

## P-MitCEBOM chemotherapy for lymphoma

Your doctors have suggested that you are likely to benefit from a course of P-MitCEBOM chemotherapy treatment. They have weighed the expected benefits in terms of controlling the cancer and its symptoms, against the possibility of side effects. Your doctor will have discussed these with you.

The aim of this treatment is to shrink the cancer and potentially cure the disease. It is not possible to predict before you start treatment how your cancer will respond and if the response will be permanent. This factsheet explains what you can expect from the chemotherapy you will receive.

P-MitCEBOM chemotherapy is a combination of seven drugs. They are prednisolone (a steroid), mitoxantrone, cyclophosphamide, etoposide, bleomycin, vincristine and methotrexate.

### Treatment plan

Your P-MitCEBOM chemotherapy will be given as a cycle over 14 days as follows:

- prednisolone – given as tablets every day for first 4 weeks then every other day until treatment completed
- cyclophosphamide – given as an injection into a vein through a thin tube (cannula) on day one
- mitoxantrone – given as an intravenous infusion on day one
- etoposide – given as an intravenous infusion on day one
- bleomycin – given as an intravenous injection on day eight
- vincristine – given as an intravenous infusion over 5-10 minutes on day eight
- methotrexate – given as an intravenous injection on day eight

The treatment is given weekly, alternating between day one and day eight of each cycle. Usually six to eight cycles are given over a period of around 12 to 16 weeks as an outpatient. Your doctor will discuss with you the number of cycles you are likely to have.

A new cannula will be placed in your arm before each dose of chemotherapy and will remain there only while that chemotherapy is being given. Some people may have their treatment given through a central venous access device (see The Royal Marsden booklet *Central venous access devices* for further information).

The doctors in clinic will see you and have your blood tested before each cycle of chemotherapy. You will have regular scans while on treatment to assess response. Treatment may be delayed if your blood count is not at a suitable level.



This factsheet should be read together with The Royal Marsden booklet *Chemotherapy your questions answered*. The booklet offers general information about chemotherapy and details about many of these side effects and how to manage them.

## Side effects

All drugs can have some side effects and this includes P-MitCEBOM chemotherapy. These vary and for some people they may not occur.

### The more common side effects of P-MitCEBOM chemotherapy are:

- **Tiredness or lethargy** – during your chemotherapy, you may become very tired a few days following treatment. Pace yourself and rest as necessary.
- **Low blood count** – chemotherapy temporarily reduces the rate at which blood cells are produced in your bone marrow. This may cause:
  - Anaemia (low red cell count) – you may need blood transfusions.
  - Neutropenia (low white cell count) – this may increase your risk of developing an infection, which may be serious and life threatening.
  - Thrombocytopenia (low platelet count) – which may increase your tendency to bleeding – you may need platelet transfusions.

**If you feel unwell at any time or have a temperature (37.5°C/99.5°F or higher or 35.5 °C/95.9 °F or lower) you should contact the hospital immediately** as you may need to be admitted for intravenous antibiotics. For further information please refer to The Royal Marsden booklet *Chemotherapy your questions answered*.

- **Nausea and vomiting** – chemotherapy sometimes causes this. It can usually be managed with anti-sickness (anti-emetic) drugs.
- **Allergic reactions** – some patients experience an allergy to bleomycin, which occurs three to five hours after it is given. You may feel as if you have a flu-like condition (fever, headaches, pain). It does not last very long. Please inform a member of your team if this happens and your doctor may prescribe medicines to control this reaction.
- **Hair loss (alopecia)** – temporary hair loss usually happens. For further information please refer to the Macmillan booklet *Coping with hair loss*.
- **Sore mouth** – keep your mouth clean and healthy by drinking plenty of fluids and carrying out good oral hygiene. You will be given prescribed mouthwashes to help with this and medication called Folinic Acid for a period of time after the Methotrexate.
- **Numbness and tingling in the hands and feet (peripheral neuropathy)** – vincristine can cause problems with the nerves in the body. It can cause sensations like tingling, burning, numbness or pins and needles in the hands and/or the feet. Tell your doctor if you get any of these sensations, so they can be monitored. Most of the time, these symptoms will get better after your treatment ends, although it may take some time.
- **Effects on the bladder** – cyclophosphamide and methotrexate can cause irritation to the bladder. Drinking plenty of fluids will help prevent this. You will be given tablets called folinic acid to be taken from 24 hours after the methotrexate. The tablets are to be taken every six hours for six doses to help to protect your kidneys. If you notice blood in your urine, please tell



your doctor or nurse. Mitoxantrone is blue in colour and may cause your urine to become green for up to 24 hours following each treatment.

- **Skin and nail changes** – the skin around the site of the injection may become irritated. Your skin may also become darker, redder and more sensitive to light. You will need to take care in the sun as your skin may burn more easily during treatment and for several months afterwards. Your nails may become darker than usual and they may develop ridges. White lines may appear on them. These changes usually grow out over a few months after the treatment has finished.

**Side effects of steroids** – as prednisolone is a steroid, there are a number of side effects you may experience when taking this. Most of these will go away once treatment is finished. Other than those mentioned above, you may notice the following:

- **Fluid retention** – you may notice swelling of your ankles (ankle oedema). Usually, this is mild and goes away when treatment ends.
- **Mood changes, euphoria or difficulty in sleeping** - you may find it helpful to discuss with your doctor, which time of day is best to take your steroids. It is usually best to avoid taking them in the evening if possible.
- **Blurred vision** – tell your doctor if this happens.
- **Irritation of the lining of the stomach** – prednisolone may cause stomach pain, however you will be given drugs to prevent this from happening. It may also cause increased appetite and weight gain.
- **Steroid induced diabetes** – steroids may increase your blood sugar levels. Symptoms of a raised blood sugar are feeling tired, passing urine more frequently and feeling thirsty - this may be permanent. Please contact your team if you experience any of these symptoms. For further information, please see The Royal Marsden booklet *High dose steroids*.

**Less common side effects are:**

- **Lung damage** – cyclophosphamide and bleomycin can cause changes to the lungs. Tell your doctor if you experience any changes in your breathing or have a cough.
- **Constipation** – if you experience constipation, it can be treated with laxatives.
- **Change in eye colour** – mitoxantrone can cause the whites of the eyes to become tinted blue.
- **Changes in liver function** – there may be changes in the way your liver works.
- **Damage to the heart muscle** – there is evidence that very large cumulative doses of mitoxantrone (all the doses added together) could cause long-term heart damage. The total dose that we use is far below this and therefore the risk is extremely small. It is important, however, that you inform your doctors at once if you have had heart disease in the past.
- **Secondary cancer** – there is a small chance that cyclophosphamide may cause a secondary cancer. If this is of concern, please discuss with your doctor.

With certain side effects, a treatment break or dose reduction may be necessary. If you have any concerns regarding these side effects, you can contact the hospital.

**Fertility, pregnancy and breastfeeding**



- **Fertility** – chemotherapy can damage the testis or ovary. This may affect your ability to conceive (or father a child). Infertility can be temporary or permanent. Sometimes, in women, chemotherapy can lead to premature menopause. If relevant to you, you may wish to discuss the issue of fertility with your doctor before treatment is started.
- **Pregnancy** – during chemotherapy and for up to a year afterwards, if sperm or eggs are produced they may be abnormal. Treatment can also harm an unborn child. We recommend that you or your partner use a barrier method of contraception (such as condoms) during treatment and for one year afterwards. If you know you are pregnant before starting treatment or become pregnant during treatment, you must tell your doctor immediately.
- **Breastfeeding** – there is a risk of harm to a child who is being breastfed since the drug may be concentrated in the milk. It is very important that women do not breastfeed while receiving chemotherapy.

### Blood clots

Both the lymphoma and the chemotherapy can increase the risk of developing blood clots. Blood clots can occur in the veins causing problems like deep vein thrombosis (clot in the leg causing swelling of the leg) or pulmonary embolus (clot in the lung causing shortness of breath or chest pain). Blood clots can also occur in the arteries leading to a heart attack, stroke or impairment of the blood supply to a limb. Blood clots can be life threatening but can usually be treated by drugs that thin the blood. If you are concerned about any of the above, please inform your doctor immediately.

We have listed the most common side effects of this chemotherapy. You may experience some or several of these side effects listed above and they may be mild, moderate or severe. Some can occasionally be life-threatening.

As with all drugs, there may be other side effects not mentioned here that you may experience. Because of the risk of side effects, it is important that you:

- **Always** tell your doctor if you suffer from any of these side effects, or if you have experienced any new symptoms since your last visit. Your doctor can help you by giving you medication or advice, to reduce or stop these side effects from occurring in the future.
- **Always** tell your doctor about any other medicine you are taking or planning to take, including herbal and complementary therapies.
- **Always** consult your doctor before having any other procedure, for example, dental work or vaccinations.

### Contact details

Please contact your Clinical Nurse Specialist if you have any concerns or queries.

Sutton: 020 8661 3987  
 Chelsea: 020 7808 2247

Alternatively, please call:

**The Royal Marsden Macmillan Hotline:** 020 8915 6899  
 (available 24 hours a day, 7 days a week)

