Atrial Fibrillation/Flutter Order set

Notes:

UNSTABLE PATIENT Atrial fibrillation/flutter rarely causes cardiac instability (atrial fibrillation with wolf Parkinson white may be an exception). Consider other diagnoses such as sepsis, heart failure, myocardial ischemia, acute renal failure, etc as cause for instability and treat accordingly.

If atrial fibrillation < 48 hours **WITHOUT** history of rheumatic heart disease, valvular disease (including mechanical valve where INR < 2.5), or recent stroke or TIA then use electrical cardioversion.
-Anticoagulation: Unless there is an obvious reversible cause for atrial fibrillation/flutter anticoagulation therapy should be initiated based on stroke and bleeding risk using tools such as CHADS2, CHADS VASc, and HAS-BLED scores. For patients discharged from the emergency department bridging anticoagulation is NOT necessary if warfarin is the oral anticoagulant selected.

If duration of AF > 48 hours or duration is unknown, history of rheumatic heart disease, valvular disease (including mechanical valve where INR < 2.5), recent stroke or TIA then strongly consider urgent CCU consultation before attempting cardioversion.

STABLE PATIENT:

If atrial fibrillation < 48 hours **WITHOUT** history of rheumatic heart disease, valvular disease (including mechanical valve where INR < 2.5), or recent stroke or TIA then consider pharmacologic or electrical cardioversion.
-Anticoagulation: Unless there is an obvious reversible cause for atrial fibrillation/flutter anticoagulation therapy should be initiated based on stroke and bleeding risk using tools such as CHADS2, CHADS VASc, and HAS-BLED scores. For patients discharged from the emergency department bridging anticoagulation is NOT necessary if warfarin is the oral anticoagulant selected.

If duration of AF > 48 hours OR duration is unknown OR history of rheumatic heart disease, valvular disease (including mechanical valve where INR < 2.5), recent stroke or TIA then use rate control. Do NOT use immediate cardioversion. May consider delayed cardioversion after 3 weeks of therapeutic anticoagulation OR transesophageal echo guided cardioversion. Therapeutic anticolagulation is required for a minimum of 4 weeks after cardioversion.
-Anticoagulation therapy should be initiated based on stroke and bleeding risk using tools such as CHADS2, CHADS VASc, and HAS-BLED scores. Bridging anticoagulation is NOT necessary if warfarin is the oral anticoagulant selected UNLESS transesophageal echo guided cardioversion is planned OR with history of rheumatic heart disease, valvular disease (including mechanical valve where INR < 2.5), or recent stroke or TIA.

Thromboembolic Prevention Notes:

CHADS2 score: Calculate score. If CHADS2 score = 0 OR 1 then calculate using CHADS-VASc (see below) to determine anticoagulation therapy. Use this information in combination with HASBLED (see below) score with relatively greater weight provided to reduction of stroke risks over risks of major hemorrhage.

C	Congestive heart failure	1
H	Hypertension	1
A	Age >= 75	1
D	Diabetes	1
S2	prior Stroke, TIA, or thromboembolism	2

Adjusted stroke rate %/yr CHADS score

0	1.9
1	2.8
2	4.0
3	5.9
4	8.5
5	12.5
6	18.2

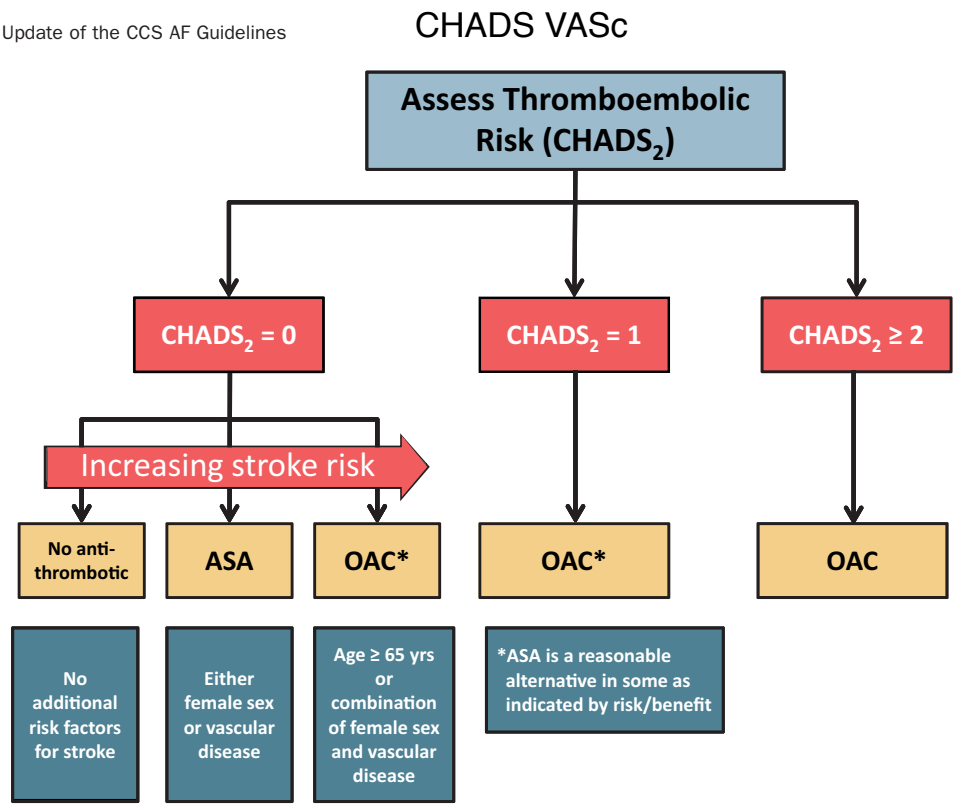

Figure 1. Summary of recommendations for antithrombotic agent use based on Congestive Heart Failure, Hypertension, Age > 75, Diabetes Mellitus, and Prior Stroke or Transient Ischemic Attack ($CHADS_2$) score. Additional risk factors of age > 65, vascular disease, and female sex are integrated to increase granularity at low $CHADS_2$ score ($CHADS_2 = 0$). ASA, acetylsalicylic acid (aspirin); OAC, oral anticoagulant.

Adjusted stroke rate %/yr CHADS VASc score

0	0
1	0.7
2	1.9
3	4.7
4	2.3

5	3.9
6	4.5
7	10.1
8	14.2
9	100

HAS-BLED

H	Hypertension (SBP > 160)	1
A	Abnormal renal (dialysis, renal transplant, or creatinine ≥200 mmol/L) or liver function [chronic hepatic disease (eg, cirrhosis) or biochemical evidence of significant hepatic derangement (eg, bilirubin 2X upper limit of normal, in association with AST/ALT/Alk phos 3X upper limit normal](1 point each)	1 or 2
S	Stroke history	1
B	Bleeding history or predisposition (anemia)	1
L	Labile INRs (in therapeutic range <60% of time)	1
E	Elderly (Age >65)	1
D	Drugs (ASA, NSAIDS, clopidogrel) or alcohol (>7 drinks/wk) (1 point each)	1 or 2

Score >2 = high risk of bleeding and caution should be used with oral anticoagulants

<u>Newer Oral Anticoagulant therapy notes:</u>

<u>Dabigatran</u>:
Dosing:
-150mg bid recommended dose
-110mg bid if CrCl 30-49ml/min, age > 80, or patients with higher bleeding risk
-Consider 110mg bid for patients receiving amiodarone (increases effect of dabigatran)
-Avoid in combination with P-Glycoprotein inhibitors (not recommended with dronedarone), verapamil
-Avoid if CrCl less than 30ml/min

Tips to consider:
-Requires acidic environment to be absorbed, avoid using with PPI's and space timing of dose from antacids when possible
-Increases INR, but not in a reliable fashion
-If converting from unfractionated heparin, start dabigatran at time of heparin discontinuation
-Cost approximately $135/month (as of April 2013) and special authority only available if patient fails a 2 month trial of warfarin or not possible due to inability to regularly monitor the patient via International Normalized Ratio (INR) testing (i.e., no access to INR testing services at a laboratory, clinic, pharmacy and at home). Make sure patient has coverage or can afford medication before prescribing.

<u>Rivaroxaban</u>
Dosing:
-20mg daily with food
-15mg daily with food if CrCl 30-49ml/min
-Avoid use if CrCl less than 30ml/min
-Avoid in combination with strong CYP 3A4 or P-Glycoprotein inducers or inhibitors

Tips to consider:
-Increases INR, but not in a reliable fashion
-If converting from unfractionated heparin, start rivaroxaban at time of heparin discontinuation
-Cost approximately $122/month (as of April 2013) and special authority only available if patient fails a 2 month trial of warfarin or not possible due to inability to regularly monitor the patient via International Normalized Ratio (INR) testing (i.e., no access to INR testing services at a laboratory, clinic, pharmacy and at home). Make sure patient has coverage or can afford medication before prescribing.

<u>Apixaban</u>
Dosing:
-5 mg PO BID
-Avoid coadministration with strong dual inhibitors of CYP3A4 and P-Glycoprotein
-Decrease dose to 2.5 mg PO BID in patients with at least 2 of the following characteristics: age ≥80 years, weight ≤60 kg, or Serum creatinine ≥133umol/L
-Renal impairment:

- Mild-to-moderate: No dosage adjustment required
- Serum creatinine ≥133umol/L: Decrease dose to 2.5 mg BID if patient has 1 additional characteristic of age ≥80 years or weight ≤60 kg
- CrCl, 15 mL/min or dialysis: No data are available; not recommended

Tips to consider:
-Increases INR, but not in a reliable fashion
-If converting from unfractionated heparin, start apixaban at time of heparin discontinuation
-Cost at least $135/month (as of April 2013) and special authority is not available. If patient has extended health coverage they will cover apixaban. Make sure patient has coverage or can afford medication before prescribing.

<u>Follow Up Notes:</u>

Chemically or Electrically cardioverted patients:

1. If first episode of atrial fibrillation/flutter then outpatient ECHO and follow up with GP within 2 weeks. Refer to atrial fibrillation clinic if patient does not have GP.
2. Follow up with GP or local clinic within 2 weeks of discharge if started on newer oral anticoagulants to ensure renal function is stable.
3. Follow up with GP, ER, or local clinic within 3 days of discharge if started on warfarin
4. Follow up with GP, ER, or local clinic within 3 days of discharge if further consideration or evaluation of the need for anticoagulation is necessary.

Rate-controlled patients:

1. If HR < 100 and no significant symptoms then GP or ER (or patients internist or cardiologist) follow up within 3 days to ensure medications/dosing is sufficiently controlling rate.
2. If first episode of atrial fibrillation/flutter then also refer to atrial fibrillation clinic
3. Follow up with GP or local clinic within 2 weeks of discharge if started on newer oral anticoagulants to ensure renal function is stable.
4. Follow up with GP, ER, or local clinic within 3 days of discharge if started on warfarin.
5. Follow up with GP, ER, or local clinic within 3 days of discharge if further consideration or evaluation of the need for anticoagulation is necessary.

6. If first episode of atrial fibrillation/flutter then order outpatient ECHO.
7. If first episode of atrial fibrillation/flutter outpatient holter should be ordered and requested to be completed within 2-4 weeks of discharge.