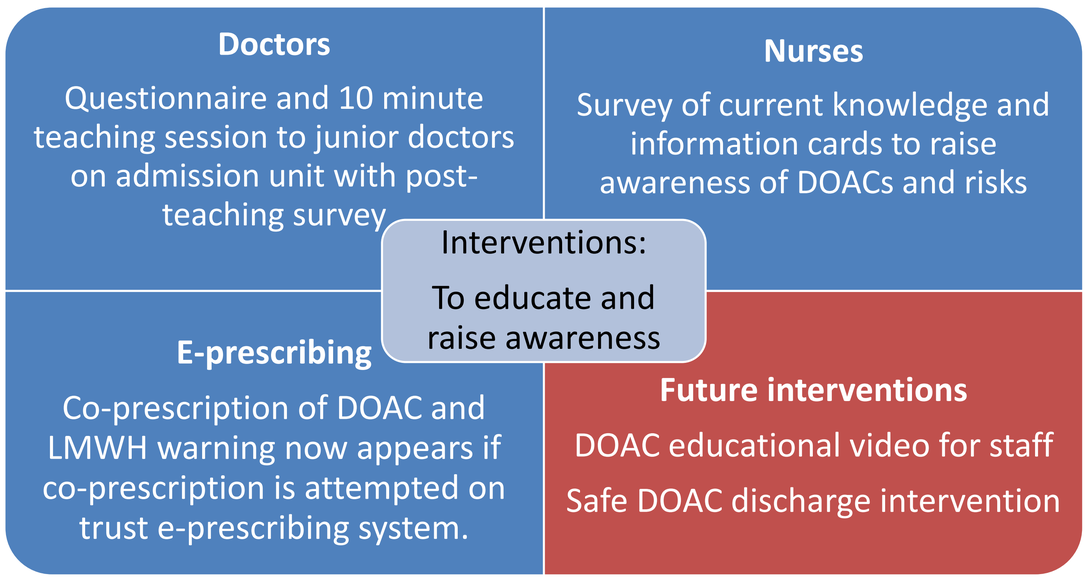
DOACS were often not available on the ward and patients went as long as 48 hours without anticoagulation.
This shows a lack of awareness of staff of what these drugs are used for and the importance of a missed dose and effect on anticoagulation.

- **Dabigatran in medibox**

Dabigatran should not be removed from its foil packaging and placed in a medibox as this reduces its efficacy. A patient was cardioverted after taking Dabigatran from a medibox for 4 weeks.

Table 2- Most common incidents

Interventions



'10 minute teaching' for medical staff

This involved medical staff in the trust assessment suite, and involved a quiz before a ten minute teaching session based on concerns raised in Datix reports. The quiz was then repeated and results collated. Results were promising;

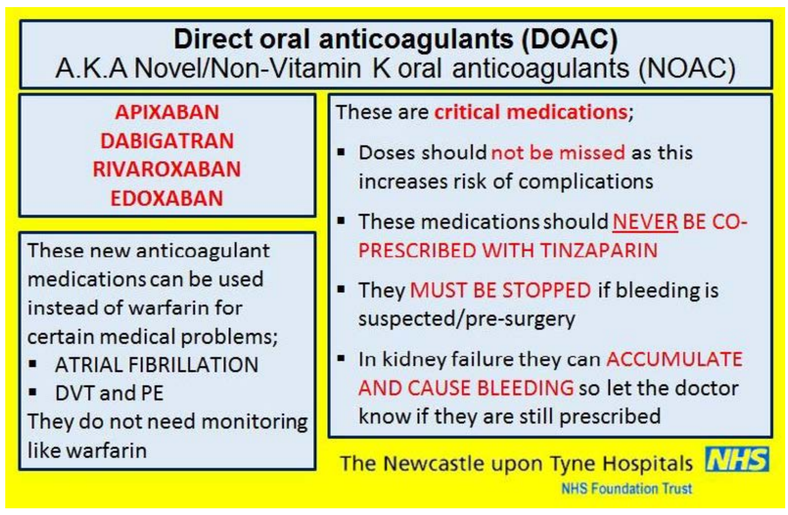
Teaching topic	Before	After
How many can think of an indication to co-prescribe DOAC and LMWH? (%)	66.6%	0%
How confident do you feel prescribing DOACS (/10)	5.4	7.4

Nursing intervention:

A brief 5-question questionnaire was posed to nurses, linked to Datix issues, and results showed;

- Nurses knew these were anticoagulants but;
- They were unsure if they could be prescribed with LMWH
- They were unsure if a dose could be missed
- Only 1 of 12 had had training about NOACS

We decided that due to nursing shifts the easiest way to educate around these issues was to supply small cards educating on key points with a brief description.



Amended e-Prescribing

The online prescribing system in our trust, "Powerchart," has been modified so a DOAC cannot be prescribed with a LMWH without a warning. This is an easy but critical modification for patient safety. Educating staff for the reason behind the warning has taken place in the form of "10 minute teaching" and will be covered in an educational video for staff.

Summary

A lack of familiarity with DOACs emerged from our review of patient safety incidents. Brief interventions to raise awareness among doctors and nurses can be implemented even on busy admission units.
Underreporting of incidents is recognised and medication errors involving DOACs are likely to be common to trusts nationwide. Recognising that staff may be unfamiliar with the newer anticoagulants and educating staff accordingly is vital to ensure patient safety.

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