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The Hospitalists Role: Stroke Prevention and Improving Outcomes in Patients with Atrial Fibrillation

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The Hospitalists Role:
Stroke Prevention and Improving Outcomes
in Patients with Atrial Fibrillation

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Program Overview & Target Audience

This program will provide a review the prevalence of AF and the consequences of inadequate care, including increased morbidity and mortality due to VTE, stroke and AF. It will also discuss risk stratification and identification of patients with AF at risk for stroke, compare and contrast strategies for the prevention of stroke in patients with AF, and review the current guidelines for the treatment of AF.

This activity is intended for hospitalists, general internists, subspecialists, and practitioners caring for hospitalized patients, whether in a community hospital or academic medical center.

Agenda

- Prevalence and the consequences of inadequate care, including increased morbidity and mortality due to VTE, stroke and AF.
- Risk stratification and identification of patients with AF at risk for stroke.
- Strategies for the prevention of stroke in patients with AF.
- Current guidelines for the treatment of AF

Physician Continuing Medical Education

Physician Continuing Education

Accreditation Statement

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UMASS Office of CME designates this live activity for a maximum of 1.0 AMA PRA Category 1 Credit(s)[™]. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Learning Objectives

- Review the prevalence of AF and the consequences of inadequate care, including increased morbidity and mortality due to VTE, stroke and AF.
- Discuss risk stratification and identification of patients with AF at risk for stroke.
- Compare and contrast strategies for the prevention of stroke in patients with AF.
- Review the current guidelines for the treatment of AF

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Participants have an implied responsibility to use the newly acquired information to enhance patient outcomes and their own professional development. The information presented in this activity is not meant to serve as a guideline for patient management. Any procedures, medications, or other courses of diagnosis or treatment discussed or suggested in this activity should not be used by clinicians without evaluation of their patient's conditions and possible contraindications on dangers in use, review of any applicable manufacturer's product information, and comparison with recommendations of other authorities.

Fee Information

- There is no fee for this educational activity.
- A statement of credit will be issued only upon receipt of a completed activity evaluation form and will be emailed to you within 3 weeks.

What are Your Options for Stroke Prevention?

1. ASA 81 mg po daily and Clopidogrel 75 mg po daily
2. Warfarin with a target INR of 2-3
3. ASA 81 mg po qd
4. Dabigatran 150 mg po bid

Key AF Stroke Risk Factors: CHADS₂ Risk Stratification Scheme

Risk Factor	Points
Congestive heart failure	1
(recent) Hypertension	1
Age ≥ 75	1

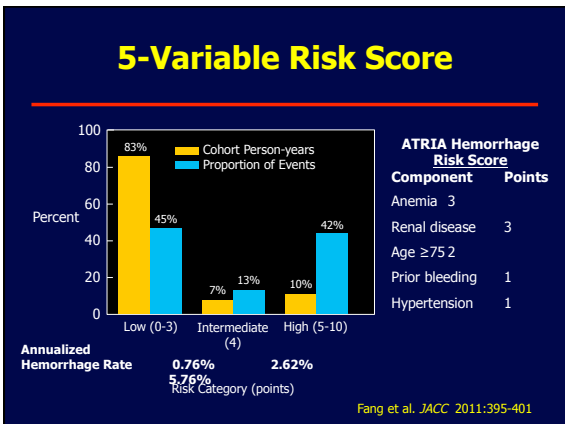
CHADS ₂ Score	Stroke Rate (%)
0	1.9
1	2.8
2	4.0
3	5.9
4	8.5
5	12.5
6	18.2

A Alpert et al. JAMA. 2001;285:2864-2870. TIA=transient ischemic attack. NRAF=National Registry of Atrial Fibrillation.

CHADS₂ -> CHA₂DS₂VASc

CHADS ₂ Risk	Score	CHA ₂ DS ₂ -VASc Risk	Score
CHF	1	CHF or LVEF \leq 40%	1
Hypertension	1	Hypertension	1
Age > 75	1	Age \geq 75	2
Diabetes	1	Diabetes	1
Stroke or TIA	2	Stroke/TIA/Thromboembolism	2
		Vascular Disease	1
		Age 65 - 74	1
		Female	1

From ESC AF Guidelines http://www.escardio.org/guidelines-surveys/esc-guidelines/Guidelines_Documents/guidelines-afib-FT.pdf



- ### What are Your Options for Stroke Prevention?
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- ### ACCF/AHA/HRS Focused Update on Atrial Fibrillation Management
- Dabigatran should be reserved for those who can adhere to twice-daily dosing
 - Afford the drug
 - Are not part of an anticoagulation management program
 - Should not be used in patients with creatinine clearance less than 15 mL/min or severe hepatic dysfunction.
- ACCF/AHA/HRS Focused Update

2011 ACCF/AHA/HRS Focused Update on the Management of Patients With Atrial Fibrillation (Update on Dabigatran)
 A Report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines
- Wann et al. Circulation 2011;123 Accessed online

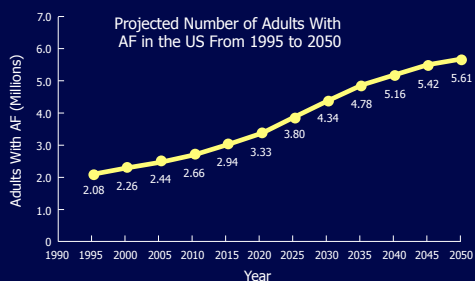
Epidemiology of Atrial Fibrillation

- Estimated to affect >2.6 million Americans
 - Prevalence increasing as population ages
- Presence of AF confers a 5-fold higher risk for ischemic stroke
- Most common arrhythmia requiring hospitalization
 - 461,000 hospital discharges/year
 - Associated with >90,000 deaths/year
 - Risk for recurrent severe stroke is increased 2.4-fold in patients not treated with anticoagulants

Lloyd-Jones D, et al. *Circulation*. 2010;121:e46-e215.

AF=atrial fibrillation.

Future of Atrial Fibrillation: ATRIA Study



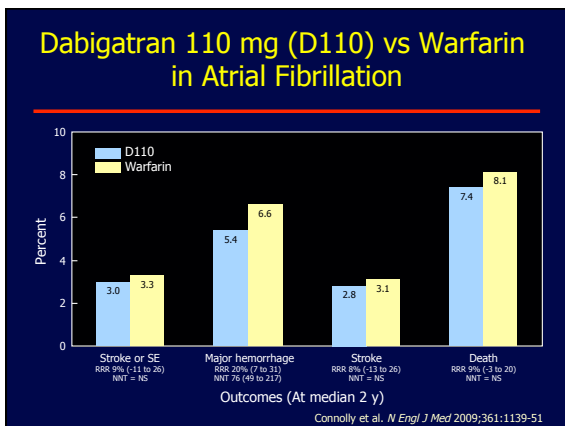
Go AS, et al. *JAMA*. 2001;285:2370-2375.

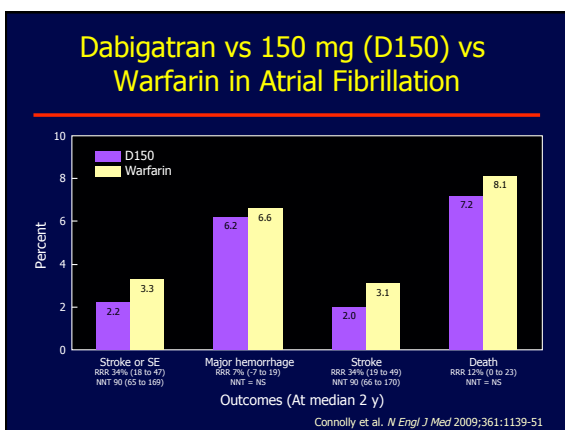
AF=atrial fibrillation.

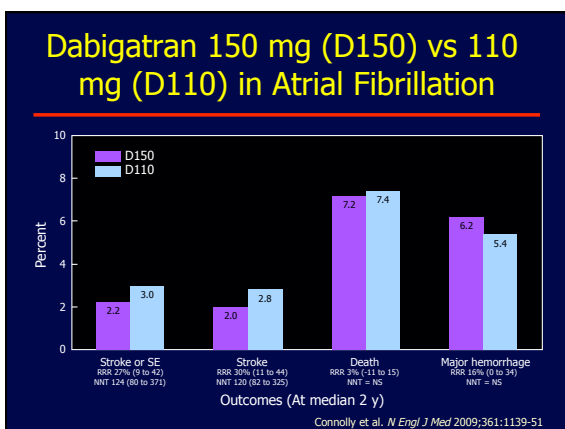
Unmet Needs in Clinical Practice Surrounding Atrial Fibrillation

- Warfarin
 - Numerous food and drug interactions, narrow therapeutic index, requires monitoring, has a slow onset of action and has an unpredictable dose response
- Guidelines
 - Warfarin is recommended for stroke prevention in most patients with AF but it is underused
 - Many physicians do not adhere to the guidelines
 - Stroke risk stratification has had little effect on warfarin use
- Patient Management
 - Elderly patients benefit most from an anticoagulant, but are less likely to receive it, largely because of their perceived risk of falling or bleeding
 - Only ~50% of patients treated with warfarin are in the therapeutic range

Ansell et al. *Chest*. 2001;119:225-385. Waldo et al. *J Am Coll Cardiol*. 2005;46:172936.







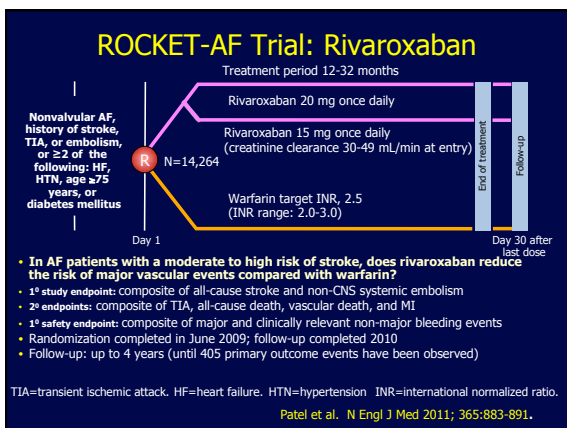
Higher-dose Dabigatran Reduced Stroke but not Major Hemorrhage Compared to Warfarin

- Conclusion

In patients with Afib, D150 twice daily reduced risk for stroke and systemic embolism more than warfarin and had similar rates of major hemorrhage

- Impact on Practice

First oral anticoagulant in > 50 years. Dabigatran has no food or drug interactions. Now endorsed by the AHA/ACCF/HRS Guidelines



Rocket-AF: Baseline Demographics

	Rivaroxaban (N=7081)	Warfarin (N=7090)
CHADS ₂ Score (mean)	3.48	3.48
2 (%)	13	13
3 (%)	43	44
4 (%)	29	28
5 (%)	13	12
6 (%)	2	2
Prior VKA Use (%)	62	63
Congestive Heart Failure (%)	63	62
Hypertension (%)	90	91
Diabetes Mellitus (%)	40	39
Prior Stroke/TIA/Embolism (%)	85	88
Prior Myocardial Infarction (%)	17	18

CHADS₂=a score that estimates the risk of stroke in patients with AF and includes Congestive heart failure, Hypertension, Age ≥75, Diabetes mellitus, and prior incidence of Stroke or Transient Ischemic Attack. AF=atrial fibrillation. VKA=vitamin K antagonists. TIA=transient ischemic attack.
Patel et al. N Engl J Med 2011; 365:883-891.

Rocket-AF: Summary

- **Efficacy:**
 - Rivaroxaban was noninferior to warfarin for prevention of stroke and non-CNS embolism
 - Rivaroxaban was superior to warfarin while patients were taking study drug
 - By intention-to-treat, rivaroxaban was non-inferior to warfarin but did not achieve superiority
- **Safety:**
 - Similar rates of bleeding and adverse events
 - Less ICH and fatal bleeding with rivaroxaban
- **Conclusion:**
 - Rivaroxaban is a proven alternative to warfarin for moderate- or high-risk patients with AF

Patel et al. N Engl J Med 2011; 365:883-891.

CNS=central nervous system.
ICH=intracranial hemorrhage.

CHADS₂ Scores: RE-LY and ROCKET-AF

CHADS ₂ Score	RE-LY ¹			ROCKET-AF ²	
	Dabigatran 110mg	Dabigatran 150mg	Warfarin	Rivaroxaban	Warfarin
Mean	2.1	2.2	2.1	3.48	3.46
0-1	32.6%	32.2%	21.0%	0	0
2	34.7%	35.2%	37.0%	13%	13%
3-6	32.7%	32.6%	32.1%	87%	87%

1. Connolly SJ, et al. N Engl J Med. 2009;361:1139-1151.
2. Patel et al. N Engl J Med 2011; 365:883-891.

Mr. E

80 yo with h/o Atrial Fibrillation, chronic Renal Insufficiency, HTN, T2DM, CAD presents with 1-day history of melena. His SBP=80, HR=120, Pale, A&O x1

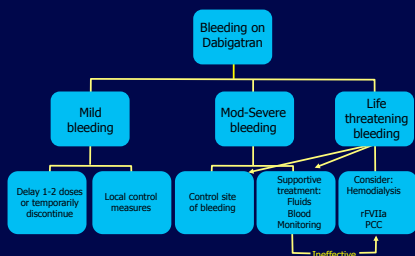
Meds: Dabigatran 150 mg po bid, Atenolol 50mg qd, Lantus 20U qhs, humalog, ASA 81mg qd, Lisinopril 20mg qd

Labs reveal: Hgb=6 , Cr=2.5

How Do You Want to Manage This Patient?

- What else do you want to know?

Bleeding on Dabigatran



With permission from the University of Utah, Thrombosis Service

Potential Drug Interactions With the New Oral Anticoagulants

Dabigatran (P-gp inducers and inhibitors)	Rivaroxaban (With Combined P-gp and CYP3A4 inhibitors/inducers) Drug Interactions
Clarithromycin	Ketoconazole
Quinidine	Itraconazole
Amiodarone	Voriconazole
Verapamil	Ritonavir
Rifampicin	Posaconazole
Pantoprazole	Clarithromycin
Aspirin	Rifampicin
Naproxen	Phenytoin
Diclofenac	Carbamazepine
Clopidogrel	Aspirin
Warfarin	Naproxen
Heparin	Diclofenac
	Clopidogrel
	Warfarin
	Heparin

Walenga JM, Adiguzel C. *Int J Clin Pract.* 2010;64:956-967.

Conclusions

- The new oral anticoagulants clearly offer an alternative and advantage over parenteral drugs and warfarin
- Good evidence to support their use in Atrial Fibrillation
- Need to be cautious in the Elderly and those with renal impairment
 - Adjust dose or avoid drug altogether when contraindicated

Questions





7th Annual Perioperative Medicine Summit
In Collaboration with Cleveland Clinic
and The Society of Perioperative
Assessment and Quality Improvement (SPAQI)

March 15-17, 2012
Miami Beach, Florida

Questions
