HeFSSA Practitioners Program 2013

08:00 – 08:30  Registration
08:30 – 09:15  Clinical Case Presentation 1
09:15 – 10:00  Clinical Case Presentation 2
10:00 – 10:30  Tea Break
10:30 – 11:15  Clinical Case Presentation 3
11:15 – 11:45  ESC Guidelines on Chronic Heart Failure
11:45 – 12:00  Questionnaire
12:00 – 14:00  Lunch
CASE 3

64 year old patient
40 pack-year smoking history
Presents with dyspnoea on exertion

How would you treat?
• How would you treat?
  • Depends on the diagnosis!

• Systemic chronic illness, anaemia, unfit, deconditioned

• By and large
  – heart
  – lungs

• How to differentiate dyspnoea on exertion due to heart or lung
Dyspnoea on exertion

- History
- Clinical examination
- ECG
- Spirometry
- CXR
- Echocardiogram
- Blood tests
- Other
Symptoms – lots of overlap

- Cough
  - productive
  - dry
- Orthopnoea, PND

- Not always bronchitis
  - purulent, blood, “frothy”
  - chronic bronchitis, ?HF
- More likely to be HF
Signs – lots of overlap

- Tachycardia
- JVP
- Oedema
- Wheezes

- Heart
- Heart
- Heart
- Lung – beware!! – all that wheezes is not asthma
• If normal in all respects
  – less than 10% likelihood that dyspnoea d/t HF

• Abnormalities
  – Previous myocardial infarction – Q waves, R loss
  – LV hypertrophy or strain
  – Broad QRS (QRS 0.06-0.11s)
• “Gold standard” for diagnosing COPD

• FEV1/FVC

   When patients are in CHF
   – Spirometry less reliable
      may overdiagnose COPD, or severity of COPD
hyperinflated
small heart
COPD

large heart
effusion ULBD
heart failure
Echocardiography

- Reliably identifies normal heart
- Systolic function
  - EF >50%
  - EF <50%
- RV dilatation, dysfunction, pulmonary pressure
- Other cardiac disease – eg valves

**BUT**
- Echo cannot necessarily differentiate dyspnoea due to heart or lung!!!!
• Brain Natriuretic Peptide (NT-ProBNP)
  – Sensitive to diagnose heart failure
  – normal NT-ProBNP ‘rules out’ Heart Failure
  – most useful test to differentiate dyspnoea d/t heart failure vs dyspnoea d/t COPD
• A normal NT-ProBNP confidently rules out Heart Failure

• Moderately elevated NT-ProBNP can occur in COPD OR in HF

• Significantly elevated >5000 pg/ml strongly suggests Heart Failure
• 64 year old
• 40 pack-year smoking history
• Dyspnoea on exertion
• BP 110 / 65
• Atrial fibrillation, 108 / minute
• Echo EF = 34%
• NT-ProBNP 6500 pg/ml
• Identify reversible reason for AF
  – Thyrotoxicosis
    • May precipitate AF
    • May be the cause of heart failure / cardiomyopathy
    • May be the cause of the clinical deterioration
    • NB prior to commencing medication – Amiodarone, Dig
  – Electrolytes – K, Mg
  – Heart failure
  – Alcohol, other drugs
  – MI, PE
• Should this patient receive anticoagulation?

• Should all AF patients receive anticoagulation?
• Should this patient receive anticoagulation?

• CHA₂DS₂-VASc = 1

• CHA₂DS₂ – VASc
  – C- CHF / EF<35%
  – Hypertension
  – Age – 65-74  1pt
    >75     2pts
  – Diabetes
  – Stroke / TIA – 2pts
  – Vascular disease – PAD, MI, Ao
  – Sex – Female 1  Male 0

If score = 0 – no anticoagulation necessary; if score ≥ 1 – need anticoagulation
A Spectrum Of Efficacy

Granger C.B and Armaganijan L.V. Circulation 2012; 125:159-64
NEITHER Aspirin

NOR Aspirin + Clopidogrel

recommended over Warfarin

unless patient ABSOLUTELY refuses Warfarin
Warfarin

• Problems and hassles with Warfarin
• Inconvenient
  – average 16 INR’s in 6 months
  – INR affected by food and medication
  – constant dosage adjustment
• Hence
  – Warfarin underutilized
  – only in therapeutic range 60% of time
• Dabigatran (Pradaxa), Rivaroxaban (Xeralto)
• Do not require INR or other monitoring, but......
  – we do not have monitoring test if we need it (at this stage)!
  – Drug interaction
  – eGFR – need to adjust dosage
  – No antidote / reversal eg if urgent surgery required
  – Short $T_{1/2}$ - effects wear off quickly; but if non-compliant or miss dose anticoagulant benefit also wears off quickly

• Pro’s and Con’s....
• Should this patient be cardioverted to sinus rhythm?

• Can this patient be allowed to remain in atrial fibrillation?

108 / min at rest
Atrial Fibrillation

• Can remain in atrial fibrillation.....
  – Provided that HR not too fast
    • 60 – 80 / min at rest
    • 90 – 115 / min on exertion
    • Not symptomatic from AF

• Cardioversion should be considered
  – if causing / contributing to worse dyspnoea
  – often very effective in improving symptoms
  – *must continue longterm anticoagulation
Atrial fibrillation – ‘rate control’

- Heart rate control in atrial fibrillation
  - Beta blockers (in COPD?)
  - Calcium channel blockers (in LVEF 34%?)
  - Digoxin
β-Blockers May Reduce Mortality and Risk of Exacerbations in Patients With Chronic Obstructive Pulmonary Disease

Frans H. Rutten, MD, PhD; Nicolaas P. A. Zuithoff, MSc; Eelko Hak, MSc, PhD; Diederick E. Grobbee, MD, PhD; Arno W. Hoes, MD, PhD

Rutten et al. Arch Intern Med 2010; 170:880-
Beta blockers in COPD

- An observational study not a randomized trial
- 35 GP practices in Netherlands, 7 year f/u
- 2230 patients diagnosed with COPD
- B blockers given for HT, CAD, HF, AF, etc

Rutten et al. Arch Intern Med 2010;170:880-887
• Beta blockers - NOT contraindicated in COPD

• Beta blockers - BENEFICIAL in patients with HF even if they have COPD

• Airways reversibility?
  • can use B1 selective eg Bisoprolol
Choice of antiarrhythmic drug according to underlying pathology

ACEI = angiotensin-converting enzyme inhibitor; ARB = angiotensin-receptor blocker; HHD = hypertensive heart disease; CHD = coronary heart disease; HF = heart failure; LVH = left ventricular hypertrophy, NYHA = New York Heart Association. Antiarrhythmic agents are listed in alphabetical order within each treatment box.
AMIODARONE

• Can prolong the QT interval
• Interact with medication that prolongs QT
  • Erythromycin
  • Antipsychotics – Cipramil etc
  • Diuretics and hypokalaemia
• Increase risk of arrhythmias
  • Torsade de pointes
• Thyroid function
  – hyper-, hypo-
  – check TSH, T4
    pre amiodarone; monitor at intervals

• Cytochrome p450 system
  – higher levels of warfarin, NOAC, digoxin
  – monitor INR more frequently after starting Amio
AMIODARONE

- Pulmonary fibrosis
  - monitor lung function if pre-existing lung disease
- Photosensitivity / sunburn
- Blue discolouration
Conclusion

- 64 year old male
- 40 pack year smoking history
- Dyspnoea on exertion
- Atrial fibrillation
- LV dysfunction EF 34%
- Diagnosis –
  - Dyspnoea due to heart failure - HF-REF
  - Elevated NT-ProBNP 6500 pg/ml
• Atrial fibrillation
  \[ \text{CHA}_2\text{DS}_2-\text{VASc score} \geq 1 \]
  – Must have permanent anticoagulation
  – Warfarin or NOAC
    • Aspirin \pm Clopidogrel not adequate

• Check
  – Thyroid disease
  – K, Mg
Conclusion

• Don’t have to cardiovert to sinus rhythm
  – Rate control
  – Beta blockers are not contraindicated in COPD
  – Should be used in COPD (Bisoprolol)

• Should cardiovert to sinus rhythm if
  – Heart rate not controlled
  – Symptomatic from AF
  – Electrical ± antiarrythmic (Amiodarone)