

## Common admissions

### ANGINA

Angina is pain or discomfort caused by myocardial ischemia. People often describe angina pain as a chest pain, tightness or a feeling of indigestion.

The pain often radiates to the throat, arms or back.

Angina can be stable or unstable.

**Stable-** Pain provoked by exercise which settles upon resting.

**Unstable-** this is pain that often increases in frequency with progressively less exertion. It can be recurrently occurring pain without exercise. It can be

unpredictable and is often prolonged pain.

Treatment for angina-

- GTN provides immediate relief or preventative before exertion.
- Beta Blockers, Calcium channel blockers, long acting nitrates and potassium channel activators can all prevent attacks.

Treatment of unstable angina-

- Immediate low molecular weight heparin to prevent thrombus formation, Beta Blockers. IV nitrates are often used for persistent pain.

### NSTEMI- NON ST ELEVATION MYOCARDIAL INFARCTION.

Acute myocardial infarction typically presents with chest pain. People often describe this pain as heaviness, tightness or indigestion type pain in the chest or upper abdomen. It is usually sustained pain.

Myocardial infarction (heart attack) occurs when a coronary artery becomes occluded by a blood clot. This causes damage to the heart muscle.

In a NSTEMI the blood clot partially occludes the artery therefore only part of the heart muscle supplied by that artery is damaged.

NSTEMI is diagnosed by a blood test called a Troponin test, History and ECG-may have ischemic changes.

Initial treatment for a NSTEMI is-

- O<sub>2</sub> If SPO<sub>2</sub> < 96%.
- IV access.

- Morphine.
- Buccal/SL nitrate unless BP <100.
- Clopidogrel 300mg stat.
- Aspirin 300mg stat.
- Fondaparinux 2.5mg sc unless contraindicated.

## **STEMI- ST ELEVATION MYOCARDIAL INFARCTION.**

In a STEMI there is often a history of sustained acute chest pain which is accompanied by acute ST segment elevation on a 12 lead ECG.

(Advanced life support, 2011)

The coronary artery is completely occluded by a blood clot and therefore virtually all the heart muscle supplied by that coronary artery begins to die.

Initial treatment is-

- O<sub>2</sub> if SpO<sub>2</sub> is <96%.
- Iv access.
- Morphine.
- Aspirin 300mg stat.
- Clopidogrel 300mg stat.

If ECG criteria for PCI are present and patient presents less than 12 hours after maximal pain.

- 1mm or more ST elevation in two contiguous limb leads
- 2mm or more ST elevation in two contiguous chest leads

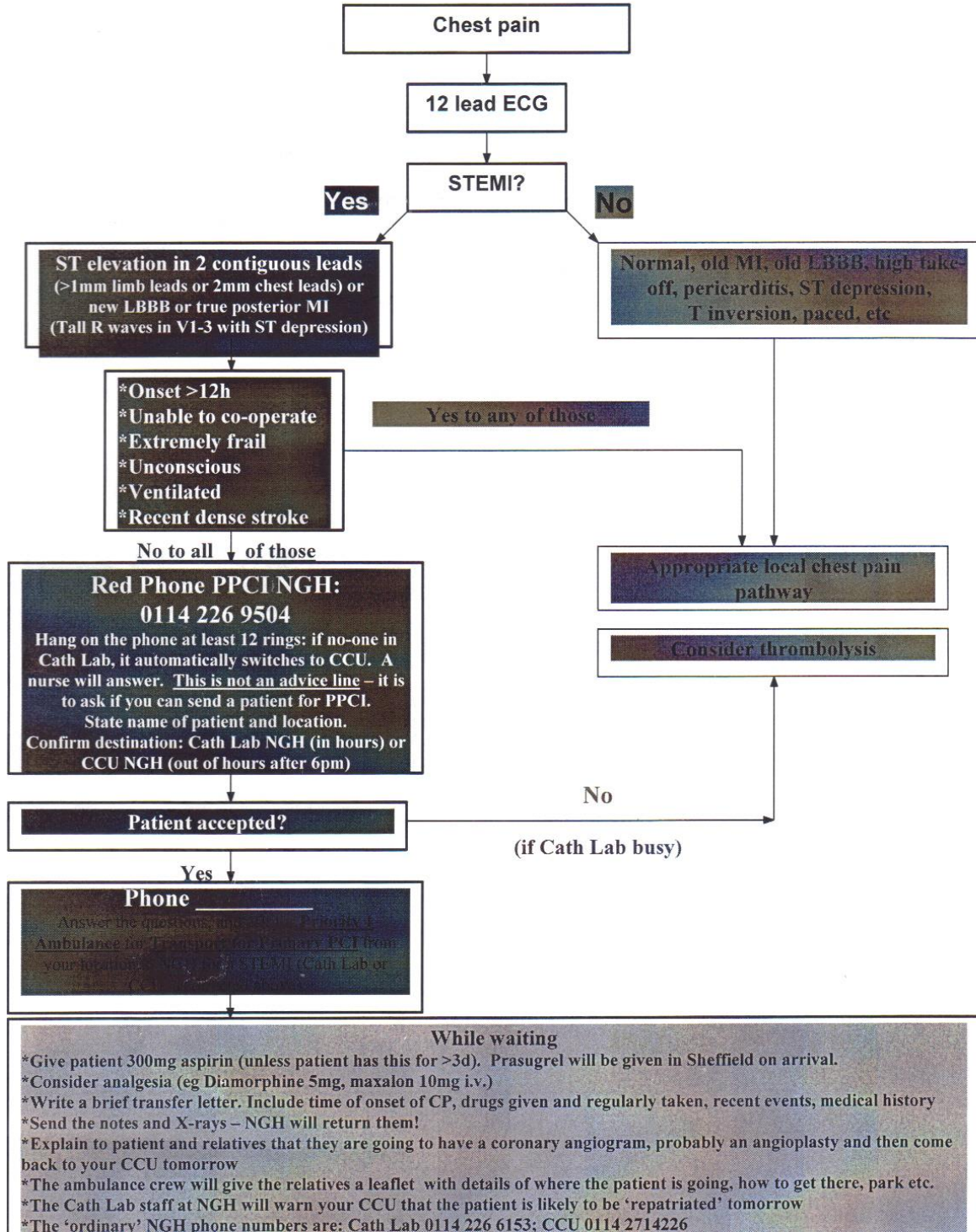
Contact NGH

999 Ambulance

If anticipated delays in transfer >2 hours consider thrombolysis.

**Chesterfield Royal Hospital  
NHS Foundation Trust**

**Primary PCI for STEMI (PPCI) Care Pathway 2010**



## Heart failure

Heart failure is caused by the heart failing to pump enough blood around the body at the right pressure.

It usually occurs due to the heart muscle becoming too weak or stiff to work properly.

In heart failure the heart requires support usually in the form of medication.

Heart failure can occur very suddenly or it can become progressively worse over time.

Some causes of Heart failure are:

- Heart attack.
- $\uparrow$ BP putting strain on the heart.
- Diseased or damaged heart valves.
- Cardiomyopathys.
- Congenital conditions.
- Heart rhythm disturbances.
- Alcohol.

Symptoms of heart failure can include shortness of breath, tiredness and swelling, usually in the feet, legs and abdomen.

Treatment for heart failure is usually in the form of medications.

Treatment can only aim to improve the symptoms of heart failure as there is no known cure.

- Diuretics- help the kidney excrete excess water.
- Ace inhibitors- Relax the arteries thus reducing how hard the heart has to work to pump blood or Angiotensin Receptor Blockers- Widen the blood vessels and lower BP.
- Beta Blockers- Help prevents the heart from beating too quick or too hard.
- Aldosterone Antagonist- Work like diuretics but reduce the loss of potassium and may help reduce muscle scaring.

CPAP- In acute Heart failure the pressure generated by CPAP helps to move fluid from the lungs and back into the vascular system.

### Troponin test

A biochemical marker of cardiac muscle damage.

A raised Troponin level indicates myocardial damage.

Indications- Episode of significant chest pain that may be cardiac in origin. The onset of symptoms should be more than six hours prior to test.

Results-

- <14- No myocardial damage.
- 14-99 Borderline result.
- >99 Myocardial damage.

### Echocardiogram (ECHO)

This uses sound waves that echo off of the heart structure giving an image of the heart.

It looks at the structure of the heart and shows how well it is functioning, including blood flow through the heart and the valves in the heart.

It is often used to assess the hearts function in people with heart failure or who have had a heart attack.

Sometimes a better look at the heart is required and a Transoesophageal echocardiogram (TOE) may be performed. This is where a camera is passed down the oesophagus which lies behind the heart.

### Exercise tolerance test (ETT)

This is a test to assess if a person has coronary heart disease.

The patient will have ECG's recorded while on a treadmill. During exercise the demand on the heart is greater and the heart requires a greater flow of blood.

This test shows if the heart is getting enough blood from the coronary arteries during exercise.

### Angiogram (ANGIO)

This is a test to determine the extent of narrowing of the coronary arteries. It will help decide what treatment will be required.

A flexible tube is inserted into either the groin or wrist and will be directed through the blood vessel to the heart using an X-ray. Contrast (a dye) will then be pumped through the flexible tube into the heart to detect narrowing or blockages. If this is the case the patient may be referred to Sheffield for stenting of the arteries.

### Nursing responsibility

#### **Start booklet**

- ✓ Refer to pre Angiogram checklist for instructions regarding preparation and complete prior to transfer for Angio.
- ✓ Consent form is required.
- ✓ Ensure warfarin is discontinued 72 hours prior to procedures.
- ✓ If the patient is taking metformin this must be omitted 24 hours prior to procedure.
- ✓ Stop diuretics, NSAID'S, Ace inhibitors on the day.
- ✓ Ensure INR is taken prior to procedure.
- ✓ Record general observations including pedal pulses prior to procedure and document.
- ✓ Ensure patient has had a FBC, U&E and clotting.
- ✓ Check patient is cannulated.
- ✓ Administer where prescribed pre-operative fluids.
- ✓ On return to the ward monitor general observations, pedal pulses and foot temperature as per sheath size guidelines.
- ✓ Refer to Angio bed rest guidelines regarding frequency of observations, time remaining flat and mobilising.
- ✓ Monitor Angio site. Encourage patient to apply pressure to site on laughing/coughing.
- ✓ Provide patient with an after your angiogram booklet.
- ✓ NBM 4\* before procedure. Sip clear fluids up to procedure.

### Permanent Pace Maker (PPM)

PPM are often required for heart block, bradycardic patients and Patients with tachybrady syndrome to aid rate control.

They work by taking over the hearts natural pace maker (SA node).

It sends an electrical impulse to make the heart beat when required.

It is placed just under the collar bone and is done under local anesthetic.

They are checked the following day to ensure they are working correctly and if the patient is well they can go home. Sutures to the site will have to be removed seven days post insertion.

### Nurses responsibility

#### **Start booklet**

- ✓ Check patient has received and understood the pre-operative information given.
- ✓ Encourage patient to verbalise any concerns.

- ✓ Ensure recent ECG and general observations have been recorded.
- ✓ Check FBC, U&E, clotting if on warfarin. Warfarin should have been stopped 72 hours prior to PPM insertion.
- ✓ Administer oral antibiotics.
- ✓ Check patient is cannulated.
- ✓ Check consent form is signed.
- ✓ Follow the pre-operative guidelines and complete the multi-disciplinary documentation.
- ✓ Following the procedure check BP according to protocol.
- ✓ If pulse is less than pacing rate check carotid pulse not peripheral.
- ✓ Monitor PPM site for bleeding, Haematoma or bruising on arrival.
  - Every 15 minutes for 1 hour.
  - Every hour for 2 hours
  - Every 4 hours thereafter.
- ✓ Administer post PPM antibiotics.
- ✓ Ensure patient has appropriate pain relief prescribed.
- ✓ If INR ^ will need vitamin K
- ✓ Ensure aspirin is stopped 96\* prior and warfarin 72\* prior.
- ✓ Provide paper underwear and gowns.
- ✓ NBM 2 HOURS BEFORE sip clear fluids up to procedure.

### Temporary pacing wire (TPW)

TPW is required to provide electrical stimulation to a heart that is compromised by disturbance in the conduction system.

It is used in an emergency when a patient becomes compromised due to disturbance in the conduction system and the option to wait for a PPM is not available as the patient's life is at risk.

### Nurses responsibility

- ✓ Ensure patient and next of kin are aware of the need for the procedure.
- ✓ Ensure notes and relevant X-rays are available.
- ✓ Inform radiographer of impending procedure.
- ✓ Position patient comfortably on pacing trolley.
- ✓ Observe cardiac monitor.
- ✓ Provide the patient with comfort and reassurance throughout the procedure.
- ✓ Ensure external pacer and arrest trolley are to hand.
- ✓ Ensure pacing box and wire are securely fixed.
- ✓ Ensure/check X-rays are performed to confirm position.
- ✓ Ensure pacing threshold is checked and set according to instructions from the Doctor carrying out the procedure.
- ✓ Check pacing site, threshold and underlying rhythm daily.

- ✓ Observe cardiac monitor for evidence of loss of capture and efficiency of pacing wire.
- ✓ Ensure patient is aware of the likelihood of needing a PPM.
- ✓ 4 Hourly observations must be checked and recorded.