Management of Malignant Pleural Effusions - Pleurodesis

(Response rates are better when pleurodesis is carried out by clinicians experienced in undertaking this procedure. As a result patients should ideally be referred to one of the respiratory teams.)

The following guidelines have been based on the British Thoracic Society Guidelines for the Management of Pleural Effusions (Thorax 2003, 58 (Supp 1)).

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Observation
- Observation is recommended if the patient is asymptomatic or there is no recurrence of symptoms after initial thoracentesis.
- Advice should be sought from respiratory specialists for symptomatic or recurrent malignant effusions.

Therapeutic pleural aspiration
- Repeat pleural aspiration is recommended for the palliation of breathlessness in patients with a very short life expectancy.
- Caution should be taken if removing more than 1.5L on a single occasion.
- The recurrence rate at 1 month after pleural aspiration alone is close to 100%.
- Intercostal tube drainage without pleurodesis is not recommended because of a high recurrence rate.

Analgesia and pre-medication
- Lignocaine (3mg/kg; maximum 250mg) should be administered intra-pleurally just prior to sclerosant administration.

Selecting a sclerosing agent
- Talc is the most effective sclerosant available for pleurodesis.
- A small number of patients (<1%) may develop acute respiratory failure following talc administration.
- Bleomycin is an alternative sclerosant with a modest efficacy rate but is expensive.
- Pleuritic chest pain and fever are the most common side effects of sclerosant administration.

Rotation following pleurodesis
- Although there is evidence that patient rotation is not required following intra-pleural administration of tetracyclines, it is still required when using talc slurry until further evidence is available.

Clamping of intercostal tube
- The intercostal tube should be clamped for 1 hour after sclerosant administration.
• In the absence of excessive fluid drainage (>250ml/day) the intercostal tube should be removed within 12-72 hours of sclerosant administration.

**Treatment Options**

In line with the above policy the following treatment have been agreed for use in the Trust:-

**First Line Treatment**

Sterile talc

Dose -2 to 5g

**Second Line Treatment**

Bleomycin

Dose - 60 units

**Sterile Talc**

• This may be administered in two ways - by using an atomiser during thoracoscopy, or more frequently by an intercostal tube in the form of a suspension termed “talc slurry”. The success rates for talc slurry range from 88% to 100% with a mean of 90%.

• Talc slurry is usually well tolerated and pleuritic chest pain and mild fever are the most common side-effects observed. A serious complication associated with the use of talc is adult respiratory distress syndrome (ARDS) or acute pneumonitis leading to acute respiratory failure.

• **Mode of administration**
  - Administer suitable analgesia
  - Inject 10ml of 2% lignocaine into the chest drain and leave for 10 minutes
  - Inject the talc slurry (prepared in the Pharmacy Aseptics Unit) into the chest drain
  - Flush the drain with 20ml of sterile sodium chloride 0.9%, clamp the drain for at least 1 hour. During this time encourage the patient to move between the following positions prone, supine, right, left side and sitting.
  - Return to suction.

**Bleomycin**

• This is the most widely used antineoplastic agent for the management of malignant pleural effusions. Its mechanism of action is predominantly as a chemical sclerosant similar to talc. Although 45% of the administered bleomycin is absorbed systemically, it has been shown to cause minimal or no myelosuppression.

• The success rates after a single administration range from 58% to 85%, with a mean of 61%.

• It has an acceptable side effect profile with fever, chest pain, and nausea the most common adverse effects.

• One disadvantage with the use of bleomycin is that it needs to be performed by trained personnel familiar with the administration of cytotoxic drugs.

• **Mode of Administration**
  - Administer suitable analgesia
  - Inject 10ml of 2% lignocaine into the chest drain and leave for 10 minutes
  - Inject bleomycin 60 units in 100ml sodium chloride 0.9% (prepared in the Pharmacy Aseptics Unit) the into the chest drain.
  - The patient may benefit from 4 changes of posture every 5 to 15 minutes.