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Antiplatelets and Anticoagulants: A Review

Nonye Uddoh, PharmD, BCACP, CDE
Lindsey Pardoe, PharmD, BCGP

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- You must attend the entire program, pass the quiz, and complete the evaluation by **November 20, 2018**
- The quiz and evaluation will be available in LearnSource today. Instructions will be provided at the end of the activity. You MUST search for and enroll in the course.
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Planning Committee

- Content Writers:
  - Nonye Uddoh, PharmD, BCACP, CDE
  - Lindsey Pardoe PharmD, BCGP
- Nurse Planner: Melissa B Smith RN, MSN, GNP BC
- ACPE Administrator/Content Presenter: Andrea Seitzman-Siegel, PharmD
- Original images created by: Lindsey Pardoe, PharmD, BCGP and Nonye Uddoh, PharmD, BCACP, CDE

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Pharmacist & RN/NP objectives

Participants will be able to

- Describe the differences between an anticoagulant and an antiplatelet medication
- Identify available agents and describe their indications and pertinent clinical considerations for drug selection
- List key patient counseling points regarding antiplatelet and anticoagulant therapy

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Pharmacy technician objectives

Participants will be able to

- Describe the differences between an anticoagulant and an antiplatelet medication
- State indications for antiplatelet therapy, dual antiplatelet therapy, and anticoagulation therapy
- Recall commonly used antiplatelet and anticoagulant agents

Agenda

- Review of Antiplatelet versus Anticoagulant
- Antiplatelet Agents
- Indications for Antiplatelet Therapy and DAPT
- Anticoagulant Agents – Indications and Considerations
- Indications for Triple Therapy
- Bleeding Risk
- Patient Counseling Points
- Case Study- throughout the presentation

Acronyms

ACS	Acute Coronary Syndrome (MI or Heart Attack)
AF or AFib	Atrial Fibrillation
BMS	Bare Metal Stent
DES	Drug Eluting Stent
DVT	Deep Vein Thrombosis
CAD	Coronary Artery Disease
CVD	Cardiovascular Disease
CABG	Coronary Artery Bypass Graft
PE	Pulmonary Embolism
PCI	Percutaneous Coronary Intervention (Stent)
SIHD	Stable Ischemic Heart Disease
TAVR	Transcatheter Aortic Valve Replacement

Case Introduction

- TM is a 55 year male old released from the hospital after an MI. He had a PCI with DES placement. CrCl is normal.
- PMH: HTN, HLD
- Medications PTA:
  - Lisinopril 10 mg daily
  - Atorvastatin 40 mg daily
  - ASA 81 mg daily

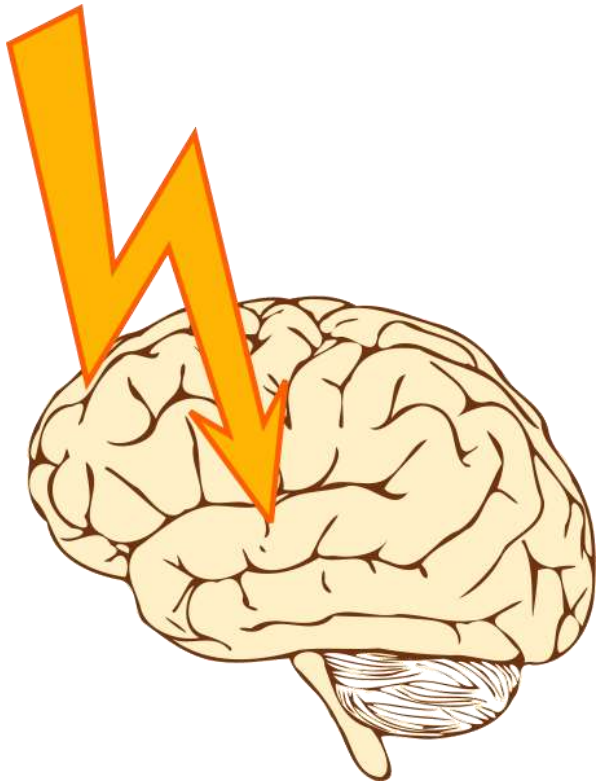
Antiplatelet Versus Anticoagulant

- Neither can break up an *existing* clot
  - Only tPA or thrombectomy can do this
- Both prevent clot formation, but via different mechanisms
- They are used for different indications, and may be combined in certain situations
- Many patients (and providers) identify both types of agents as “blood thinners”
  - Counseling opportunity

Antiplatelet Versus Anticoagulant

- Antiplatelets are more effective at preventing arterial clots
  - High pressure environment
  - Clots are mostly platelets
  - Think MI, stroke
- Anticoagulants are more effective at preventing venous clots and atrial clots
  - Low pressure, slow blood flow, “stasis”
  - Clots are mostly RBCs and fibrin
  - Think DVT, PE, cardioembolic stroke, Afib

Pathophysiology of ACS and Stroke



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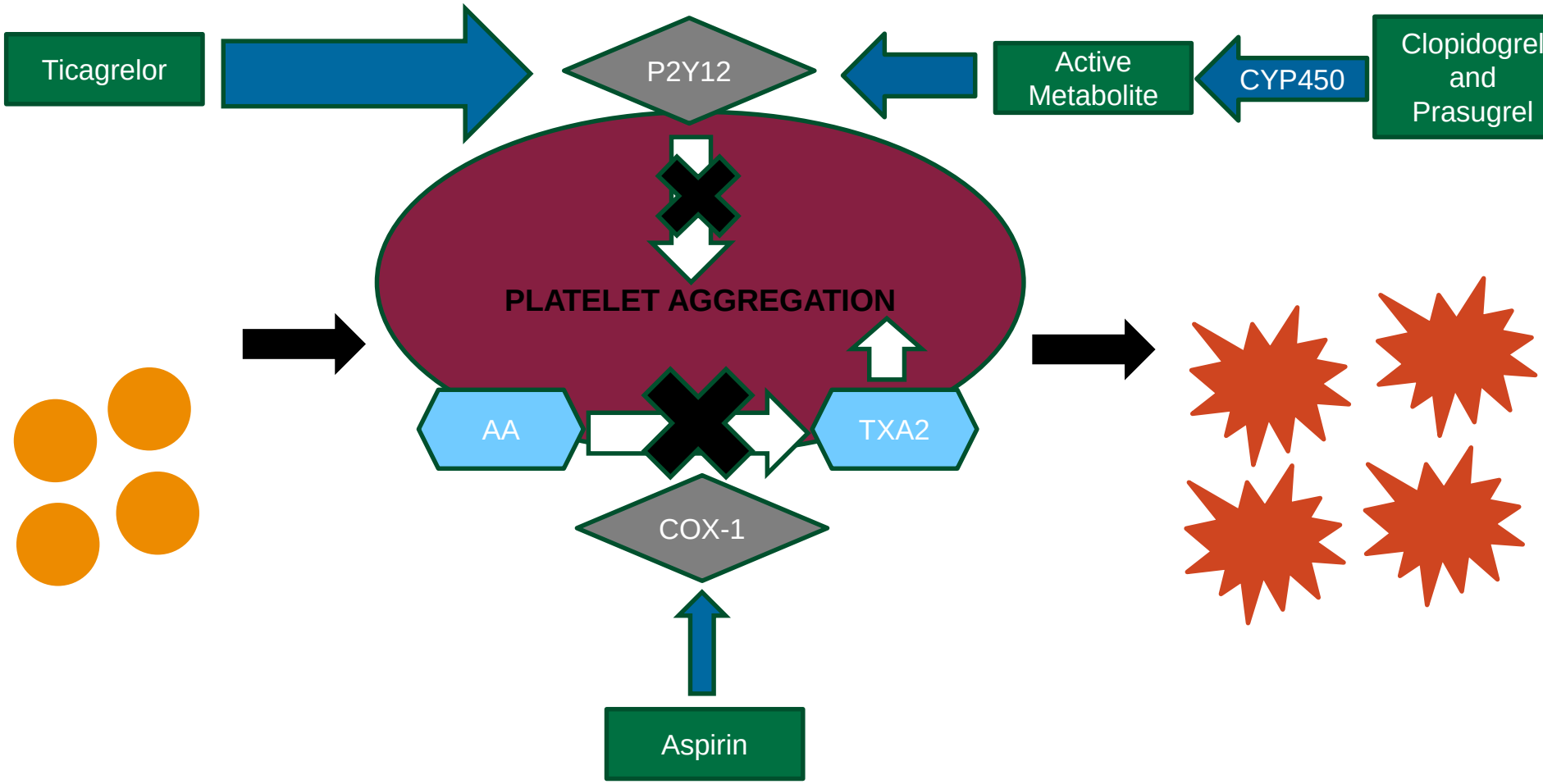
Antiplatelet Agents

Class	Examples	Mechanism
Cycloxigenase-1 (COX-1) Inhibitor (Irreversible)	Aspirin	Prevents platelet activation and aggregation by blocking formation of thromboxane A_2 (TXA_2)
Adenosine diphosphate (ADP) $P2Y_{12}$ Receptor Antagonists	Clopidogrel Ticlopidine Prasugrel Ticagrelor	Prevents platelet aggregation
Glycoprotein IIb/IIIa Receptor Antagonists	Abciximab Tirofiban Eptifbatide	Prevents platelet aggregation. Use limited to acute ACS. IV only.

Antiplatelet Mechanisms of Action



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Antiplatelet Agents

Medication	DDIs	Comments
Aspirin	NSAIDs	- Usually 81 mg preferred
Clopidogrel (Plavix®)	CPY 2C19 Inhibitors, repaglinide	- Losing favor s/p ACS
Ticagrelor (Brilinta®)	CYP3A4, simvastatin	- Preferred s/p ACS - Consider dose reduction if continued long term
Prasugrel (Effient®)	No major DDIs except for bleeding risk	- CI in hx of stroke/TIA - Consider dose reduction if < 60 kg - Avoid in age >75.
ASA/dipyridamole (Aggrenox®)	NSAIDs	- Primarily used for stroke prevention

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Indications for Antiplatelet Therapy

- Primary Prevention
  - Cardiovascular Disease
  - Colorectal Cancer
- Secondary Prevention of Cardiovascular Disease
  - MI
  - PCI
  - CABG
  - Stroke
- Transcatheter Aortic Valve Replacement (TAVR)

Primary Prevention - Practice Guidelines

Who may benefit from low dose aspirin therapy for primary prevention of cardiovascular disease?

Depends on who you ask…

ACCP (2012)	AHA/ASA (2011)	ADA (2018)
Adults **age 50 and older** should take a daily low dose aspirin.	Adults with a **10-year CVD risk of 6-10%** should take a low dose aspirin if potential benefits outweigh potential risks.	Consider a low dose aspirin in patients who are at an increased cardiovascular risk. This includes most men and women with diabetes **age 50 and older** with at least **one additional major risk factor** and who are not at an increased risk of bleeding.

Secondary Prevention of Cardiovascular Disease – CAD

- Single agent antiplatelet therapy is recommended for secondary prevention of coronary artery disease for the long term
  - Generally continued indefinitely unless bleeding becomes a major concern
  - Usually low dose aspirin

- Dual Antiplatelet Therapy (DAPT) is usually used for the short term following an event or intervention

Secondary Prevention of Cardiovascular Disease – Medically Managed ACS

- DAPT for 1 year s/p ACS, even if no stent placed
  - Clopdiogrel or ticagrelor plus aspirin
  - Reasonable to use ticagrelor over clopidogrel
- Aspirin continued indefinitely after 1 year of DAPT
  - Consider longer duration of DAPT if well tolerated

Secondary Prevention of Cardiovascular Disease – PCI

- DAPT is recommended following placement of a stent
- Duration of DAPT is longer for Drug Eluting Stents (DES) than for Bare Metal Stents (BMS)
- DAPT regimens include low dose aspirin in combination with a $P2Y_{12}$ antagonist
  - Ticagrelor is now preferred over clopidogrel s/p ACS
  - Prasugrel may be preferred over clopidogrel if a patient is NOT at a high risk of bleeding and does NOT have a history of stroke or TIA

Secondary Prevention of Cardiovascular Disease – PCI in Stable Disease

Indication	Duration of DAPT	Agent (plus ASA)	Comments
Stable Ischemic Heart Disease (SIHD) s/p BMS	At least one month	Clopidogrel	- Consider longer duration if no signs of bleeding, not at high risk for bleed
Stable Ischemic Heart Disease (SIHD)s/p DES	At least 6 months	Clopidogrel	- Consider longer duration if no signs of bleeding, not at high risk for bleed - Consider 3 months of therapy if very high risk of severe bleeding

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Secondary Prevention of Cardiovascular Disease – PCI s/p ACS

Indication	Duration of DAPT	Agent (plus ASA)	Comments
Acute ACS s/p BMS	At least 12 months*	Clopidogrel, prasugrel, or ticagrelor	- Reasonable to use ticagrelor over clopidogrel - Prasugrel reasonable only if no history of stroke/TIA and not at high risk of bleeding
Acute ACS s/p DES	At least 12 months*	Clopidogrel, prasugrel, or ticagrelor	- Reasonable to use ticagrelor over clopidogrel - Prasugrel reasonable only if no history of stroke/TIA and not at high risk of bleeding - Consider 6 months of therapy if at high risk for severe bleeding

*Consider extended duration if no sign of bleeding and not at high risk of bleeding.

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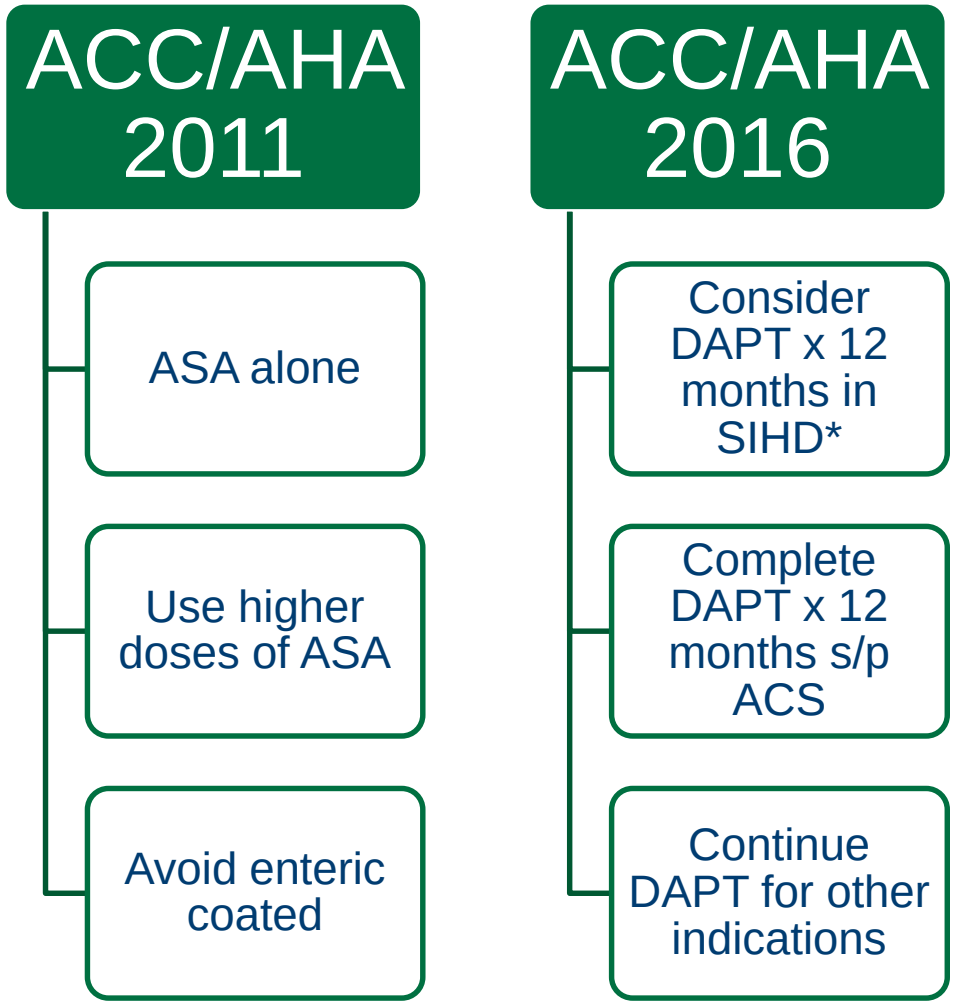
Secondary Prevention of Cardiovascular Disease – Coronary Artery Bypass Graft (CABG)



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Secondary Prevention of Cardiovascular Disease – Non-Cardioembolic Stroke

Single Agent

- Aspirin 81 mg – 325 mg daily
- Aspirin/dipyridamole 25/200 mg BID
- Clopidogrel 75 mg daily in patients who cannot take ASA

Consider DAPT with ASA and clopidogrel for 14 days following ischemic stroke or TIA

- Initiate within 24 hours
- Bleeding risk outweighs benefit long term
- Convert to single agent (long term) after the 14 days

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Transcatheter Aortic Valve Replacement (TAVR)

- More patients are receiving AVRs via this less invasive method
  - Easier recovery
  - No need for lifelong anticoagulation
- TAVRs require less intensive therapy
  - Warfarin x 3 months with INR goal of 2.5 if bleeding risk is low*
  - DAPT with ASA and clopidogrel for 6 months
  - Aspirin 81 mg daily indefinitely

Breaking News….announced 10/11/2018

- The FDA has approved Rivaroxaban (Xarelto®), in combination with aspirin, to reduce the risk of major cardiovascular events in patients with chronic CAD and PAD
- Rivaroxaban 2.5 mg BID in combination with low dose aspirin – long term
- Reduced rates of stroke (42%), CV death (22%), and MI (14%) compared to aspirin alone
- Higher risk of “major” bleeding, but no increased risk of intracranial hemorrhage or fatal bleeding

Case Review

- TM is a 55 year old released from the hospital after an MI. He had a PCI with DES placement. CrCl is normal.
- PMH: HTN, HLD
- Medications PTA:
  - Lisinopril 10 mg daily
  - Atorvastatin 40 mg daily
  - ASA 81 mg daily

Case Question 1

Which medication would be appropriate to add to TM's regimen given his recent MI and PCI with DES?

A) Warfarin with an INR goal of 2-3

B) Ticagrelor 90 mg BID

C) Clopidogrel 75 mg daily

D) None of the above, but increase ASA to 325 mg daily

Case Question 1 - Review

Which medication would be appropriate to add to TM's regimen given his recent MI and PCI with DES?

A) Warfarin with an INR goal of 2-3

B) Ticagrelor 90 mg BID (Already on low dose ASA, so adding ticagrelor would be an acceptable DAPT regimen. Reasonable to choose this over clopidogrel.)

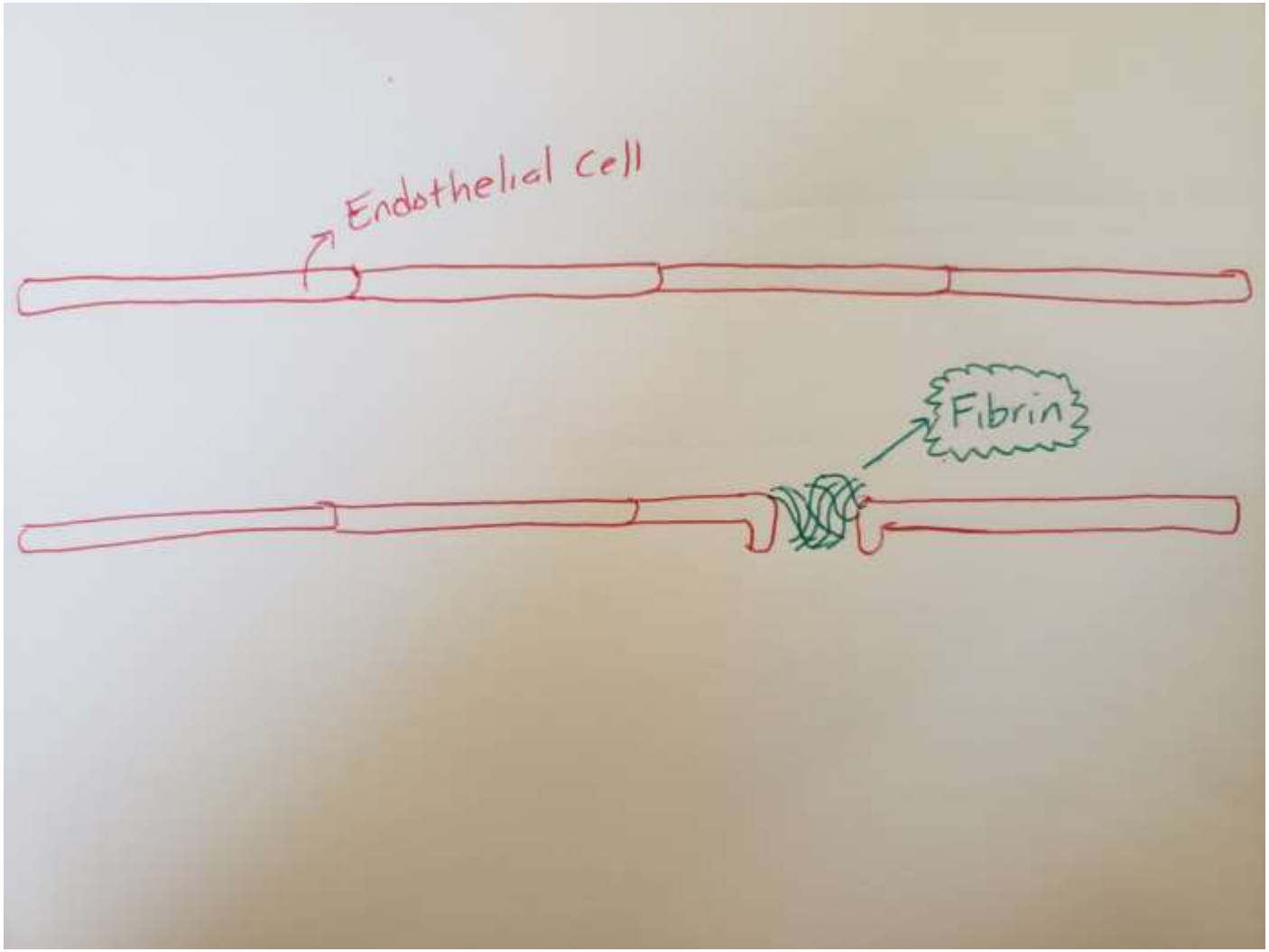
C) Clopidogrel 75 mg daily (Already on low dose ASA, so adding clopidogrel would be an acceptable DAPT regimen. Starting to lose favor but still an option.)

D) None of the above, but increase ASA to 325 mg daily

Oral Anticoagulants

- Review of Clotting Cascade and Mechanism
- Agents, Indications, and Considerations
- Triple Therapy
- Bleeding Concerns
- Consequences of Therapy Interruption
- Patient Counseling Points

Endothelial Injury and Fibrin Formation



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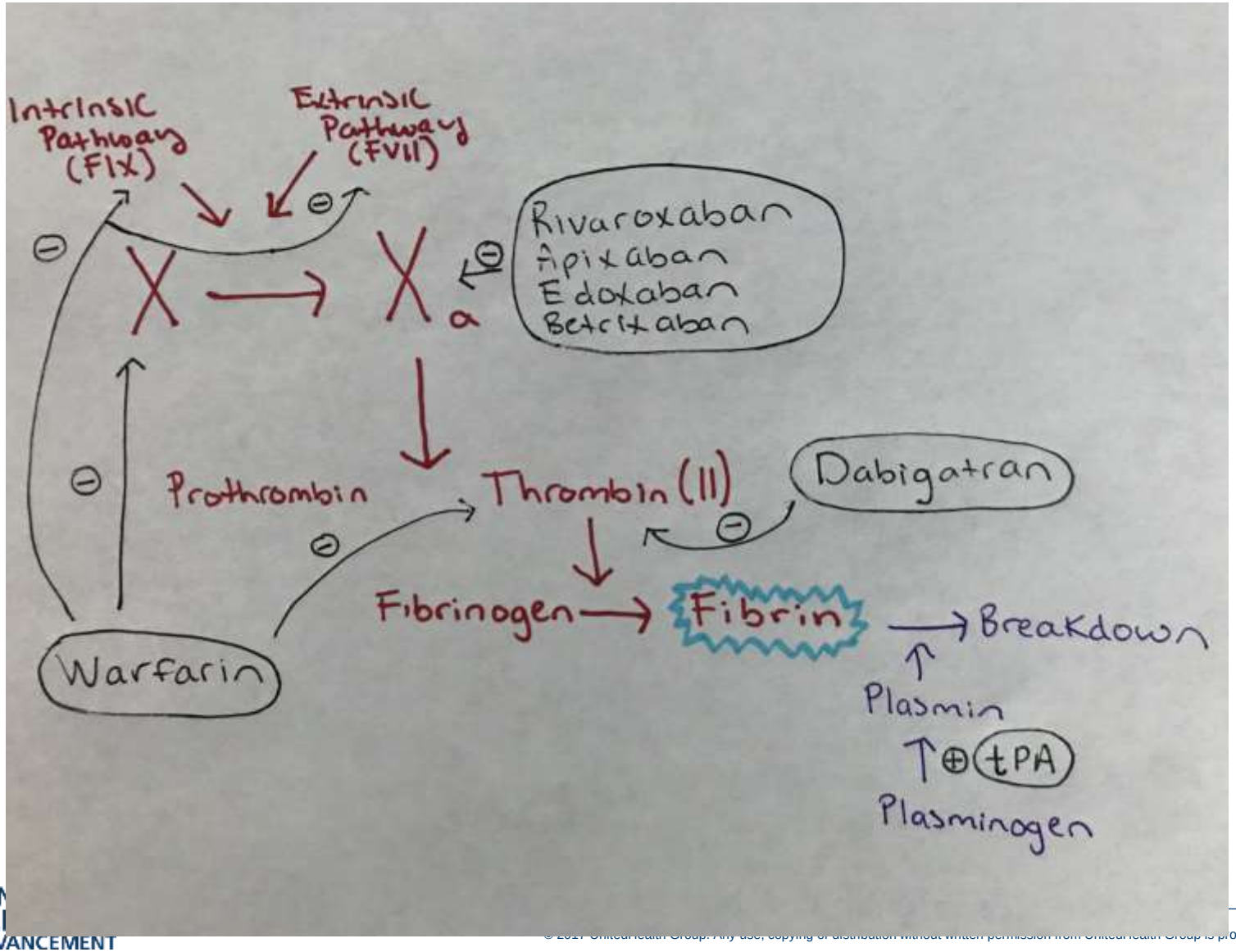
Clotting Cascade and Drug Targets



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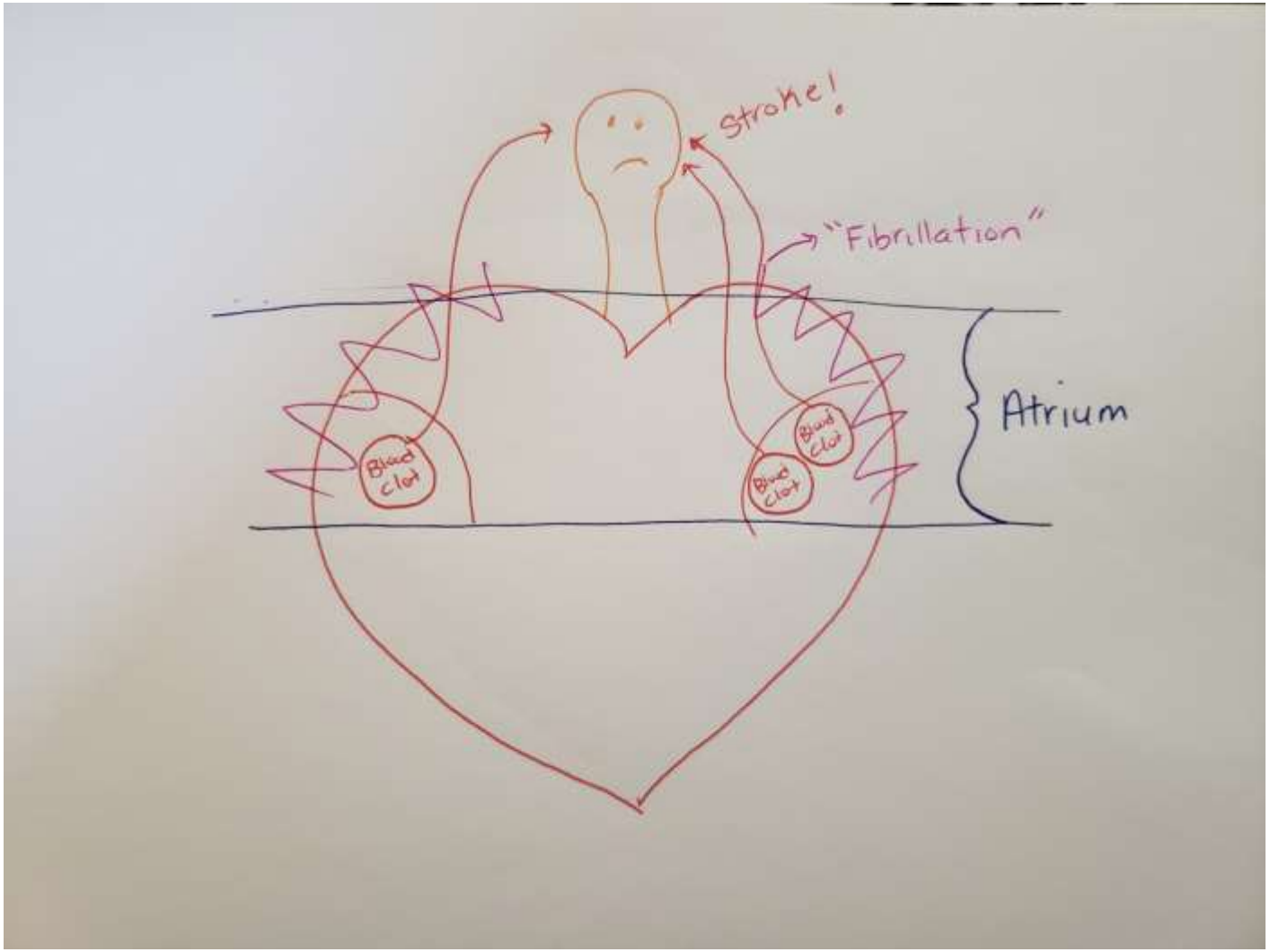
Atrial Fibrillation Pathophysiology



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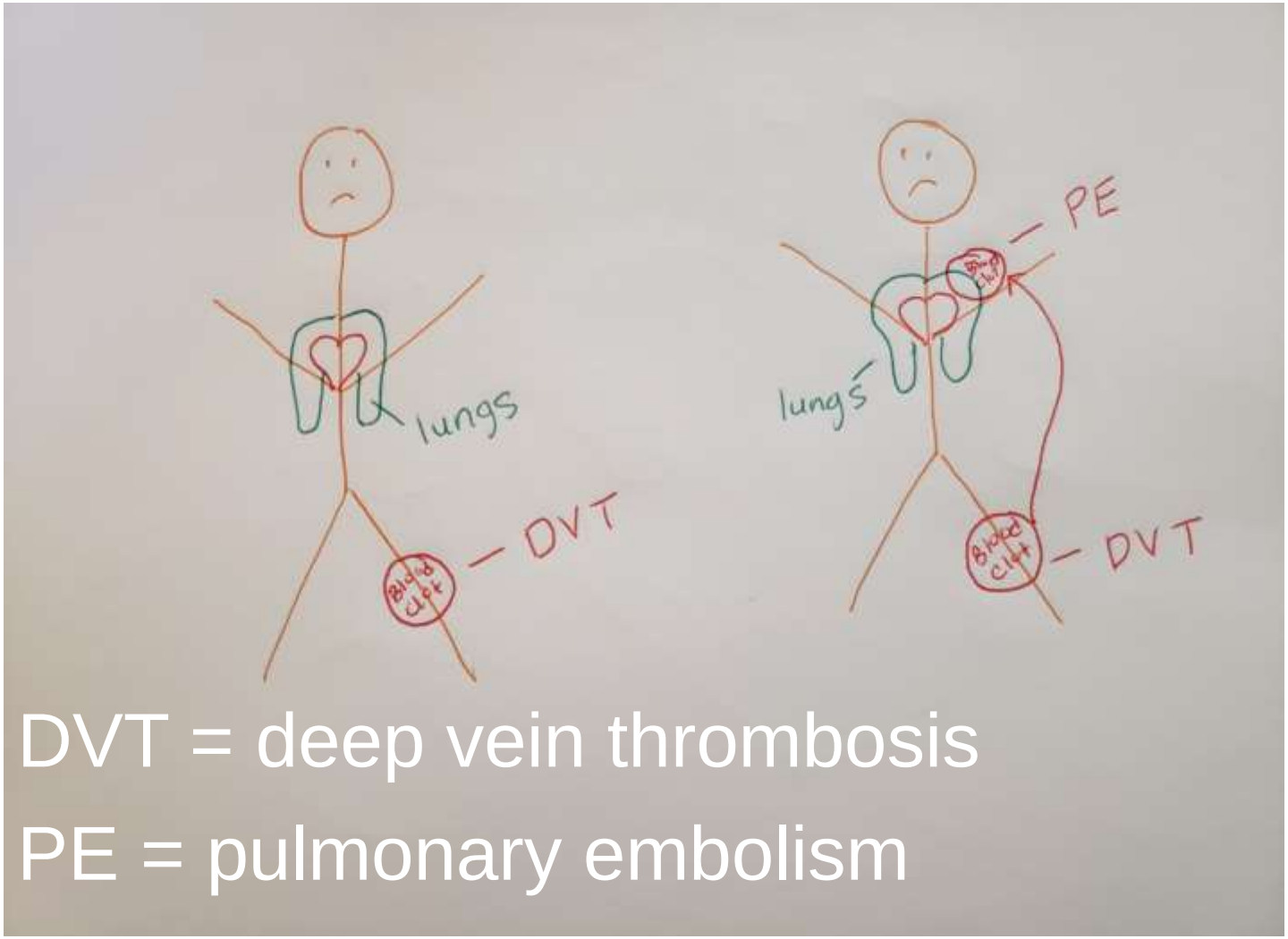
VTE (venous thromboembolsim) Pathophysiology



- DVT = deep vein thrombosis
- PE = pulmonary embolism

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Oral Anticoagulants

- Apixaban (Eliquis)
- Rivaroxaban (Xarelto)
- Edoxaban (Savaysa)*
- Dabigatran (Pradaxa)
- Warfarin

Case Update

- TM now 61 years old with a new diagnosis of A fib. CrCl is normal. His cardiologist is ready to start an anticoagulant.
- PMH: MI s/p DES 6 years ago, HTN, HLD, seizure disorder
- Medications:
  - Metoprolol ER 50mg daily
  - Phenytoin 50mg daily
  - Lisinopril 10 mg daily
  - Atorvastatin 10 mg daily
  - ASA 81 mg daily
- Questions to keep in mind:
  - Most appropriate anticoagulant and dose?
  - Drug interactions?

Apixaban (Eliquis)

- Mechanism: Direct factor Xa inhibitor
- Approved indication
  - Thromboembolism (stroke) prevention in nonvalvular A fib
  - VTE prevention post-hip or knee replacement
  - DVT/PE treatment and prevention of recurrence
- Dose
  - BID

Therapeutic considerations of Apixaban

- Requires BID dosing
- Caution in certain populations
- Prophylaxis for at least 10-14 days after hip/knee replacement
- For VTE treatment, continue for at least 3 months.
  - Benefit of extended use may not outweigh risk in patients with high bleeding risk.

Switching To/From Warfarin

- To switch from warfarin, stop warfarin, then start apixaban when INR<2
- To switch to warfarin, bridge with parenteral anticoagulant

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Select Drug Interactions with Apixaban

- Apixaban is a substrate of CYP 3A4 & Pgp
  - Inhibitors of 3A4: itraconazole, ketoconazole, ritonavir
  - Inducers of 3A4: carbamazepine, phenytoin, phenobarbital
- Caution with antiplatelets and anticoagulants, including clopidogrel.
- Dual antiplatelet therapy about doubles bleeding risk.

Pre-surgery Considerations and Reversal Agent

- Pre-op, pre-procedure washout:
  - Depends on low, moderate, or high bleeding risk
- Reversal:
  - Activated charcoal
  - Reversal agent: coagulation factor Xa (Andexxa)

Rivaroxaban (Xarelto)

- Mechanism: Direct factor Xa inhibitor
- Approved indications
  - Same as apixaban
- Dose:
  - QD

Therapeutic Considerations for Rivaroxaban

- Caution in certain populations
- For VTE treatment, continue for at least 3 months.
  - Benefit of extended use may not outweigh risk in patients with high bleeding risk.
- Prophylax for at least 10 to 14 days after hip or knee replacement, and up to 35 days, especially after hip replacement.

Switching To/from Warfarin

- Switching to/from other anticoagulants:
  - To switch from warfarin, stop warfarin, then start rivaroxaban when INR <3
  - To switch to warfarin:
    - Bridge with parenteral anticoagulant

Select Drug Interactions with Rivaroxaban

- Substrate of Pgp and CYP 3A4
  - 3A4 inhibitors: ketoconazole, itraconazole, posaconazole, ritonavir
  - 3A4 inducers: phenytoin, rifampin, carbamazepine, St Johns wort
  - Pgp/3A4 inhibitor: erythromycin
- Avoid use with other anticoagulants
  - Antiplatelets increase bleeding risk; co-administer with caution.

Pre-surgery Considerations and Reversal Agent

- Pre-op, pre-procedure washout:
  - Depends on low, moderate, or high bleeding risk
- Reversal:
  - Activated charcoal
  - Reversal agent: coagulation factor Xa (Andexxa)

Edoxaban (Savaysa)

- Direct factor Xa inhibitor
- Approved Indications:
  - Thromboembolism (e.g stroke) prevention in nonvalvular A fib in patients with **CrCl >50-95 ml/min***
    - CrCl > 95 mL/min: increased risk of ischemic stroke
    - CrCl < 50 ml/min: increased risk of bleeding
  - DVT/PE treatment (following 5-10 days' treatment with a parenteral anticoagulant)
- Dose
  - QD

Dabigatran (Pradaxa)

- Mechanism: Direct thrombin inhibitor
- Approved indications
  - Stroke prevention in Afib
  - DVT/PE
  - VTE prevention post hip replacement
- Dose
  - BID

Therapeutic Considerations of Dabigatran (Pradaxa)

- BID dosing
- Causes gastrointestinal symptoms in over 10% of patients.
- Cautions/contraindications
- Dispense/store in original package
- For VTE treatment, continue for at least 3 months.
- Prophylax for at least 10-14 days after hip/knee replacement, and up to 35 days, especially after hip replacement

Pre-surgery considerations and Reversal Agent

- Pre-op, pre-procedure washout
  - Depends on low, moderate, or high bleeding risk
- Reversal agent:
  - Consider activated charcoal within 2-4 hours after dabigatran administration.
  - Diuresis promotes excretion
  - Specific reversal agent: idarucizumab (Praxbind)

Switching To/from other Warfarin

- To switch from warfarin, stop warfarin, then start dabigatran when INR<2.
- To switch to warfarin, start warfarin 1-3 days before stopping dabigatran, depending on CrCl
  - 3 days (CrCl>50ml/min)
  - 2 days (CrCl 30-50)
  - 1 day (CrCl 15-30)

Select Drug Interactions with Dabigatran

- Pgp inhibitors may increase dabigatran levels
  - Dose reduction when used with Pgp inhibitors based on CrCl
  - Reduce dose to 75mg BID with ketoconazole or dronedarone if CrCl 30-50ml/min.
- Pgp inducers could decrease dabigatran efficacy. Avoid P-gp inducers.

Select Drug Interactions with Dabigatran

- Caution with antiplatelets. Use with aspirin 100mg or less can be considered.
  - Co-administration with aspirin or clopidogrel about doubles bleeding risk.
- Drugs that increase gastric pH could reduce efficacy.
  - Take dabigatran at least 2 hours before antacids

Warfarin

- Mechanism: Inhibits clotting factors: II, VII, IX, X and proteins C and S
- Approved Indication:
  - Prevention/treatment of venous thrombosis/PE.
  - Prevention/treatment of thromboembolism due to A fib or prosthetic heart valve.
  - Secondary prevention post-MI*
- Dose: Variable and patient specific

Pre-surgery considerations and Reversal Agent

Reversal Agent = Vitamin K Washout is 5 days	**High risk of thrombosis**	**Low Risk of thrombosis**
High bleeding risk procedure/surgery • **Neuro-vascular, abdominal, urologic, and cardiothoracic surgery** • **Major orthopedic surgery lasting 45-60min** • **Polypectomy** • **Variceal treatment** • **Other endoscopic procedures**	Stop warfarin 5 days prior to surgery/procedure. Bridge warfarin.*	Stop warfarin 5 days prior to surgery/procedure. Do not bridge warfarin.
Low bleeding risk procedure/surgery • **Minor dental procedure** • **Minor skin surgery** • **Cataract surgery** • **Catheter ablation** • **Angiography**	Continue anticoagulant during procedure/surgery. For warfarin, ensure INR is within therapeutic range. Ensure DOAC dose is correct.	Continue anticoagulant during procedure/surgery. For warfarin, ensure INR is within therapeutic range. Ensure DOAC dose is correct

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Therapeutic Considerations of Warfarin

- INR monitoring required at least every 4 weeks. Goal 2-3 for most indications.
- Prophylax for at least 10-14 days after hip or knee replacement, and up to 35 days, especially after hip replacement
- Not more effective than aspirin for noncardioembolic stroke*.
- For VTE treatment, continue for at least 3 months.
  - Benefit of extended use may not outweigh risk in patients with high bleeding risk.

Select Drug Interactions with Warfarin

- Many drug and food interactions
- Potential for significant interactions with inducers/inhibitors of CYP2C9, 2C19, 1A2, 3A4.
  - For example: Bactrim, metronidazole
  - Amiodarone: Reduce warfarin by 20-50%
  - Monitor INR when taking antibiotics, even in stable patients
    - Upon initiation, discontinuation, and throughout

Summary of Oral Anticoagulants

	Warfarin (Coumadin)	Dabigatran (Pradaxa)	Apixaban (Eliquis)	Rivaroxaban (Xarelto)	Edoxaban (Savaysa)
MOA	VKA – Factors II, VII, IX, X, Proteins C&S	Direct Thrombin Inhibitor	Fxa Inhibitor	Fxa Inhibitor	Fxa Inhibitor
Dosing	Daily, per INR	BID	BID	Daily	Daily
Reversal	Vitamin K	Idarucizumab	coagulation factor Xa (Andexxa)	coagulation factor Xa (Andexxa)	coagulation factor Xa (Andexxa)
DDIs**	Many – antibiotics, CYP2C9, Vitamin K foods	P-glycoprotein substrate	CYP3A4, P-glycoprotein substrate	CYP3A4, P-glycoprotein substrate	Rifampin (PGP Inducer)
Renal Dose Adjustment	Per INR	Yes, also concurrent strong PGP inhibitors	Yes, poorly defined for non-AF indications	Yes, poorly defined for non-AF indications	Yes Avoid if CrCl > 95!
Misc	Keep weekly Vitamin K intake consistent Take in PM	Keep in original packaging Do not open capsules		Take 15 mg and 20 mg doses with food Evening meal for Afib	Newest anticoagulant

	Warfarin (Coumadin)	Dabigatran (Pradaxa)	Apixaban (Eliquis)	Rivaroxaban (Xarelto)	Edoxaban (Savaysa)
Non-Valvular Afib	-Per INR - Only oral AC used for patients with mechanical valve/valvular Afib -INR goal 2-3 or 2.5-3.5	- 150 mg BID *-CrCl 15-30: 75 mg BID* *-CrCl < 15: Avoid use*	-5 mg BID *- If 2 out of the 3 apply, reduce dose to 2.5 mg BID: SCr ≥ 1.5, age ≥ 80, weight ≤ 60 kg*	-CrCl > 50: 20 mg daily *- CrCl 15-50: 15 mg daily* *- CrCl < 15: Avoid use*	- 60 mg daily for CrCl 51-95 *-30 mg daily for CrCl 15-30* *- Do not use if CrCL > 95*
DVT/PE trx	Per INR	-150 mg BID after 5 days of parenteral AC *- Avoid if CrCl < 30*	-10 mg BID x 7 days, followed by 5 mg BID *- no rec for renal dosing*	-15 mg BID x 21 days, then 20 mg daily *- Avoid if CrCl < 30*	-60 mg BID after 5-10 days of parenteral AC *- 30 mg daily for CrCl 15-50 OR weight ≤ 60 kg OR strong PGP inhibitor.*
DVT/PE ppx with hip/knee replacement	Typically not used due to time to become therapeutic	- Hip: 110 mg on day of surgery, then 220 mg daily for 28-35 days -Knee: Not indicated *-Avoid if CrCl < 30*	- Hip: 2.5 mg BID x 35 days -Knee: 2.5 mg BID x 12 days *-no rec for renal dosing*	- Hip: 10 mg daily x 35 days -Knee: 10 mg daily x 12 days *- Avoid if CrCl < 30*	Not indicated
Prevention of DVT/PE Recurrence	Per INR	- 150 mg BID - *Avoid if CrCl < 30*	-2.5 mg BID *-no rec for renal dosing*	-20 mg daily *-Avoid if CrCl < 30*	Not indicated

Case Update Review

- TM now 61 years old with a new diagnosis of A fib. CrCl is normal. His cardiologist is ready to start an anticoagulant.
- PMH: MI s/p DES 6 years ago, HTN, HLD, seizure disorder
- Medications:
  - Metoprolol ER 50mg daily
  - Phenytoin 50mg daily
  - Lisinopril 10 mg daily
  - Atorvastatin 10 mg daily
  - ASA 81 mg daily
- Questions to keep in mind:
  - Most appropriate anticoagulant and dose? Drug interactions?

Case Question # 2

Which anticoagulant with **correct dose** is appropriate for him?

1. Apixaban 5mg BID
2. Rivaroxaban 10 mg BID
3. Dabigatran 75 mg QD
4. Edoxaban 30mg TID

Case Question # 2

Which anticoagulant with **correct dose** is appropriate for him?

1. Apixaban 5mg BID
2. Rivaroxaban 10 mg BID
3. Dabigatran 75 mg QD
4. Edoxaban 30mg TID

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Case Question # 3

After checking for drug interactions, which medication are you most concerned with?

1. Phenytoin
2. Lisinopril
3. Atorvastatin
4. Metoprolol ER

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Case Question # 3

After checking for drug interactions, which medication are you most concerned with?

1. Phenytoin
2. Lisinopril
3. Atorvastatin
4. Metoprolol ER

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Case Question # 4

You talk with him 1 year later and he tells you he now has a prosthetic heart valve. What do you recommend at this time?

1. Keep Apixaban
2. Change to Rivaroxaban
3. Change to Dabigatran
4. Switch to Warfarin

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Triple Antithrombotic Therapy

- Patients with multiple co-morbidities may present with triple antithrombotic therapy
  - Aspirin PLUS Antiplatelet PLUS Anticoagulant
    - Such as aspirin 81 mg daily, clopidogrel 75 mg daily, and rivaroxaban 20 mg daily
- Increased risk of bleeding, but patient may have indications for all 3
  - Patient with Afib who had a recent PCI with DES
  - Review history, make sure they have a cardiologist involved in their care
  - Counsel on bleeding risk

Triple Antithrombotic Therapy - Considerations

- Consider CHA2DS2-VASc score
  - If score is 0 or 1, anticoagulation may not be appropriate
  - Asses INR goal
- Use aspirin 81 mg, not higher doses
- Consider shorter duration of DAPT following PCI
  - One antiplatelet agent should be continued long term
  - Some differences among the guidelines
- Consider PPI to prevent GI bleed
- Monitor carefully for bleeding

Consequences of Therapy Interruption

- Stent re-thromosis s/p DES or BMS
  - Risk is extremely high immediately after PCI
- Loss of graft patency s/p CABG
  - Could result in MI or need for another procedure
- PE, DVT, stroke
  - Oral anticoagulants have Black Box Warning for stroke risk with discontinuation
- Emphasize importance of adherence
  - Educate on signs and symptoms of bleeding and what to do if bleeding occurs
  - Educate on indications for each medication

Bleeding Concerns with DAPT and Anticoagulation

- Delay elective non-cardiac surgery if possible
  - Review specific guidelines for discontinuation recommendations for surgery/procedures
    - Confer with cardiologist and/or surgeon
  - Often, DAPT can be continued for minor dental or dermatological procedures
- Assess ideal duration of DAPT
- Assess risk/benefit of anticoagulation
  - Consider CHA2DS2-VASc score and fall risk
- Use of PPI in those at high risk of bleeding

Patient Counseling Points for DAPT and AC Therapy

- Avoid NSAIDs
- Warfarin DDIs, food interactions
- Remember herbals can increase bleeding risk
  - Fish oil*, Garlic, Ginger, Ginkgo, Glucosamine, Co-Q10
- Monitor for bleeding – educate on signs and symptoms
  - When to call PCP or 911
  - Consider wallet card or ID bracelet
- Always report falls to provider and seek immediate medical attention for head strike
- Review consequences of non-adherence

Case Question 5

What is/are appropriate counseling points for TM?

A. If you fall and hit your head, let your doctor know at your next follow up.

B. Bright red or dark and tarry stool could be a sign of bleeding in your stomach or intestines. Call your doctor right away or go to the ER if you feel dizzy or sick.

C. Talk to your doctor or pharmacist before starting any new medications, even OTCs and herbals. Make sure all your doctors know you are on a blood thinner.

D. If you get a headache, it's okay to take same naproxen or Motrin.

Case Question 5

What is/are appropriate counseling points for TM?

A. If you fall and hit your head, let your doctor know at your next follow up. (Alert provider right away, or go to ER if you have symptoms like dizziness, confusion, sleepiness, or bleeding)

B. Bright red or dark and tarry stool could be a sign of bleeding in your stomach or intestines. Call your doctor right away or go to the ER if you feel dizzy or sick. (Appropriate)

C. Talk to your doctor or pharmacist before starting any new medications, even OTCs and herbals. Make sure all your doctors know you are on a blood thinner. (Appropriate)

D. If you get a headache, it's okay to take same naproxen or Motrin. (NSAIDs can increase bleeding risk. Tylenol is preferred in patients taking anticoagulants or antiplatelet agents.)

Key Points

- Anticoagulants and antiplatelets are used for different indications and are not interchangeable
- Issues with these medications are nearly always “high priority issues”
- Always double check dosing, drug interactions, and dose adjustments
  - If you’re not sure, look it up!
- Patient education is key
  - Adherence, bleeding risk

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Questions

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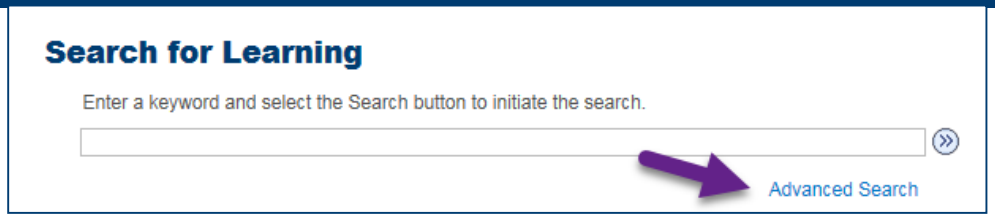

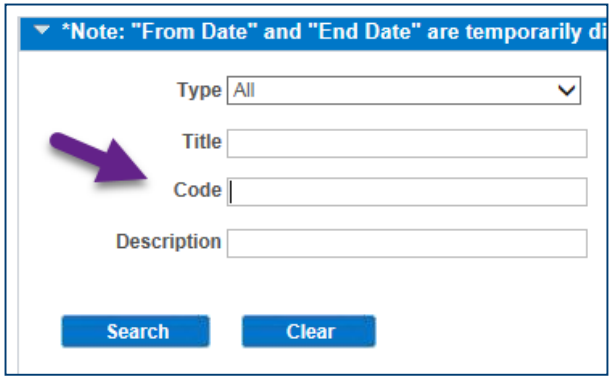

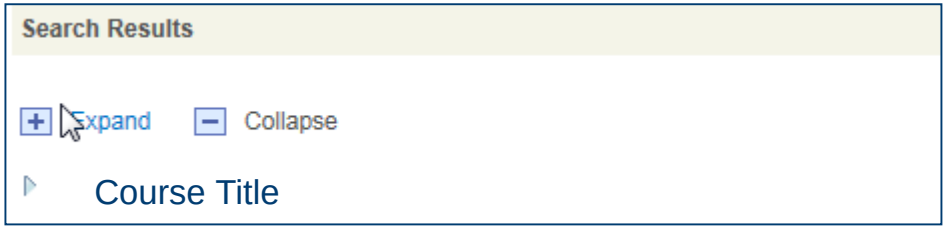

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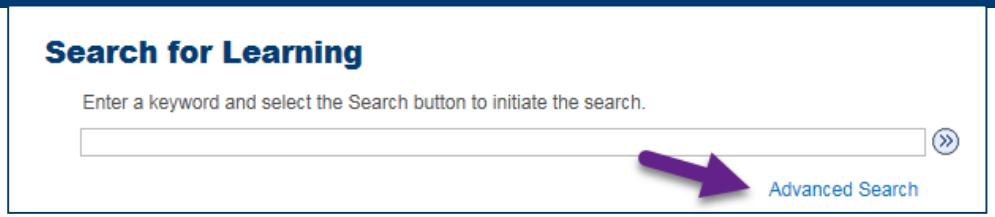

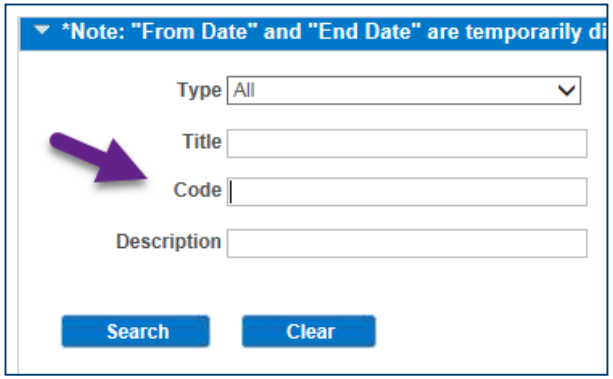

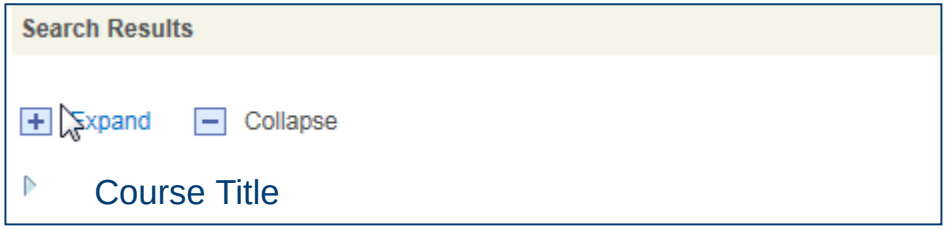

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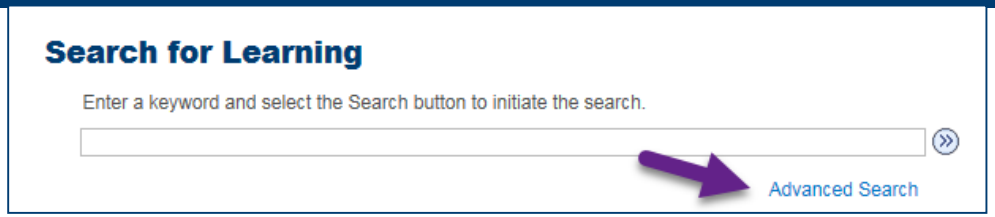

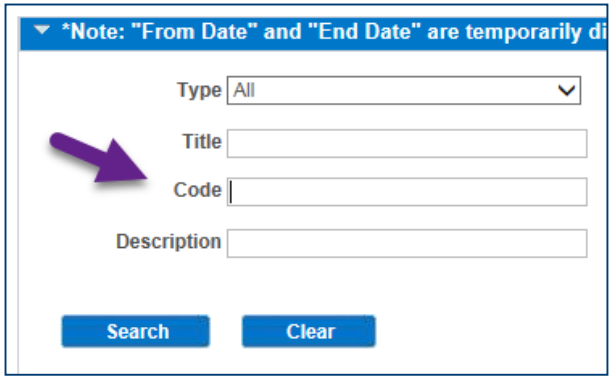

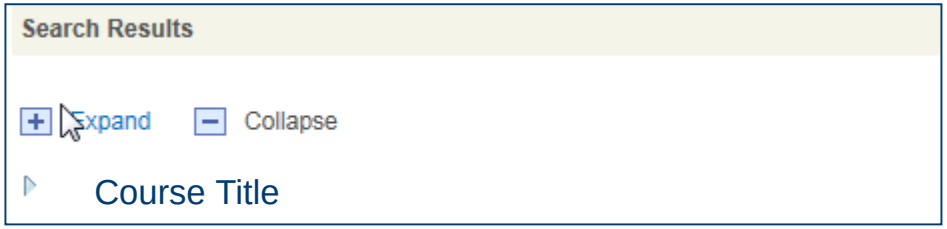

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Therapeutic Considerations for Edoxaban

- Not more effective at higher CrCl than warfarin
- Caution in certain populations
- For VTE treatment, continue for at least three months.
  - Benefit of extended use may not outweigh risk in patients with high bleeding risk.

Switching To/From Warfarin

- To switch from warfarin, stop warfarin, then start edoxaban when INR <2.5.
- To switch to warfarin, reduce edoxaban dose by half and start warfarin.
  - Check INR at least weekly, just prior to edoxaban dose. Stop edoxaban once INR is >2 and is stable.
  - Alternatively, stop edoxaban and “bridge” with a parenteral anticoagulant until INR is >2 and is stable.

Pre-surgery considerations and Reversal Agent

- Pre-op, pre-procedure washout
  - Depends on low, moderate, or high bleeding risk
- Reversal agent:
  - Consider activated charcoal within 2-4 hours after edoxaban ingestion.
  - No specific antidote.

Select Drug Interactions with Edoxaban

- Use with anticoagulants not recommended. Caution with antiplatelets.
- Substrate of Pgp and CYP 3A4
  - Inducers of Pgp and 3A4: Rifampin, phenytoin, carbamazepine, phenobarbital
  - Inhibitors of Pgp: azithromycin, ketoconazole, quinidine, verapamil