

PCV chemotherapy

Your doctor has suggested that you may benefit from a course of PCV chemotherapy treatment. They will have weighed the potential benefits of treatment, in terms of controlling your cancer and its symptoms, against the possibilities of side effects. Your doctor will have discussed these with you.

This factsheet provides further information about the chemotherapy you have been offered and should be read together with the booklet *Chemotherapy your questions answered*. The booklet offers general information about chemotherapy and details on many of the side effects and how to manage them. If you have not yet received this booklet, please ask for it and let your medical team know if any of the information you have received is unclear.

Treatment plan

PCV chemotherapy is a combination of three anti-cancer drugs:

- Procarbazine
- CCNU (lomustine)
- Vincristine.

You will have this treatment as an outpatient. The doctors in clinic will see you and test your blood before each cycle of chemotherapy. Treatment may be delayed if your blood count is not at a suitable level. If the results of your blood tests are normal, the pharmacy will prepare your chemotherapy. This can take a couple of hours.

The nurse will put a thin, flexible tube (cannula) into a vein in your arm. You may find this uncomfortable or a little painful, but it should not take long. Once your chemotherapy is ready, we will give you an anti-sickness (anti-emetic) drug, either by injection through the cannula or as a tablet.

On the first day of your treatment, we will give you vincristine in an infusion (drip) and a dose of lomustine capsules. You will also begin a ten-day course of procarbazine capsules (to start the following day). When you have completed this course, you will have a rest period (with no treatment) for the next 32 days. This completes what is called a cycle of your treatment. One cycle of PCV lasts for six weeks.

The PCV chemotherapy is given every six weeks for as long as you are benefiting from it, usually for up to 12 months. We will usually carry out a brain scan after the second cycle to see how your



tumour is responding. You may choose to stop treatment and can do so by telling a member of the team looking after you.

Side effects of PCV chemotherapy

All drugs can have some side effects and this includes PCV chemotherapy. Most patients on this chemotherapy have few problems. The main side effects you may experience are listed below:

- 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 feel tired and breathless. You may need blood transfusions.
- Neutropenia (low white cell count) – PCV chemotherapy can reduce the production of white blood cells and this may increase your risk of developing an infection. It can begin three weeks after treatment. You will need to contact your doctor or the hospital straight away if:
 - Your temperature goes above 38°C (100.4°F)
 - You suddenly feel unwell (even with a normal temperature)
- Increased tendency to bleed – PCV chemotherapy can reduce the production of platelets which are necessary for clotting. Please inform the doctor if you have any unexplained bruising or bleeding. You may need a platelet transfusion.
- Nausea – this may begin a few hours after treatment and can last for up to three days. Your doctor can prescribe very effective anti-sickness (anti-emetic) drugs to prevent or greatly reduce this side effect. If the sickness is not controlled, or if it continues, let your doctor know.
- Tiredness and lethargy - many people feel extremely tired (fatigued) during chemotherapy. It is important that you allow yourself plenty of time to rest.
- Numbness or tingling in hands or feet – this is due to the effect of vincristine and procarbazine on nerves and is known as peripheral neuropathy. You may also notice that you have difficulty doing up buttons or similar fiddly tasks. Tell your hospital doctor if you notice any numbness or tingling in your hands or feet. This usually improves slowly a few months after the treatment has finished. Very rarely, other nerves may be affected (such as the neck nerves), which may cause pain in the jaw, or double vision.
- Flu-like symptoms – these can occur after you have had procarbazine. You may have headaches, aching joints or muscles, a temperature, lethargy (a feeling of weakness) and chills. If this happens it is important to drink lots of fluids and get plenty of rest.
- Hair loss – this does not usually occur with this chemotherapy, although a few people have reported some hair thinning.
- Other medicines – some medicines, including those you can buy in a shop or chemist, can be harmful to take when you are having chemotherapy. Let your doctor know about any medicines you are taking, including non-prescribed drugs such as complementary therapies and herbal drugs.
- Occasionally the procarbazine may interact with certain foods causing you to feel unwell.

The symptoms of a reaction include headache, rash, flushing, pounding heart, sweating and occasional nausea and sickness. The foods that may cause a reaction are:



Type of food	Food to avoid	Food allowed
Dairy	Aged and mature cheese. Cheese spread.	Fresh milk, buttermilk, yoghurt, cream, sour cream, cream cheese, cottage cheese, ricotta cheese.
Bread and cereal	Any containing mature cheese.	All except those in foods to avoid.
Meat, fish, poultry	Dried fermented sausage (salami, pepperoni, pastrami). Smoked or pickled fish, game meat. Leftover foods containing meat or fish. Protein dietary supplements.	Fresh, canned or frozen meat and fish eaten immediately after opening. Luncheon meats except those in foods to avoid. Eggs and pulses.
Fruit and vegetables	Over ripe, spoiled or fermented fruit and vegetables: Fava beans, broad bean pods, sauerkraut.	All except those in foods to avoid.
Soup	Soup containing meat extract or cheese.	All except those in foods to avoid.
Fats and oils	Gravy, sauces containing meat extracts or leftover meat.	All except those in foods to avoid.
Desserts and sweets	Any containing foods to avoid.	
Beverages	Alcohol. Drinks made with yeast/meat extract.	All except those in foods to avoid.
Miscellaneous	Meat/yeast extract (Oxo, Bovril, Marmite). Vegetable protein (Quorn, soya meat). Flavoured crisps, any food that has been kept for a long time and foods that have caused unpleasant symptoms.	Plain crisps, chocolate, nuts, unflavoured textured vegetable protein.

You may wish to avoid these foods altogether during the ten days that you are taking procarbazine capsules. Alternatively, try a small quantity of the food, wait an hour, and see how you feel. If you feel well, these foods are unlikely to harm you and you can eat them as usual.

In between outpatients visits, if you feel unwell, have any questions or would like to see us sooner than scheduled, please do not hesitate to telephone the medical team for advice.



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.

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.

Blood clots

Some cancers increase the risk of developing blood clots. Chemotherapy drugs can also cause an increase in the risk of patients developing blood clots whilst they are on treatment. The most common place for blood clots to form is in the calf. This is called a deep vein thrombosis (DVT) and causes the leg to swell. If a part of the clot breaks free, it may travel to the lungs, causing shortness of breath or chest pain. This is called a pulmonary embolus (PE). Blood clots can be life-threatening and treatment with blood-thinning drugs (anti-coagulants) is usually given to help 'dissolve' the clot and prevent further problems. Please inform your doctor immediately if you are worried you may have a blood clot.

Airline travel is also associated with an increased risk of blood clots. It is important that you inform your hospital team of any travel plans while you are on treatment.



Things to remember about procarbazine and lomustine capsules

- Store the capsules in a dry place away from direct sunlight.
- It is important to take your capsules at the right times. You must take them as directed by your doctor.
- Keep the capsules in a safe place out of the reach of children, as the capsules could harm them.
- If your doctor decides to stop the treatment, return any remaining capsules to the pharmacist. Do not flush them down the toilet or throw them away.
- If you are sick just after taking the capsules, let your doctor or chemotherapy nurse know as you may need to take another dose. Do not take another capsule without first informing your doctor or nurse.
- If you forget to take a capsule, do not take a double dose. Tell your doctor or nurse and keep to your regular dose schedule.

Some of the words used in this factsheet may be unfamiliar; please do not hesitate to ask your neuro-oncologist or one of the team for further explanation if there is anything you do not understand.

Neuro-oncology team contact details

Please see separate sheet.

