Safety of Anticoagulation (Warfarin with prolonged INR and Direct Oral Anticoagulant Therapy) in Cataract Surgery

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Disclosures: None



Introduction

Warfarin and Direct Oral Anticoagulants (DOACs) are widely adopted anticoagulant medications. Assessment of the National Cataract Dataset (NCD) in the United Kingdom in 2009 demonstrated over 5% of patients undergoing cataract surgery were concurrently on warfarin.

Over the last 15 years, several DOAC medications have emerged. With an increase in indications for anti-coagulation since the NCD was published, there is more than likely an increased proportion of patients on anticoagulation therapy. DOACs have also steadily been more readily adopted due to several advantages over the usage of warfarin.

Gaps in literature remain present with regards to safety profile of continuing warfarin therapy with prolonged INR or DOAC therapy in cataract surgery.

Methods

Retrospective analysis of a single-centre patient cohort over a 3-year period (15/06/2016-15/06/2019) utilising electronic medical records (EPIC) was undertaken. We assessed the risk of haemorrhagic complications secondary to cataract surgery associated with continuation of warfarin (with INR level) and DOAC therapy in patients on long-term anticoagulation therapy over a 30-day post-operative period.

Individual patient case-records were reviewed to identify type of anticoagulant utilised (if warfarin, we noted the pre-op INR value where present). Data on haemorrhagic complications, namely: hyphaema (including microhyphaemia), retrobulbar haemorrhage, suprachoroidal haemorrhage, and vitreous haemorrhage were collated, were present. The EPR system in place forces the clinical user to complete a section pertaining to anaesthetic and operative complications prior to navigating through other parts of a patient's clinical records on first review.

Non sight-threatening haemorrhagic complications such as subconjunctival haemorrhage were excluded during the analysis.

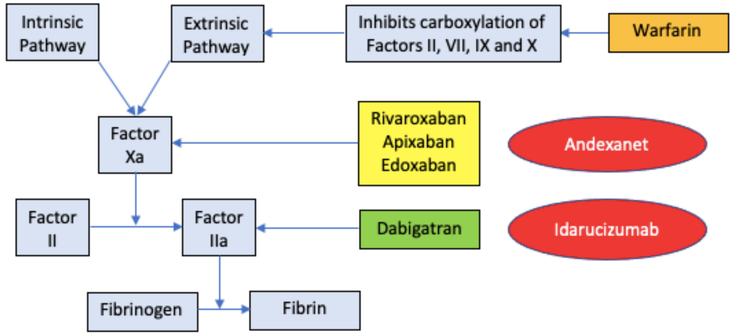


Figure 1: Anticoagulant Mechanism of Action in Coagulation Cascade and Reversal Agents

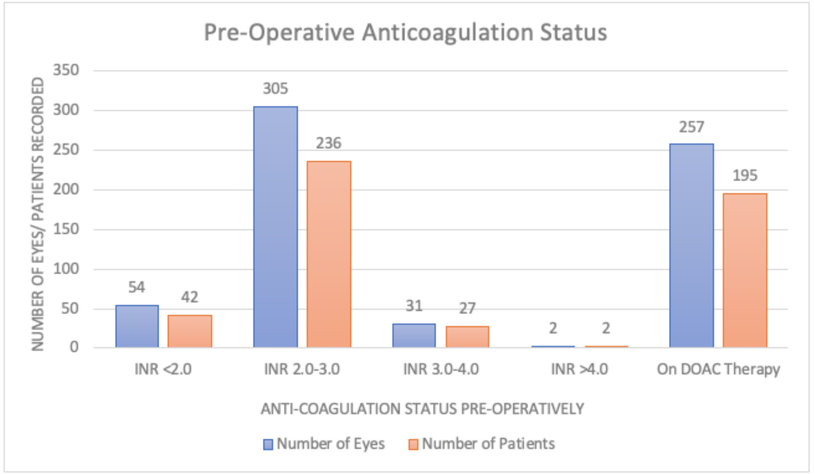


Figure 2: Pre-Operative Anticoagulation Status

Results

A total of 733 eyes operated on of 544 patients on anti-coagulant therapy were initially reviewed. 84 eyes operated on whilst on warfarin therapy were excluded, due to not having pre-operative INR recorded at pre-defined cut off.

Of remaining 649 eyes (502 participants):

- 195 patients (257 eyes) were on DOAC therapy.
- 307 patients (392 eyes) were on warfarin.

Pre-Op INR:

- 42 patients (54 eyes) had a recorded pre-op INR <2.0
- 236 patients (305 eyes) had a recorded pre-op INR 2.0 – 3.0.
- 27 patients (31 eyes) were noted to have pre-op INR 3.0 – 4.0 .
- 2 patients (2 eyes) had pre-op INR >4..

Mode of Anaesthesia: Eyes included in this series were operated on under one of the following: topical with intracameral anaesthesia (80.3%), sub tenon anaesthesia (12.9%). general anaesthesia (1.1%), or peribulbar anaesthesia (5.7%).

Haemorrhagic Complications: Nil serious haemorrhagic complications, intra-operatively or post-operatively, were identified among all operated eyes reviewed, irrespective of both anti-coagulant agent used and INR, in addition to mode of anaesthesia.

Visual Acuity Outcomes: 90.9% of operated eyes achieved VA of 20/40 (6/12) or better.

Conclusions/ Recommendations

1. Routine discontinuation of anti-coagulants prior to cataract surgery is not recommended, particularly if INR is within therapeutic range (supporting RCOphth previous recommendations), or utilising DOAC therapy.
2. Cataract surgery in patients with INR >3.0 appears to be safe from our patient cohort. More participants/ studies required to draw definitive conclusions.
3. Assessing usage of anti-coagulant in addition to anti-platelet/ dual antiplatelet therapy has not been considered. Further research/ analysis is required to assess safety.