Treatment for pleural mesothelioma

Contents

- Treatment
- Chemotherapy
- Radiotherapy
- Trimodality therapy
- Treatment to manage the symptoms of pleural mesothelioma
  - Breathlessness
  - Difficulty sleeping
  - Fatigue
  - Loss of appetite and weight loss
  - Managing pain with medicines, radiotherapy and chemotherapy
- Palliative care team
- Information reviewed by

Treatment

A range of active cancer treatments are recommended for some people with pleural mesothelioma. These can include chemotherapy, radiotherapy or surgery, or a combination of these treatments called trimodality therapy.

Your specialist will discuss suitable treatment options with you. These suggestions will be based on a number of factors including the location, stage and type of mesothelioma. Each person with pleural mesothelioma is different and your age, health and fitness, family circumstances and support will be considered to determine the best treatment options for you.

Although there is no cure for pleural mesothelioma the active cancer treatments discussed in this article help some people to achieve a longer period of control over the disease and improve prognosis. These treatments differ from palliative treatment which primarily aims to improve quality of life without extending survival.

While there is still no standard treatment path for people with pleural mesothelioma in recent years treatment options for pleural mesothelioma have improved. This includes improved surgical techniques, newer chemotherapy combinations and better radiotherapy techniques.

Chemotherapy

Chemotherapy treats cancer using anti-cancer (cytotoxic) drugs. It aims to destroy cancer cells while causing the least possible damage to healthy cells.

The most commonly used chemotherapy drugs to treat pleural mesothelioma include pemetrexed (Alimta®) with cisplatin or carboplatin. Research shows this combination can increase survival by a few months and improve quality of life, and is better than receiving a single chemotherapy drug. However chemotherapy doesn't work for some people.
Most doctors will recommend you start chemotherapy when the CT scans show signs of active disease and/or you have developed symptoms. Sometimes your doctor will recommend you start chemotherapy before symptoms develop.

Chemotherapy is generally administered into a vein through a drip (intravenously). Each session may last for several hours followed by a rest period of several weeks. This is known as a cycle. You will probably have up to six cycles. However the length and timing of the treatment and rest days of the cycle may vary.

During the chemotherapy you will have scans to check if the pleural mesothelioma is shrinking. Certain blood tests may also show whether the disease is responding to chemotherapy.

For some people quality of life improves for a while after chemotherapy. If the disease becomes active again you may be offered additional courses of the same type of chemotherapy or you may be offered a different chemotherapy drug.

**Side effects of chemotherapy**

People react to chemotherapy differently – some people will have few side effects while others have more. The side effects depend on the type and dose of drugs you’ve been prescribed. The most common side effects you may experience include:

- tiredness (fatigue)
- nausea and/or vomiting
- bowel problems
- sore or dry mouth, or small ulcers in the mouth
- taste changes and/or loss of appetite
- increased risk of infection and/or anaemia
- reduced kidney function
- ringing in the ears (tinnitus)
- skin changes
- numb or tingling hands or feet
- red and itchy eyes (conjunctivitis)
- hair loss or thinning.

Refer to [Understanding Chemotherapy](#) for more information.

**Radiotherapy**

Radiotherapy is the use of high-energy x-rays to kill or damage cancer cells. Radiotherapy may be used at different stages of pleural mesothelioma treatment and in different ways. It can relieve pain or other symptoms caused by tumours. Radiotherapy is also given after chemotherapy and surgery (adjuvant radiotherapy) to help kill remaining cancer cells.

Treatment is carefully planned to destroy as many cancer cells as possible while causing the least harm to your normal tissue. To plan your treatment you will have CT scans of the affected area.

The radiation oncologist may mark your skin with a special ink to make sure the radiation is directed at the same place on your body every time you receive radiotherapy. Although the ink is permanent the mark is the size of a freckle.

The initial appointment to see the radiation oncologist and set up the machine may take a few hours but the treatment itself takes only a few minutes. It is usually given Monday to Friday as an outpatient treatment. The length of the treatment course will vary depending on why you’re having radiotherapy; often two to four weeks for managing palliative symptoms or six weeks for radical radiotherapy.

Radiotherapy does not hurt and you are not radioactive afterwards.
Side effects of radiotherapy

Radiotherapy may cause some side effects during treatment or shortly afterwards but most side effects go away after the treatment stops. Side effects vary depending on the area of the body being treated but can include fatigue, reddened skin, painful swallowing and loss of hair in the treatment area.

Refer to Understanding Radiotherapy for more information.

Trimodality therapy

Trimodality therapy includes a combination of induction chemotherapy, radical surgery and radical radiotherapy. The aim of the three phases is to control the disease for as long as possible.

The benefits of trimodality therapy are not yet clear. Not all mesothelioma specialists recommend trimodality therapy and it’s available in only a few treatment centres. There has not yet been an evidence-based trial comparing the results of radical trimodality treatment to more limited treatment.

Suitability for trimodality therapy

Only a small number of people have trimodality therapy each year as it is only suitable for people:

- with a small amount of pleural mesothelioma at an early stage (T1–T3)
- with an epithelioid type of pleural mesothelioma
- whose scans show a good response to chemotherapy before surgery and no signs of pleural mesothelioma progression
- with no signs of spread into the lymph nodes or any other disease on CT and/or FDG-PET scans
- who are able to live independently with one lung
- who are physically fit for surgery
- who understand the risks and benefits as they apply to their individual situation.

Induction chemotherapy phase

Trimodality therapy starts with chemotherapy to shrink the tumour. After three cycles you will have a scan to check the size of the tumour. If it has been reduced you will have a rest for four to six weeks before having surgery. If there is little or no response you will continue treatment under supervision of the medical oncologist and you will not have radical surgery.

Radical surgery phase

This can be done in two ways:

**Extrapleural pneumonectomy (EPP)** – this is a common radical surgical procedure for pleural mesothelioma. It involves removing the tumour along with the pleura, the covering of the heart (pericardium), diaphragm and the whole lung on the affected side. Lymph nodes in the centre of the chest that drain the lung are also removed. Mesh is used to repair the pericardium and diaphragm.

You will need to stay in hospital for ten to fourteen days to be monitored for any complications and to have physiotherapy. If complications occur your hospital stay may be extended. Once at home recovery can take six to eight weeks and then you’ll be able to start radiotherapy.

**Pleurectomy with pulmonary decortication (P/D)** – this operation is a more extensive version of the talc pleurodesis [link to How diagnosed where this is discussed] procedure used to drain fluid and re-inflate trapped lungs. The aim is to remove all visible pleural mesothelioma from the pleural cavity. This may involve removing all the pleura depending on the circumstances and what the surgeon decides.
Both types of radical surgery are major operations and not everyone is fit enough to go through with them. At present there is no clear evidence for which treatment works best.

Ask your treatment team to explain each option and the likely outcome of the surgery.

**Radical radiotherapy phase**

The aim of the radical radiotherapy phase is to treat the tumour cells in and around the pleural cavity that may still be present after chemotherapy and surgery.

Radiotherapy is delivered using intensity-modulated radiation therapy (IMRT). This type of external beam radiotherapy can be accurately shaped around the chest cavity to allow higher doses to be delivered directly to the tumour cells while reducing the damage to other organs in the chest and abdomen.

If the tissue removed during surgery shows that pleural mesothelioma cells are still present in some areas of the chest these areas may receive higher x-ray doses than other areas.

Special scans are taken and computers are used to develop an individualised plan of treatment. Radiotherapy usually begins six to eight weeks after radical surgery. You will have treatment every day from Monday to Friday for six weeks.

Each week the radiation oncologist will examine you, review your blood test results and ask about any side effects. The side effects of radiotherapy usually become more intense as treatment progresses.

**Side effects for radiotherapy**

Common side effects include nausea, reflux, skin irritation, fatigue, soreness when swallowing, tiredness and exhaustion. Most of these symptoms can be managed with help from your health care team.

Sometimes, despite a person appearing suitable at first, the doctor may decide it is best for them not to continue with trimodality therapy.

**Treatment to manage the symptoms of pleural mesothelioma**

For many people pleural mesothelioma is diagnosed at an advanced stage. The main goal of treatment is to manage the symptoms and keep them under control for as long as possible.

Although there is no cure for pleural mesothelioma treatment may make you feel better and help you live longer. This is called palliative treatment.

The following information describes different ways to manage symptoms. You may have a combination of these treatments. If the symptoms return after a period of wellness you may be offered a different combination of treatments.

**Breathlessness**

Breathlessness is the most common symptom of pleural mesothelioma. In the early stages of pleural mesothelioma controlling the pleural fluid build-up around the lungs and having surgery will improve breathlessness. The level of improvement will depend on how healthy your lungs were before you developed pleural mesothelioma and the level of lung function after surgery.
During the process of diagnosing pleural mesothelioma, fluid build-up will have been drained off, and further accumulation of fluid may be prevented by pleurodesis. For more information on pleurodesis click here and see the Pleurodesis section under General tests.

Although living with breathlessness can be difficult and can cause distress, there are surgical and non-surgical ways to prevent or reduce its impact on your life.

**Improving breathlessness with surgery**

**Video-assisted thoracoscopic surgery (VATS) and talc pleurodesis**

If you were diagnosed with pleural mesothelioma after a CT-guided core biopsy and the symptoms of breathlessness remain, your surgeon may suggest you have VATS.

During VATS some of the lining of the chest wall and lung will be removed (pulmonary decortication) and some sterile talcum powder will be injected into the pleural cavity (talc pleurodesis). This causes inflammation that closes the pleural cavity and prevents fluid from building up again. In most cases this procedure improves your ability to breathe.

**Open surgery (thoracotomy, pleurectomy and pulmonary decortication)**

Following VATS and talc pleurodesis, the fluid build-up around the lungs may come back making you feel breathless again. The surgeon may suggest more extensive surgery called thoracotomy with pleurectomy and pulmonary decortications. In rare cases if you are experiencing pain in the chest, the surgeon may suggest open surgery to relieve the pain.

Under a general anaesthetic the surgeon will open the chest by making a cut from the back to the side of the chest and between the ribs. The pleural fluid is drained and the part of the pleura most affected with cancer is removed. After this procedure the lung is inflated by the anaesthetists and the chest is closed. Chest tubes are left in place for at least 48 hours to drain blood and any air that is leaking from the peeled lung surface. This type of surgery controls recurring pleural effusion in most cases.

Pain after open surgery can last longer than after VATS but the improvement in symptoms and lung function may make this worthwhile if VATS has been unsuccessful.

**Indwelling pleural drain**

An indwelling pleural drain may be offered to people who are too unwell for VATS or open surgery. It can also be used if the pleural fluid builds up again after pleurodesis.

The surgeon or interventional radiologist inserts a thin tube (catheter) through the chest wall into the pleural cavity. The pleural drain is connected to a bottle to drain off fluid and help your breathing. You may have to drain the fluid one to two times a week depending on how quickly it builds up again. You can manage the drain at home with the help of a community nurse. Your family or a friend can also be taught how to do this.

Sometimes with an indwelling pleural drain the pleural cavity may close up over time and stop producing fluid. If this occurs the drain will be removed.

**Improving breathlessness without surgery**

- Let your doctor know if you feel breathless. Other conditions such as anaemia, a lung infection or a heart related issue may make you feel short of breath and these may be able to be treated.
- Use a fan or medical gas to direct a cool stream of air across your face if you feel breathless when you are not exerting yourself.
- Talk to your doctor about medicines, such as a low dose of morphine, to manage feelings of distress.
- Listen to a relaxation CD or learn other ways to relax. This can help you control anxiety and breathe more easily.
• Lean forward on a table with an arm crossed over a pillow to allow your breathing muscles to relax.
• Use a recliner chair to help you sleep in a more upright position.
• Ask your health care team for assistance obtaining any equipment that may help.

If your breathlessness is caused by the lungs not supplying enough oxygen to your blood your doctors can arrange for you to receive an oxygen concentrator. This device delivers oxygen to your lungs and can be used at home. You can use a portable oxygen cylinder for outings and appointments.

**Difficulty sleeping**

Getting a good night’s sleep is important for maintaining energy levels and reducing fatigue. Difficulty sleeping may be due to pain, breathlessness, anxiety or depression.

Talk to your doctor about what might be helpful for you and whether medication may be an option. You may want to limit use of technology, such as television or computers, before bed and set up a calm sleeping environment.

**Fatigue**

Fatigue means feeling very tired and lacking energy to carry out day-to-day activities. Fatigue for people with cancer is different from tiredness. It does not usually go away with rest or sleep.

If fatigue continues for long periods of time you may lose interest in things you usually enjoy doing or feel unable to concentrate on one thing for very long. Fatigue can influence how you feel about yourself and others which may affect your close relationships.

If fatigue is a problem talk to your treatment team. Sometimes fatigue can be caused by a low red blood cell count or the side effects of drugs, and can be treated. While you cannot always get rid of fatigue you can find ways of managing it and boosting your energy levels.

**Managing fatigue**

• Set small, manageable goals for the day and rest before you get too tired.
• Ask for and accept offers of help with tasks such as shopping, cleaning and gardening.
• Plan ahead e.g. set your clothes out before you shower or bathe to avoid walking back and forth to your wardrobe.
• Leave plenty of time to get to appointments.
• Sit down whenever you can.
• Say no to things you really don’t feel like doing.
• Seek your doctor’s approval to exercise. Even a walk around the garden or block can boost your energy levels.
• Eat nutritious food to keep your energy levels up.

**Loss of appetite and weight loss**

For many people, losing weight and interest in eating are common, even before pleural mesothelioma is diagnosed. Weight loss may be caused by nausea, difficulty swallowing, breathlessness, changes in taste or smell, or feeling down.

Maintaining good nutrition will help you cope better with day-to-day living, treatment and side effects, and improve your quality of life. You may find it useful to talk to a dietitian who is experienced in treating people with cancer. They can provide helpful eating suggestions.

**Managing changes in appetite**

• Eat small meals and snacks regularly.
• Use a small plate or bowl so the plate looks fuller.
• Eat soft, moist food e.g. casseroles with gravy, scrambled eggs, bananas, mashed potatoes and other well cooked soft vegetables.
• Add ice-cream or fruit to a drink to increase calories and nutrients.
• Drink from a ‘half-full’ glass. It is more satisfying to empty a half-full glass than only half finish a full glass.
• If solid food doesn’t appeal to you ask your dietitian about commercially prepared nutritional supplements.
• Use lemon juice and herbs to add flavour to bland food.
• Try eating salads or cold foods if hot food smells make you feel nauseous.
• Avoid fatty foods or heavy, sugary foods if they make you feel sick.
• Eat more of your favourite foods – follow your impulse.

Managing pain with medicines, radiotherapy and chemotherapy

Pain medicines may be mild, like aspirin or paracetamol; moderate, like codeine; or strong opioid-based, like morphine. Pain-relieving drugs may be taken as tablets, other oral mixtures, patches, injections and intravenous infusions. Other drugs may also be prescribed, like non-steroidal anti-inflammatory drugs (NSAIDs) or drugs specifically for nerve pain.

To help find the right medicine for you your doctor may prescribe different drugs, different doses or a combination of drugs. Pain can usually be relieved with the right medicine.

Opioids, such as morphine, are the most common drugs used to control moderate to severe cancer pain. Morphine is available in quick-acting and long-acting forms. Some people feel concerned about taking morphine, thinking they will become addicted. However pain specialists believe a person does not become addicted to morphine if they are taking it as prescribed, to relieve pain. Morphine can be taken for a long time and in increasing doses if needed. It doesn’t have to be kept for ‘when the pain gets really bad’.

Radiotherapy is used when pleural mesothelioma spreads or presses on specific body parts like nerves, bones or major blood vessels, causing pain. Chemotherapy is used to reduce the size of the pleural mesothelioma tumours that are causing the pain.

• Keep track of your pain in a symptom diary and try to describe it as best you can. Write down what the pain feels like, how intense it is, where it is and if it goes away with a specific pain medicine or with any therapy like a heat pack.
• Allow a few days for your body to adjust to the dose of pain medication and for the drowsiness to improve. This will help you continue with your usual activities.
• Let your doctor know if you have vivid dreams after taking morphine. Adjusting the dose may help or you can ask to try other methods of pain relief.
• Use a laxative regularly to help relieve or prevent constipation caused by pain medicines.
• Take morphine regularly even if you’re not in pain. It’s better to stay on top of the pain rather than treat it when it returns.

For more information see Overcoming Cancer Pain.

Palliative care team

It is often assumed that palliative treatment is for people at the end of life however it is beneficial for people at any stage of a mesothelioma diagnosis. Contacting the palliative care team soon after diagnosis gives them the opportunity to get to know you, your family and your circumstances. Although other professionals will be responsible for your treatment in the earlier part of your diagnosis, the palliative care team can become involved when needed and manage your care when active medical management becomes less effective.

Ask the doctor in charge of your medical care about making an appointment with the palliative care team.