Imperial College Healthcare NHS Trust

Audit on the management of drug interactions between antiretroviral medicines and anticoagulants and/or antiplatelet medicines

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Background

- Management of multiple co-morbidities and drug-drug interactions (DDIs) are becoming increasingly challenging in an aging population of people living with HIV.
- The lack of data and experience using novel drugs in combination with antiretrovirals (ARVs) makes managing drug interactions complex.
- This audit reviewed whether potential interactions between ARVs and anticoagulants (ACs) and antiplatelets (APs) were identified in clinic and managed in accordance with the BHIVA Standards of Care for people living with HIV, 2013 and 2018.[1,2]
- DDIs can potentially lead to an increase or decrease in efficacy of the anticoagulant or antiplatelet which may result in adverse events such as bleeds or thrombotic events.

Aims

To determine whether:

- Potential drug interactions between antiretroviral medicines and ACs and/or APs medicines were identified and whether discussions on their management were documented
- Any adverse events including bleeds, thrombotic events, discontinuation of interacting drugs occurred as a result of co-administration

Method

- DDIs classified as 'significant' on www.hiv-druginteractions.com, when co-administration is not recommended, or 'potential', requiring close monitoring/dose adjustments were included due to potential of either reduced efficacy or increased bleeding risk.
- Five years of data were pulled from an electronic pharmacy database to identify patients taking potentially interacting medicines. A retrospective case note review was performed to collect information on identification of the interaction, documentation of discussion on its management and if any potentially attributable adverse events were reported.
- The ACs included in the audit were: apixaban, dabigatran, edoxaban and rivaroxaban as well as warfarin.
- The APs included in the audit were: clopidogrel, dipyridamole and ticagrelor.

Results

79 patients were identified as having been co-prescribed ARVs with APs and/or ACs. 36 were included for analysis (see Table 1). Reasons for exclusion include 39 patients on non-interacting combinations and 4 transfers of care into the clinic established and stable on warfarin and an interacting combinations of ARVs.

Table 1: Patients included for analysis

	Antiretroviral Class	
Antiplatelet	**Protease Inhibitor**	**Non-Nucleoside Reverse Transcriptase Inhibitors**
Clopidogrel	8	8
Ticagrelor	0	1
Anticoagulant		
Rivaroxaban	1	0
Warfarin	7	11

Results Continued

Table 2 : Patient Demographics

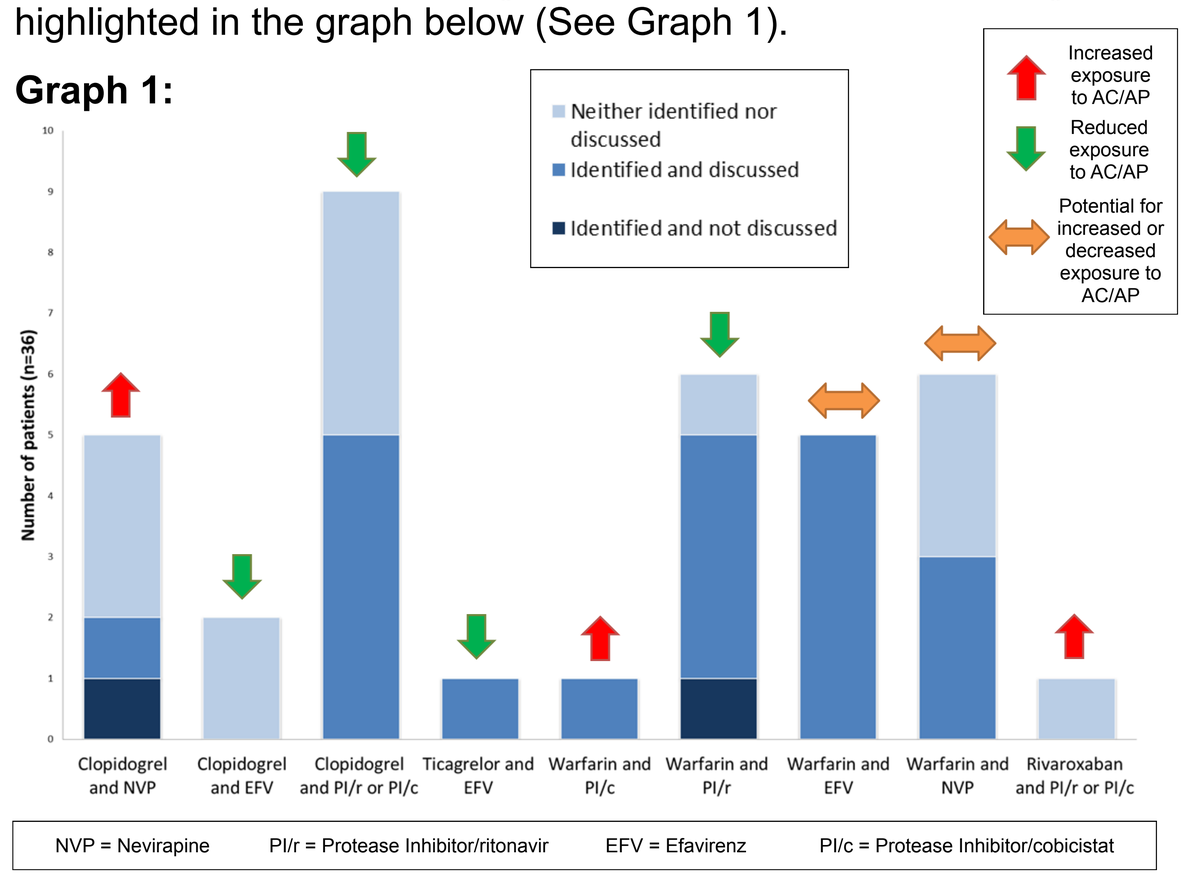
Age (years)	**n = 36**
<45	5% (2)
46 - 55	28% (10)
56 - 65	50% (18)
>65	17% (6)
Ethnicity [n (%)]	
White	78% (28)
Black	19% (7)
Other/not stated	3% (1)
Gender [n (%)]	
Male	89% (32)
Female	11% (4)

Table 3 : AP and AC Indications

APs	Cerebral Vascular Accident Stent Insertion following a Myocardial Infarction
ACs	Atrial Fibrillation, Recurrent Pulmonary Embolism/Deep Vein Thrombosis, Prosthetic heart valves, Left ventricular thrombosis, Anti-phospholipid syndrome

Co-administration of certain ARVs and AC/APs leading to a potential increased risk of bleeding or a thrombotic event occurring are highlighted in the graph below (See Graph 1).

Graph 1:



Conclusion and Limitations

No adverse events were recorded as a result of interacting ARVs and APs and/or ACs in combination.

A proportion of patients were co-prescribed interacting AC and/ or AP medicines with their ARVs which were not identified. Limitations of this audit included the potential for minor side effects such as bruising or early discontinuation which may not have been documented in the patients' notes and therefore not detected during data collection. Patients taking APs or ACs may not have been identified in clinic or pharmacy and therefore not recorded. A further limitation of the audit was that where exact initiation and stop dates were not available for APs or ACs, it was not possible to calculate the follow up time per patient.

The audit results demonstrated a need for clear communication and documentation across primary and secondary sectors with respect to the management of DDIs in patients living with HIV. Information should be provided to healthcare professionals and patients on how to seek further advice should a patient need to be started on an AP and/or AC.

In response to these audit findings, the Imperial HIV pharmacy team have created a patient alert card outlining possible interactions between ARVs, APs and ACs, and the importance of discussing changes in medicines with the appropriate specialist team for further advice. The patient alert card will also be made available on the HIV Pharmacy Association (HIVPA)[3] website.

References

[1] British HIV Association Standards of Care for People Living with HIV, 2013
[2] British HIV Association Standards of Care for People Living with HIV, 2018
[3] HIV Pharmacy Association, www.HIVPA.org