2016 CHEST ANTITHROMBOTIC THERAPY FOR VTE DISEASE:

KEY GUIDELINE UPDATES AND PATIENT CASES

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OBJECTIVES

- State the most recent changes to the 2016 CHEST VTE (venous thromboembolism) guidelines regarding anticoagulation therapy
- Contrast the 2016 CHEST VTE guideline updates regarding anticoagulation with the 2012 guidelines
- Apply the updated guidelines to patient cases to design appropriate, individualized anticoagulation therapy

ANTICOAGULANTS

FOR VTE TREATMENT

UNFRACTIONATED HEPARIN

- Heparin infusion (inpatient only)
- MOA
  - Prevents formation of thrombin by potentiating the action of antithrombin III (ATIII)

LOW MOLECULAR WEIGHT HEPARINS (LMWH)

- Lovenox (enoxaparin)
- Inpatient or outpatient treatment
- MOA
  - Similar to heparin, but with higher anti-factor Xa activity than heparin (more thrombin activity)

FACTOR XA INHIBITOR

- Arixtra (fondaparinux)
- MOA
  - Synthetic, indirect factor Xa inhibition via ATIII to prevent thrombin formation

VITAMIN K ANTAGONIST (VKA)

- Coumadin or Jantoven (warfarin)
- MOA
  - Depletes vitamin K reserves and thereby reduces formation of clotting factors II, VII, IX, X, and proteins C & S

DIRECT ORAL ANTICOAGULANTS (DOAC)

DIRECT THROMBIN INHIBITOR

- Pradaxa (dabigatran)
- MOA
  - Prodrug
  - Inhibits free and fibrin-bound thrombin

FACTOR XA INHIBITORS

- Xarelto (rivaroxaban)
- Eliquis (apixaban)
- Savaysa (edoxaban)
- MOA
  - Inhibits platelet activation and fibrin clot formation via direct activity on Xa

2016 CHEST GUIDELINE UPDATES

ANTITHROMBOTIC THERAPY FOR VTE

LONG-TERM VS. EXTENDED THERAPY

Long-term therapy	• First 3 months of therapy
Extended therapy	• No scheduled stop date for therapy

2016 CHOICE OF "LONG-TERM" ANTICOAGULATION

Proximal DVT or PE

↓

Long-term therapy

↓

DOAC > VKA > LMWH

Grade 2B; Grade 2C

2012 CHOICE OF "LONG-TERM" ANTICOAGULATION

Proximal DVT or PE

↓

Long-term therapy

↓

VKA > LMWH > Pradaxa or Xarelto

Grade 2C

CHOICE OF "EXTENDED" ANTICOAGULATION

DVT of leg or PE

↓

Extended Therapy

↓

Continue same anticoagulant AFTER 3 months

Grade 2C

CHOICE OF "EXTENDED" ANTICOAGULATION

Proximal DVT of leg or PE (unprovoked)

↓

Extended Therapy without anticoagulants

↓

Aspirin > No Aspirin

Grade 2B

MALIGNANCY

Active Cancer + DVT of leg or PE

↓

Long term therapy (first 3 months)

↓

LMWH > VKA or DOAC

Grade 2C

2012 MALIGNANCY

Active Cancer + DVT of leg or PE

↓

Long term therapy (first 3 months)

↓

LMWH > VKA > Pradaxa or Xarelto

Grade 2B (PE), Grade 2C

DURATION OF ANTICOAGULATION PEARLS

Active cancer	• Extended > long-term therapy
Provoked VTE	• Long term therapy (surgical or transient, non-surgical risk factors)
Unprovoked VTE	• Long term or extended; assess bleed risk & individualize therapy

RECURRENT VTE

Recurrent VTE

↓

Currently on DOAC or therapeutic VKA

↓

Switch to LMWH for >= 1 month

Grade 2C

RECURRENT VTE

Recurrent VTE

↓

Currently on LMWH with compliance

↓

Increase LMWH dose by ¼ to 1/3

Grade 2C

PATIENT CASES

TEST YOUR KNOWLEDGE!
CHOOSE THE BEST TREATMENT OPTION

A. Lovenox 1 mg/kg BID for >3 months

B. Pradaxa 150 mg BID for >3 months

C. Lovenox 1 mg/kg BID x 3 months

D. Warfarin, goal INR 2-3, x 3 months

PATIENT CASE #1

73 yo M

Newly diagnosed PE

PMH: bladder cancer, GERD, finished 1st cycle of chemotherapy 1 month ago, anemia

CrCl 60 mL/min

A. Xarelto 15 mg BID x 15 days, then 20 mg daily x 3 months

B. Warfarin, goal INR 2-3, for >3 months

C. Eliquis 10 mg BID x 7 days, then 5 mg BID for >3 months

D. Lovenox 1 mg/kg BID x 3 months

PATIENT CASE #2

65 yo M

Newly diagnosed LLE DVT, unprovoked & painful, per patient report

PMH: obstructive sleep apnea, HTN, no HX of VTE, obesity

CrCl 85 mL/min

RANK the following in order of best option for VTE **prophylaxis**:

A. 4- No treatment is appropriate
B. 3- Aspirin daily
C. 1- Continue Eliquis
D. 2- Switch to warfarin, goal INR 2-3

PATIENT CASE #3

Same patient as case #2

Patient wants to stop Eliquis after 3 months and the hospitalist asks for your recommendation on VTE prophylaxis

A. Pradaxa 150 mg BID (after 5-10 days of parenteral therapy) x 3 months
B. Lovenox 1 mg/kg BID x 3 months
C. Lovenox 1 mg/kg BID for >3 months
D. Warfarin, goal INR 2-3, x 3 months

PATIENT CASE #4

80 yo F

Newly diagnosed RLE proximal DVT

PMH: TKR 1 month ago, osteoarthritis, HTN, hyperlipidemia, hypothyroidism

CrCl 49 mL/min

A. Continue warfarin, INR goal increase to 2.5-3.5, x 1 month
B. Change to Xarelto for >=1 month
C. Change to Xarelto for extended therapy
D. Change to Lovenox 1 mg/kg BID for >= 1 month

PATIENT CASE #5

55 yo F

Presents to ED today and CT shows new PE

PMH: PE 9 months ago treated with warfarin extended therapy, gout, HTN

CrCl 90 mL/min

INR 2.6

A. Increase Lovenox dose by ½
B. Increase Lovenox dose by 1/3
C. Change to Xarelto
D. Change to warfarin, goal INR 2-3

PATIENT CASE #6

55 yo F

Presents to ED today and CT shows new PE

PMH: PE 9 months ago treated with Lovenox extended therapy, gout, HTN

CrCl 90 mL/min

Lovenox compliance confirmed by patient interview & by calling patient's pharmacy

Q/A

REFERENCES

- Antithrombotic Therapy for VTE Disease. CHEST 2012; 141(2)(Suppl):e419S–e494S.
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- Lexicomp. Version 2.3.5. 2016.