

PB2346 COMPARISON OF PRESCRIBING ERRORS WITH DIRECT ORAL ANTICOAGULANTS BETWEEN PAPER BASED AND ELECTRONIC BASED PRESCRIBING METHODS AT A REGIONAL BASE HOSPITAL IN NSW, AUSTRALIA

Topic: 35. Quality of life, palliative care, ethics and health economics

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Background: Direct Oral Anticoagulants (DOACs) are used as an alternative to Warfarin for prevention and treatment of stroke, pulmonary embolism and deep vein thrombosis. Anticoagulants are deemed high risk medications due to their narrow therapeutic index, and the risk of significant adverse patient outcomes that can occur due to over or under dosing. In 2018, the local health district replaced paper-based medication charts with an electronic prescribing system (eMeds). eMeds has a medication interaction warning function, but this has currently been disabled.

Aims: Identify errors in prescribing Venous thrombotic events (VTE) prophylaxis or transitions to Heparin/Low molecular weight heparin (LMWH) for patients prescribed a DOAC. Identify any adverse events from these errors. Compare results post electronic prescribing implementation and compare identified errors to previous paper-based prescribing audit. Are there less errors with electronic prescribing?

Methods: Hospital pharmacy provided a list of patients dispensed either Apixaban or Rivaroxaban over 12 months (30/10/2018 – 30/10/2019) following electronic prescribing implementation. Medication charts and progress notes were reviewed for prescribing errors and any subsequent complications. Reason for admission, DOAC indication, and changes to anticoagulation medications were noted. Simple statistical analysis was performed comparing previous audit (paper-based 01/07/2014- 30/05/2015) to post electronic prescribing audit.

Results: 540 patients were dispensed Apixaban (N=383) or Rivaroxaban (N=157) between the study period. 96 charts were analysed as a sample (Apixaban 50, Rivaroxaban 46). Reasons for admission included Atrial Fibrillation or other arrhythmia (16%), General Medical (72%), Embolic Events (1%), Surgical (11%). Indications for DOAC use were Atrial Fibrillation (76%), PE(6%), DVT(9%), other(8%).

One patient was given concurrent DOAC and therapeutic dose of LMWH. One patient was given a double dose of DOAC, changing from Rivaroxaban (once daily dose) to Apixaban (twice daily dosing). There were four incidents where a DOAC dose was unavailable at pharmacy, and no cover was provided with LMWH.

Comparison to previous study with paper chart showed reduction in duplication of therapy: DOAC + Therapeutic LMWH (4 paper-based vs 1 eMeds) and DOAC + VTE Prophylaxis (4 paper-based vs 0 eMeds). Duplication dose of DOAC (0 paper-based vs 1 eMeds).

Prescribing errors were less overall using eMeds (N=6, 6%) compared to the paper-based system (N=18, 20%). The two cohorts compared had similar demographics, reason for admission and indication for DOAC.

The duplicate dosing of DOAC + Therapeutic LMWH within the eMeds cohort was on a complex oncology patient. The eMeds chart was extensive and required the prescriber to 'scroll' through several screens to see all medications charted. The introduction of a function to group anticoagulation medications on the eMeds chart may lead to greater patient safety.

The omission of a dose of DOAC due to unavailability is a systemic supply issue that needs to be addressed within

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the hospital. In these events, LMWH cover should be provided, which is extensively available.

There were no adverse outcomes documented due to the medication errors.

Summary/Conclusion: The introduction of the electronic prescribing system eMeds appears to have led to a reduction in the frequency of prescribing errors with DOACs compared to paper-based system. Hospitals need to continue to take appropriate measures to minimise the potential risks of adverse patient outcomes from prescribing errors with anticoagulants.

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