

# Anticoagulants—A Diverse Panel Discussion

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# Disclosure

- This presentation has no commercial content, promotes no commercial vendor and is not supported financially by any commercial vendor. I receive no financial remuneration from any commercial vendor related to this presentation.
- Except—where the use of anticoagulants causes excessive bleeding requiring surgical intervention, then technically anticoagulants are leading to personal financial benefit.
- But at GREAT stress!

# Patient Presentation

- KB is a 92 yo gentleman who presented to the ED when he was in the tub and started bleeding from a blister on his right ankle and then had bloody stools while being evaluated in the ED.
- He was taking Xarelto (rivaroxaban) for atrial fibrillation.
- He was found to have a Hct of 29.4, which dropped to 21.7. PT=29.8. INR=2.9.
- During a 4 day admission, he was transfused 2 units of PRBC's, he had an echocardiogram, a sigmoidoscopy (hemorrhoid) and a feeding tube, before being discharged to a skilled nursing facility off of Xarelto.
- “Given his falls and problems with bleeding, he may be less than ideal candidate for anticoagulation therapy.”

# Demographics of Anticoagulation

- In the UK, 1% of population and 8% over 80 are on warfarin (2006).
  - Pirmohamed, M. Warfarin: Almost 60 years old and Still Causing Problems. *British Journal of Clinical Pharmacology*, 62:5 p509-511.
- About 10% of Americans aged 75 and older, and 6% of Americans between the ages of 65 and 74 used one or more blood thinners in 2007—Total=4.2 million
  - AHRQ 2007

# Anticoagulation for Atrial Fibrillation

- Approximately 2.7 million people have Atrial Fibrillation.
  - AHA
- Approximately 60% of all patients taking anticoagulants.

# Risk of Stroke in A. Fib. By Chad Score

CHAD <sub>2</sub> Score	Annual Risk of Stroke
0	1.9%
1	2.8%
2	4.0%
3	5.9%
4	8.5%
5	12.5%
6	18.2%

BF Gage et al. Validation of clinical classification schemes for predicting stroke. Results from the national registry of atrial fibrillation. JAMA 2001 285: 2864-2870.

# Mathematical Risk of an Event

- Cumulative risk =  $1 - 0.96^n$  where  $n$  is the number of years at risk.

# Stroke Risk at 4% per year

Number of years	Risk of having a stroke
1	4%
3	11.5%
5	18.5%
10	33.5%
15	45.8%
17	50.0%
20	55.8%

# Anticoagulation for DVT

- It is estimated that as many as 900,000 people could be affected (1 to 2 per 1,000) each year in the United States.
- Among people who have had a DVT, one-half will have long-term complications (post-thrombotic syndrome) such as swelling, pain, discoloration, and scaling in the affected limb. (probably not helped by treatment).
- One-third (about 33%) of people with DVT/PE will have a recurrence within 10 years. (4% per year).
- Approximately 5 to 8% of the U.S. population has an inherited thrombophilias.
  - CDC based on 2010 published data.

# Pulmonary Embolus Risk

- Estimates suggest that 60,000-100,000 Americans die of DVT/PE (also called venous thromboembolism).
  - 10 to 30% of people will die within one month of diagnosis.
  - These are the ones we are trying to prevent with anticoagulation and probably account for 10-20% of all anticoagulation. ( I am assuming that most are anticoagulated for 6 months.)
  - Sudden death is the first symptom in about one-quarter (25%) of people who have a PE.

# Life Expectancy of Americans

Age	Female years to live	Male years to live
65	21.4	19.1
70	17.7	15.8
75	13.6	11.9
80	10.2	8.8
85	7.3	6.2
90	5.0	4.2

Social Security Administration Life Expectancy Calculator

<http://www.socialsecurity.gov/OACT/population/longevity.html>

# Risk of Trauma in Elderly

- One out of three older adults (those aged 65 or older) falls each year.
- Among older adults, falls are the leading cause of both fatal and nonfatal injuries.
- In 2013, 2.5 million nonfatal falls among older adults were treated in emergency departments and more than 734,000 of these patients were hospitalized.
  - CDC--  
<http://www.cdc.gov/HomeandRecreationalSafety/Falls/adultfalls.html>

# Risk of Trauma while Anticoagulated

- Blunt head trauma is reported to have a clinically significant intracranial hemorrhage rate of 7% in the elderly patient receiving anticoagulant therapy.
- 50% mortality rate has been documented for blunt head injuries in elderly patients who have an INR of 3.
- The mortality rate in patients who receive anticoagulant therapy has been suggested to be 4- to 5-fold higher than control subjects.
  - Victorino GP, Chong TJ, Pal JD. Trauma in the Elderly Patient. *Arch Surg.* 2003;138(10):1093-1098.

# Risk of Spontaneous Cerebral Hemorrhage in the Anticoagulated Elderly Patient

- A 1995 review, suggested that anticoagulation to a "therapeutic" INR of 2.5 to 4.5 increases annual risk of intracranial hemorrhage by seven- to 10- fold, to an absolute rate of nearly 1% for high-risk patient groups.
  - Hart RG, Boop BS, Anderson DC: Oral anticoagulants and intracranial hemorrhage. Facts and hypotheses. *Stroke* 26:1471-1477, 1995
- Evaluation of individual large series shows great variation in the incidence of anticoagulation-treated patients in whom ICH is a complication, with annual incidences ranging from 0.1% in a 1974 study of 3862 patients to 2.2% in a 1993 study of 186 patients.
  - Coon WW, Willis PW III: Hemorrhagic complications of anticoagulant therapy. *Arch Intern Med* 133:386-392, 1974
  - Turpie AG, Gent M, Laupacis A, et al: A comparison of aspirin with placebo in patients treated with warfarin after heart-valve replacement. *N Engl J Med* 329:524-529, 1993

# Risk of GI Bleed

- Baseline: Approximately 1% of elderly patients (over 80) will be hospitalized with a GI bleed annually.
  - Kaplan RC et al. (2001) Risk factors for hospitalized gastrointestinal bleeding among older persons. *J Am Geriatr Soc* 49: 126–133
- Anticoagulated elderly:
  - Annual UGI Bleed Risk—2%
  - Annual LGI Bleed Risk—7%
  - Abraham, et al. *Circulation*. 2013; 128: 1869-1877  
Published online before print September 11, 2013,

# Overall risk of Hemorrhage

- Major bleeding: 7.2 per 100 patient-years (7.2%)
- Fatal bleeding: 1.3 per 100 patient-years (1.3%)
  - Linkins LA, Choi PT, Douketis JD. Clinical impact of bleeding in patients taking oral anticoagulant therapy for venous thromboembolism: a meta-analysis. *Ann Intern Med* 2003;139(11): 893–900.

# NOAC's any Different?

- Irreversibility!!
- Probably higher GI bleeding risk.

# Things People Fear

# Summary

- Risk of anticoagulation:
  - 1/3 of all elderly fall each year.
  - 3/4 million trauma hospitalizations.
  - 50% mortality for blunt head trauma with INR of 3.0.
  - 4-5 fold increase in trauma mortality with anticoagulation.
  - 1-2% annual risk of intracranial hemorrhage.
  - 2-7% annual risk of GI bleeding.
  - Yearly risk of major bleeding 7.2%
  - Yearly risk of fatal bleeding 1.3%.

# Questions for our Panelists

- How do you discuss the decision to go on anticoagulation with your elderly patients for “soft” indications?
- Is there an age where you never recommend anticoagulation?
- Do you have regular discussions about cessation of anticoagulation?

# Questions for our Panelists

- Have the NOAC's changed your approach for these indications?
- How in depth do you discuss the complications of anti-coagulation therapy?
- On a scale from 1-5, how much do you agree with the statement "Anti-coagulation therapy is overused in the elderly (>75 yrs)."