

# Pre-operative Assessment

Dr William Dooley - 5<sup>th</sup> February 2014



# Plan

- Assessment format
- Which tests to arrange for which patient
- Factors to consider
- Elective cases vs. Emergency cases



# Why is it important??

- Reduce morbidity and mortality
- Identify potential complications/risks
- Reduce cancellations
- Keep surgeon/anaesthetist happy!
- Commonly examined in Finals...



# How do you structure a pre-op assessment?

Please assess this 85yo life long smoker who has been booked for CABG.



# History



# History

- Current state- “Stable” - breathing been “bad” for 3yrs
- PMH- DM/HTN/COPD
- PSH- never had op before
- DH- Ramipril, bisoprolol, frusemide, spironolactone  
salbutamol, metformin, actrapid
- SH- Smokes 10/day for 30 years, ETOH 3 beers/day, exercise  
tolerance 4 metres



# History

- Current state
  - Baseline
- PMH
  - PARTICULARLY CV and RESPIRATORY
- PSH
  - Any anaesthetic complications
- DH
  - Including allergies
- SH
  - Smoking/dependence
  - **Exercise Tolerance**



# Examination





# Examination

Obese

Tar staining

CV : HS- I+II+ ES murmur loudest aortic region radiating to carotid

Pitting oedema to knees

RS : Bilateral crackles



# Examination

- A
  - Any intubation concerns
- B
  - Examine chest
- C
  - Examine
  - BP important
  - **SIGNS OF HEART FAILURE**
- D
  - BM
- E



# Investigations

- What investigations would you do for this patient?
- *Anything else you may consider doing?*

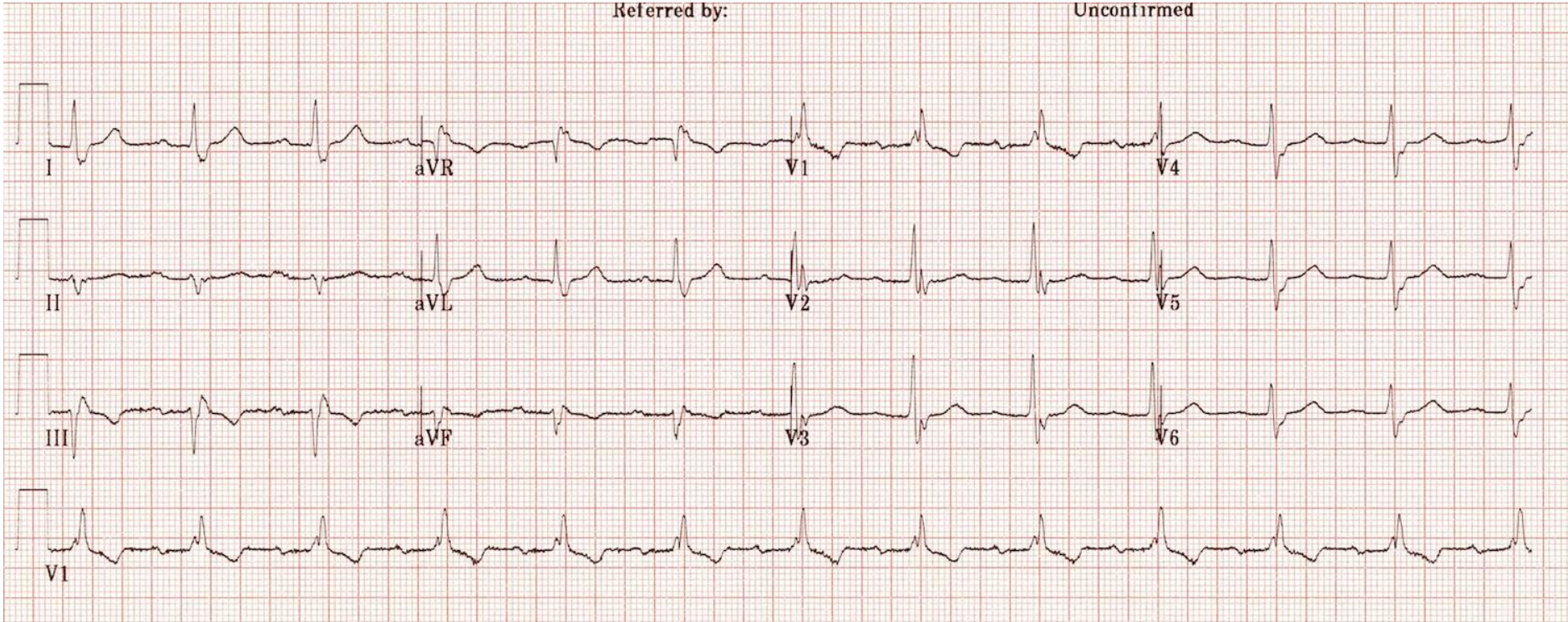
# Investigations

- **Bedside**
  - ECG
  - Random blood glucose
  - Urine Analysis e.g. pH, protein, glucose, ketones, blood
- **Bloods**
  - FBC
  - U+E (inc. Cr and urea)
  - Clotting– e.g. PT / APTT / INR
- **Imaging**
  - CXR
- **Special tests (for ASA 2/3 consider):**
  - ABG
  - Lung Function Tests
  - Echo



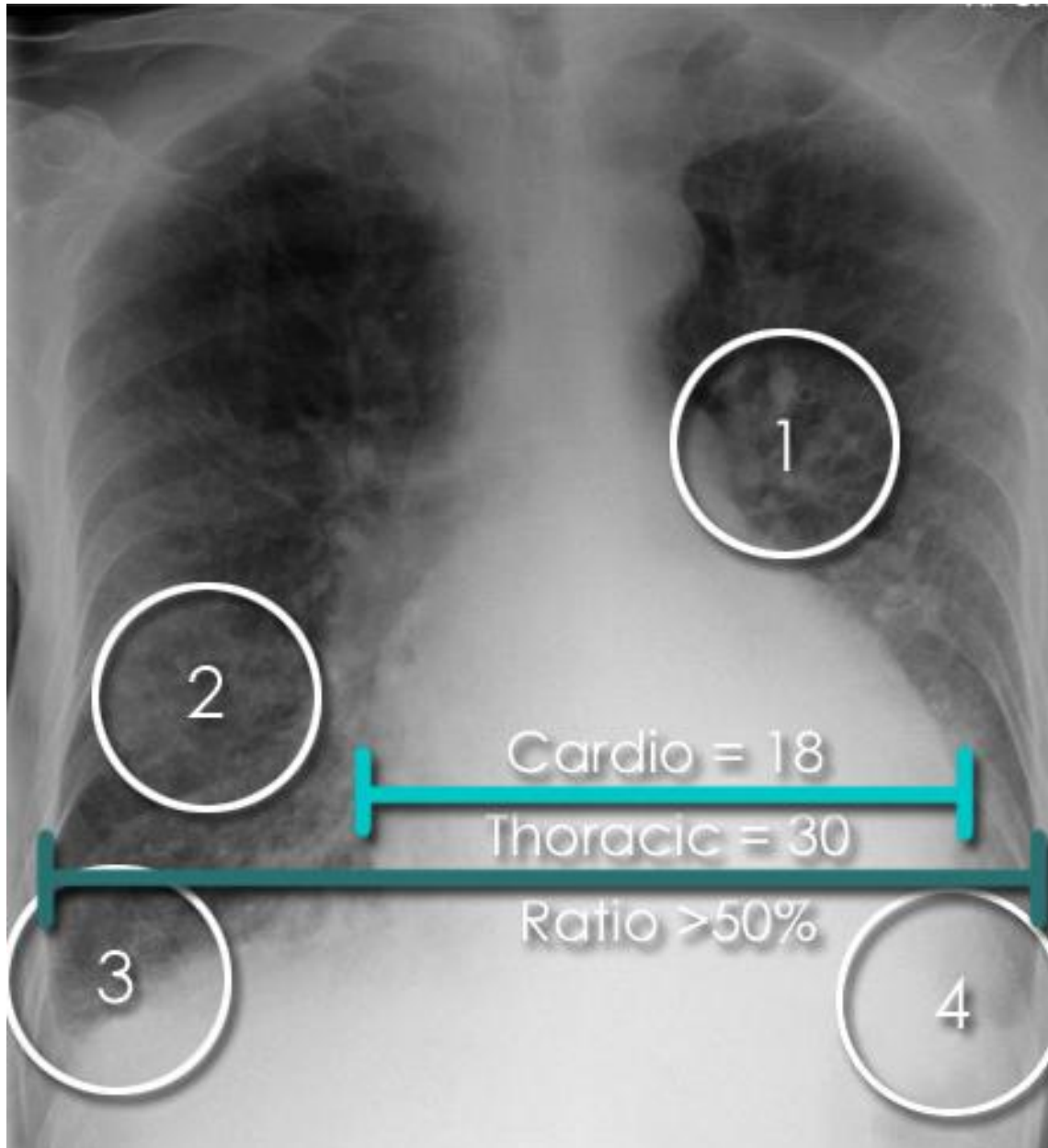
Referred by:

Unconfirmed










Cardiomegaly CTR = 18/30

1. Upper zone vessel enlargement (a sign of pulmonary venous hypertension)
2. Pulmonary oedema - bilateral increased lung markings (classically peri-hilar and shaped like bats wings - more widespread in this case)
3. Septal (Kerley B) lines
4. Pleural effusions

# NICE Guideline

?Nice



● Test not recommended  
● Consider this test (see page 2 of the NICE guideline)  
● Test recommended

ASA Grade 1: adults ≥ 16 years				
Test	Age (years)			
	16 to < 40	40 to < 60	60 to < 80	80
	N	N	N	N
Chest X-ray	No	No	No	No
ECG	No	Yes	Yes	Yes
Full blood count	No	No	No	No
Haemostasis	No	No	No	No
Renal function	No	No	Yes	Yes
Random glucose	No	No	No	No
Urine analysis*	Yes	Yes	Yes	Yes

## Preoperative tests

The use of routine preoperative tests for elective surgery

● Test not recommended

● Consider this test (see page 2 of the NICE guideline)

● Test recommended

### ASA Grades

**Grade 1** Normal healthy patient (i.e. without any clinically important comorbidity and without a clinically significant past/present medical history).

**Grade 2** Patient with mild systemic disease.

**Grade 3** A patient with severe systemic disease but the disease is not a constant threat to life.

#### Grade 1 surgery (minor)

Test	16-40	40-60	60-80	80+
Chest X-ray	No	No	No	No
ECG	No	Yes	Yes	Yes
Full blood count	No	No	No	No
Haemostasis	No	No	No	No
Renal function	No	No	Yes	Yes
Random glucose	No	No	No	No
Urine analysis*	Yes	Yes	Yes	Yes

#### Grade 2 surgery (intermediate)

Test	16-40	40-60	60-80	80+
Chest X-ray	No	No	No	No
ECG	No	Yes	Yes	Yes
Full blood count	No	No	No	No
Haemostasis	No	No	No	No
Renal function	No	No	Yes	Yes
Random glucose	No	No	No	No
Urine analysis*	Yes	Yes	Yes	Yes

#### Grade 3 surgery (major)

Test	16-40	40-60	60-80	80+
Chest X-ray	No	No	No	No
ECG	No	Yes	Yes	Yes
Full blood count	No	No	No	No
Haemostasis	No	No	No	No
Renal function	No	No	Yes	Yes
Random glucose	No	No	No	No
Urine analysis*	Yes	Yes	Yes	Yes

#### Grade 4 surgery (major+)

Test	16-40	40-60	60-80	80+
Chest X-ray	No	No	No	No
ECG	No	Yes	Yes	Yes
Full blood count	No	No	No	No
Haemostasis	No	No	No	No
Renal function	No	No	Yes	Yes
Random glucose	No	No	No	No
Urine analysis*	Yes	Yes	Yes	Yes

#### Neurosurgery

Test	16-40	40-60	60-80	80+
Chest X-ray	No	No	No	No
ECG	No	Yes	Yes	Yes
Full blood count	No	No	No	No
Haemostasis	No	No	No	No
Renal function	No	No	Yes	Yes
Random glucose	No	No	No	No
Urine analysis*	Yes	Yes	Yes	Yes

#### Cardiovascular surgery

Test	16-40	40-60	60-80	80+
Chest X-ray	No	No	No	No
ECG	No	Yes	Yes	Yes
Full blood count	No	No	No	No
Haemostasis	No	No	No	No
Renal function	No	No	Yes	Yes
Random glucose	No	No	No	No
Urine analysis*	Yes	Yes	Yes	Yes

#### Tests for the sickle cell gene in adults and children

... (text continues) ...

#### Pregnancy test

... (text continues) ...

#### Patient consent

... (text continues) ...

Clinical Guideline 3  
Preoperative tests  
2019, 2020



# Which tests?

- Depends on ...

## 1. The Patient

- Age
- Co-morbidities and Risk grading

## 2. The Operation

- Severity / complexity



# The operation...

## Grading system of severity

<b>Grade 1</b>	Minor	Excision of skin lesion, drainage of breast abscess
<b>Grade 2</b>	Intermediate	Hernia repair, varicose veins excision, tonsillectomy
<b>Grade 3</b>	Major	Total Abdominal Hysterectomy, prostate resection, thyroidectomy
<b>Grade 4</b>	Major +	Total joint replacement, lung operation

Neurosurgery

Cardiovascular surgery



# The patient...

American Society of Anesthesiologists

ASA Grade 1      Normal Healthy Patient

ASA Grade 2      A patient with **mild** systemic disease

ASA Grade 3      A patient with **severe** systemic disease

ASA Grade 4      A patient with **severe** systemic disease  
that is a constant **threat to life**



# ASA Grade 2/3 – What is mild/severe?

Current angina

Occasional use of GTN spray (2-3 times per month). Does not include patients with unstable angina who would be ASA 3

Regular use of GTN spray (2-3 times per week) or unstable angina

Angina

HTN

Hypertension

Well controlled using a single anti-hypertensive medication

Not well controlled, requiring multiple anti-hypertensive medications

Diabetes

Well controlled, no obvious diabetic complications

Not well controlled, diabetic complications (e.g. claudication, impaired renal function)

DM

COPD

COAD/COPD

Productive cough; wheeze well controlled by inhalers; occasional episodes of acute chest infection

Breathlessness on minimal exertion (for example, stair climbing, carrying shopping); distressingly wheezy much of the time; several episodes per year of acute chest infection

Asthma

Well controlled by medications/inhalers; not limiting life-style

Poorly controlled; limiting life-style; on high dose of inhaler/oral steroids; frequent hospital admission on account of asthma exacerbation

Asthma

Renal disease

Renal disease

Elevated creatinine (creatinine > 100 µmol/litre and < 200 µmol/litre); some dietary restrictions

Documented poor renal function (creatinine > 200 µmol/litre); regular dialysis programme, (peritoneal or haemodialysis)



# Which tests?

- FBC
  - child bearing women / all over 60
  - Baseline if large EBL
  - Significant CV/RS/Haem/Renal/liver/CT/DM disease
- U+E
  - Baseline if large EBL or fluid loss predicted
  - CV/RS/HTN/DM/CT disorders
  - Meds- diuretics/Digoxin/ACE-i/Steroids/B-blockers

# Which tests?

- ECG
  - Women over 50yo. Men over 40yo.
  - Known dysrhythmia/pacemaker
  - Meds- Dig/diuretics/potassium altering/anti-arrythmias
- CXR
  - CV/RS disease
  - Major surgery
- Sickle
  - ALL- African/Afro-carribbean/Eastern Med/Mid Eastern

# Management: Pre-op care

- Optimise the patient
- Consider
  - DM control
  - VTE
  - Fasting times
  - Booking theatre
  - Post operative care ?HDU
  - MRSA
- Specialist referral needed?
  - Anaesthetics/Resp/CV



# Summary 1:

## How do you structure pre-op assessment?

- History
  - PC/PMH/PSH/DH/SH
- Examination
  - ABCDE
- Investigation
  - Bedside/bloods/imaging/special tests
- Management
  - Optimisation





## Summary 2...

- Pre-operative care is a risk management process to reduce unexpected complications
- Level of investigation depends on patient and operation status
- Aim to optimise the patient pre-op within the MDT

