Direct Oral Anticoagulants in Special Populations

STEPHANIE CARLIN, PHARMD, ACPR 2 (THROMBOSIS)

THROMBOSIS PHARMACIST, HAMILTON HEALTH SCIENCES

Faculty Disclosure

- **Faculty:** Stephanie Carlin, PharmD, ACPR2 (Thrombosis)

- **Relationships with financial sponsors:**
  - **Grants/Research Support:** None
  - **Speakers Bureau/Honoraria:** BMS-Pfizer, Springer Healthcare
  - **Consulting Fees:** None
  - **Patents**: None
  - **Other:** None

Disclosure of Financial Support

- **<u>Potential for conflict(s) of interest</u>:**
  - Stephanie Carlin has received a speaker fee/honorarium from Ontario Long Term Care Clinicians

Mitigating Potential Bias

- Disclosure of COIs

Atrial Fibrillation

- Most common sustained cardiac arrhythmia
- Prevalence increases with age; 10% of patients over age 80
- Risk factors include: hypertension, MI, HF, valvular heart disease, thyroid disease and OSA
- Associated with increased risk of stroke and systemic embolism
- Increasing CHADS2 score corresponds to increasing annual stroke risk
  - CHADS2 of 0=2% per year, CHADS2 of 6=18% per year
- AF strokes (20% of all ischemic strokes) are larger and associated with greater disability/death as compared to non-AF strokes (80% will be disabling or fatal)
- ASA reduces risk of stroke by 22%, warfarin by 64% (and DOACs to at least the same extent; all DOACs non-inferior to warfarin in large trials)

Venous Thromboembolism

- **"Usual sites":** leg, lung, arm
- **"Unusual sites":** splanchnic vein thrombosis (PVT, SMV, splenic), cerebral venous thrombosis, renal vein thrombosis, retinal vein thrombosis, ovarian vein thrombosis, etc
- **Provoked/unprovoked:** 70%/30%
- **Risk factors:** Prior history of VTE, advanced age, acute medical illness, surgery, cancer/chemotherapy, estrogen use, trauma (long bone/pelvic fractures and spinal cord injury), immobilization, central venous catheters, obesity
- **Goals of anticoagulation:** Prevent extension/recurrence, DVT -> PE, post thrombotic syndrome, chronic thromboembolic pulmonary hypertension
- **Anticoagulation reduces recurrence by 80-90% vs only 32% with ASA**

Case #1 – AF + Advanced Age + Bleed

- MS is a 92 F with a PMHx of AF (CHADS2=2 for age and HTN) for which she was receiving rivaroxaban 20 mg daily until 1 month ago. Other PMHx includes Alzheimer's dementia with frequent falls, hypothyroidism and GERD. Other medications include: bisoprolol 5 mg daily, donepezil 10 mg daily, levothyroxine 50 mcg daily and pantoprazole 40 mg daily.
- MS was admitted to hospital 1 month ago for an upper GIB secondary to a peptic ulcer from NSAID use (prescribed for a shoulder injury after a fall) and received 2 units of pRBCs. The ulcer was clipped on endoscopy. Her rivaroxaban and naproxen were stopped on admission and she was discharged back to LTC 3 days later.
- Lab values: Hb 110 (stable since discharge), Plt 355, INR 1.2, PTT 29, Cr 64 (CrCl = 55 with weight of 70 kg), ALT 15, Bili 10
- It is now 1 month post GIB. Would you restart the resident's anticoagulation? If yes, when and with what agent and dose? What if cause of GIB were unknown or found to be angiodysplasia or diverticular disease where endoscopic intervention did not fully address underlying cause?

Case #2 – AF + Renal Dysfunction

- PR is an 82 M with a PMHx of AF (CHADS2=5 for HTN, age, T2DM and previous stroke in 2016) for which he currently receives warfarin (target INR 2-3). His INRs have been labile with a poor TTR of 45%. He does not have any history of major bleeding. He has stage 4 CKD secondary to diabetes with a CrCl of 18 mL/min. Other PMHx: DLP. Other medications: metoprolol 25 mg bid, ramipril 5 mg daily, atorvastatin 20 mg qhs, lantus 40 units qhs, linagliptin 5 mg daily, calcium carbonate 1250 mg bid.
- Labs: Hb 98, Plt 154, INR 1.7, PTT 38, Cr 350 (CrCl = 18 mL/min given weight of 90 kg), ALT 33, Bili 6
- Would you change his antithrombotic regimen at this time? If yes, how and why?

Case #3 – VTE + Cancer

- HG is a 75 F with a history of non-small cell lung cancer for which she was treated with cisplatin and radiation therapy. On staging CT 3 months ago, she was diagnosed with progressive disease, including brain metastases and found to have an incidental LLL segmental PE. She received a prescription from her oncologist for apixaban 10 mg bid x 1 week, then apixaban 5 mg bid.
- She has since experienced significant functional and cognitive decline; palliative chemotherapy was stopped and she was admitted to LTC yesterday. Other PMHx includes: 50 pack year smoking history, T2DM, DLP. Other medications include: metformin 1000 mg bid, sitagliptin 50 mg daily and rosuvastatin 10 mg daily.
- Lab values: Hb 92 (stable; no bleeding), Plt 39 (down from 55 one month ago), INR 1.1, PTT 27, Cr 72 (CrCl = 57 given weight of 60 kg), ALT 44, Bili 16
- Would you change her antithrombotic regimen at this time? If yes, how and why?

Case #4 – AF + Bioprosthetic Valve + Concomitant Antiplatelet + Obesity

- JD is an 80 M with PMHx of AF (CHADS2=4 for age, HTN, ischemic stroke), DLP and obesity (132 kg; BMI = 42) who experienced an NSTEMI in October 2021. Cardiac cath at that time revealed triple vessel disease and he was advanced for cardiac surgery and underwent CABGx4 and insertion of a bioprosthetic tissue valve for severe aortic stenosis.
- JD experienced an ischemic stroke on POD 1 and given his cognitive deficits, was transferred to LTC on discharge. His discharge antithrombotic regimen included: warfarin (target INR 2-3) and ASA 81 mg daily which you have continued since that time. Other medications you continued since discharge include: bisoprolol 5 mg daily and atorvastatin 40 mg daily.
- Lab values: Hb 130, Plt 282, INR 2.7, PTT 42, Cr 100 (CrCl = 97 mL/min), ALT 32, Bili 14
- It is now October 2022. You are conducting a medication review for this resident with the pharmacist.
- Would you modify this resident's antithrombotic regimen and if yes, how and why?