

## PCV

The possible benefits of treatment vary; for some people this chemotherapy may reduce the risk of the tumour coming back, for others it may control the tumour and its symptoms. Your doctor will explain to you whether you will receive chemotherapy or another type of treatment, or a combination of both. Your doctor or nurse will be happy to answer any questions you have about your treatment. You will find it useful to refer to the booklet 'Chemotherapy, a guide' which gives general information on chemotherapy and side effects.

### Your treatment

Your doctor has prescribed a course of treatment with PCV chemotherapy. The treatment consists of the following:

**Day 1** Vincristine by short infusion (into a vein)

**Day 1** CCNU (Lomustine) – capsules taken together for one day only

**Days 1-10** Procarbazine – capsules taken once together for 10 days

For the 10 days while you are taking procarbazine, and for 2 days afterwards, there are dietary restrictions you need to follow. These are explained later in this information sheet.

This treatment is repeated every 6 weeks, usually for up to 6 cycles.

You will have a routine blood test and be reviewed in clinic by a member of the neuro-oncology team before the start of each cycle of treatment. Occasionally we may not be able to go ahead with your treatment until your blood counts are back to a safe level. If this happens, your chemotherapy may be delayed a week or until your blood counts have recovered.

If clinically possible you may be able to have your treatment at a location close to home. The Christie is committed to providing treatment closer to home as part of the Outreach and Christie at Home service.

This treatment can have serious or possibly life-threatening side effects. It is very important that you report side effects straight away. Don't delay, if you feel unwell, please ring The Christie Hotline on **0161 446 3658**. The lines are open 24 hours a day.



## Increased risk of serious infection

You are vulnerable to infection while you are having chemotherapy. Minor infections can become life-threatening in a matter of hours if left untreated. Symptoms of infection include fever, shivering, sweats, sore throat, diarrhoea, discomfort when you pass urine, cough or breathlessness. We recommend that you use a digital thermometer so you can check your temperature. You can buy one from your local chemist.

**If you feel unwell, you have symptoms of an infection or your temperature is 37.5°C or above, or below 36°C contact The Christie Hotline straight away.**

- **Extravasation** is when chemotherapy leaks outside the vein. If you develop redness, soreness or pain at the injection site at any time please let us know straight away.

## Instructions for taking oral CCNU and Procarbazine:

Vincristine will be delivered intravenously on the chemotherapy unit at The Christie or a Christie outreach site. CCNU and Procarbazine can be taken on the chemotherapy unit or taken later, at home, on the same day.

You will be given anti-sickness medicine (Ondansetron) either orally or intravenously prior to your intravenous chemotherapy. Therefore it is not necessary to take a repeat dose of this if you are taking your oral chemotherapy within 6 hours of your intravenous chemotherapy. If it is more than 6 hours, take another dose of ondansetron 30-60 minutes before taking the CCNU and procarbazine capsules.

Take the CCNU on an empty stomach (2 hours after food and 1 hour before food). If preferred, it can be taken at bedtime.

The CCNU and procarbazine can be taken together on Day 1.

Lomustine is taken as a single dose, only on Day 1. Procarbazine is continued once a day for a total of 10 days.

Your total daily dose will be made up of several capsules of CCNU and several capsules or tablets of Procarbazine. If you are unsure about how to take your medication, please ask a member of your clinical team.

The capsules should never be opened or crushed. If they become damaged, avoid getting the powder on your skin or in your eyes. If you accidentally get some on your skin or in your eyes you should wash immediately.

Continue taking ondansetron regularly every 12 hours for 2 days.

You will also be provided with an alternative anti-sickness medicine (Metoclopramide), which may be used 30-60 minutes before taking procarbazine each day, after your Ondansetron is finished, or can be taken up to 3 times per day in combination with ondansetron if required.

- If you vomit after you take the CCNU or Procarbazine capsules, do not take a second dose that day. Contact The Christie Hotline for advice.
- If you continue to feel sick or vomit, please contact your GP or this hospital because your anti-sickness medication may need to be changed or increased.
- Your doctor may have prescribed other medications such as steroids (dexamethasone), anti-epileptics, stomach-protecting drugs or painkillers – these should be taken as prescribed in the usual way. It is usually fine to continue to take any other medications you have been prescribed that are not related to your brain tumour, such as blood pressure tablets. Please check these with your doctor.

## Possible side effects

Chemotherapy can cause many different side effects. Some are more likely to occur than others. Everyone is different and not everyone gets all the side effects. Most side effects are usually temporary, but in some rare cases they can be life-threatening. It is important to tell your hospital doctor or nurse about any side effects so they can be monitored and, where possible, treated.

## Common side effects (more than 1 in 10)

### • Bruising or bleeding (Warning!)

This treatment can reduce the production of platelets which help the blood clot. Let your doctor know if you have any unexplained bruising or bleeding, such as nosebleeds, bloodspots or rashes on the skin and bleeding gums. You may need a platelet transfusion.

### • Nausea and vomiting (sickness)

The severity of this varies from person to person, and tends to be worst for the few days after your vincristine and CCNU. Continue to take the ondansetron anti-sickness medication regularly every 12 hours for 2 days. You will also be provided with additional sickness medication (Metoclopramide) which you can take as well, up to 3 times per day, should you require it. If you continue to feel or be sick, contact your GP or this hospital, because your anti-sickness medication may need to be changed or increased.

### • Lethargy

PCV chemotherapy may make you feel tired and lacking in energy. It can be frustrating when you feel unable to cope with routine tasks. If you do feel tired, take rest and get help with household chores. Gentle exercise such as walking can be beneficial. If necessary, take time off work.

### • Constipation

This may be quite troublesome, and it is important not to let constipation become severe. Try to drink plenty of fluids and eat foods high in fibre. You can also try simple laxatives which you can buy from a pharmacy, but make sure you tell your Christie doctor about this. Your Christie doctor or GP can prescribe stronger laxatives if necessary. (See Severe constipation and abdominal pains on page 4)

### • Headache

If you have mild headaches, which are not persistent, it is fine to take simple painkillers eg paracetamol. If your headaches are more severe, or are new or are changing, please contact The Christie Hotline or your clinical team.

### • Anaemia (low number of red blood cells)

While having this treatment you may become anaemic. This may make you feel tired and breathless. Let your doctor or nurse know if these symptoms are a problem. You may need a blood transfusion.

### • Flu-like symptoms

Procarbazine may cause flu-like symptoms such as fever, aches and pains and shivering about 3 to 5 hours after it is given. These symptoms should be temporary and should settle within 12 to 24 hours. You can take paracetamol which should help. If your symptoms are particularly severe, tell your doctor on your next visit.

### • Loss of appetite

If your appetite is affected, try to eat little and often. If you don't feel like eating, you can replace meals with nutritious, high calorie drinks. These are available from most chemists or can be prescribed by your GP. The Christie booklet: 'Eating – help yourself' provides further information.

## Uncommon side effects (less than 1 in 10)

### • Hair thinning

Some hair loss may occur during treatment, including body and facial hair. It is advisable to avoid perms, colours, use of hot brushes and vigorous frequent washing that could increase hair loss. Please remember that this is a temporary side effect and your hair will grow back when your treatment is completed. Very rarely, hair loss may be permanent.

The cancer information centre offers a coping with hair loss service to all patients where support, information and advice will be given. Drop in, contact **0161 446 8100** or email [informationcentre@christie.nhs.uk](mailto:informationcentre@christie.nhs.uk). Information about the wig service can also be found here and vouchers for wigs can also be obtained for eligible patients. The wig room provides a drop in service, please see The Christie leaflet 'The wig fitting service' for further information.

The Maggie's Centre runs a Talking Heads hair loss support workshop for anyone who is anticipating or experiencing hair loss (both men and women). These sessions cover the practicalities of hair loss as well as offering support with its emotional impact. Contact Maggie's on **0161 641 4848** or email [manchester@maggiescentres.org](mailto:manchester@maggiescentres.org)

### • Sore mouth

Your mouth may become sore or dry, or you may notice small mouth ulcers during this treatment. Drinking plenty of fluids and cleaning your teeth regularly and gently with a soft toothbrush can help to reduce the risk of this happening. We can prescribe a mouthwash for you to use during treatment. You can dilute this with water if your mouth is sore. Ask your doctor or nurse for further advice. There is also general mouth care information in the chemotherapy booklet. If you continue to have a sore mouth, please contact The Christie Hotline.

### • Liver problems

This treatment can occasionally cause abnormal liver blood tests and jaundice. This is rarely severe but your liver function will be monitored every time you come to the clinic for your treatment. Occasionally, we may need to delay or suspend your chemotherapy until your liver blood tests have improved. If this happens, your clinical team will discuss it with you.

### • Jaw pain

Some patients may also develop jaw pain caused by vincristine. This usually settles within 2 to 3 days and can be treated with simple painkillers like paracetamol. Using a mouthwash such as Difflam or Chlorhexidine is also helpful. If your symptoms are particularly severe, please tell your doctor on your next visit.

### • Rash

Procarbazine may cause an itchy rash or blistering. This is more likely to happen later in your treatment course. If this happens, it is important that you stop taking your capsules immediately and contact The Christie Hotline or your clinical team.

### • Allergic reaction (Warning!)

Very rarely, procarbazine may cause wheezing, shortness of breath and facial swelling in addition to a rash. If this occurs, seek urgent medical attention.

### • Severe constipation and abdominal pains

Vincristine can sometimes cause severe constipation, possibly with abdominal pains, a few days after the infusion. Take laxatives as soon as you get any symptoms, particularly if you have vomited or not opened your bowels for more than 2 days. Contact your GP or The Christie Hotline on **0161 446 3658** for further advice.

## • Tingling and numbness in the fingers and toes

This is usually only mild and temporary. Very rarely it may become permanent. Please report these symptoms to your doctor on your next hospital visit.

## • Lung problems

Rarely, PCV can cause changes to the lungs. Always tell your doctor if you develop wheezing, a cough, a fever or feel breathless. You should also let them know if any existing breathing problems get worse. If necessary, they can arrange for you to have tests to check your lungs.

## Foods to be avoided on this regimen:

Procarbazine belongs to a group of medicines that may react with tyramine. Tyramine is a chemical that is present in certain protein-containing foods and drinks. Eating food or taking drinks high in tyramine may cause an unpleasant reaction (a throbbing headache, pounding heart, flushing, sweating, chills) if consumed while you are taking procarbazine and for up to 2 days after you finish taking it. If the reaction is going to occur, it can occur up to 20 mins after having the food or drink.

Tyramine is released as proteins age and break down, therefore it is usually found in foods that are aged, fermented, pickled or smoked. However, it can also be found in protein-containing foods that are improperly stored and allowed to spoil. You should only eat food containing protein if it is fresh.

**Some food and drinks should be avoided completely.** These include: **Alcohol of all types**, mature cheeses (e.g. cheddar, stilton, blue cheese and brie, but mozzarella, cottage cheese and cream cheese are safe), yeast or meat extracts (Marmite, Oxo, Bovril), broad bean pods, pickled fish.

## **Other foods which should be avoided, or tried with caution and only in small quantities include:**

Cured meats and salami (e.g. pepperoni, chorizo, bologna sausage), soy and fermented soy products e.g. soy sauce, tofu, miso, and other fermented vegetable proteins (e.g. Quorn®), Sauerkraut, smoked fish or caviar, over-ripe fruit e.g. avocados, bananas, liver, hung game, non-alcoholic beers and wines.

**Alcohol must be avoided whilst taking procarbazine and for 48 hours after finishing the procarbazine.**

## Medicines to be avoided on this regimen

Certain medicines including herbal medicines and some cough and cold remedies need to be avoided. Please ask your doctor or pharmacist for advice about any other medication you are taking. Steroids (dexamethasone), stomach-protecting drugs, anti-epileptic drugs and painkillers are not affected.

## Serious and potentially life threatening side effects

In a small proportion of patients, chemotherapy can result in very severe side effects which may rarely result in death. The team caring for you will discuss the risk of these side effects with you.

## Sex, contraception and fertility

**Protecting your partner and contraception:** We recommend that you or your partner use a condom during sexual intercourse while you are having the course of chemotherapy. Chemotherapy is dangerous to unborn babies and this will also protect you and your partner from any chemotherapy drugs that may be present in semen and in the vagina. If you suspect that you may be pregnant please tell your doctor immediately.

**Fertility:** This chemotherapy may affect your ability to have children. Your doctor or nurse should have discussed this with you. If not, please ask them before you start treatment.

**Loss of periods:** Due to the effect of chemotherapy on the ovaries, you may find that your periods become irregular or may eventually stop. In younger women this may be temporary, but if you are closer to your menopause it may be permanent. This can result in hot flushes, sweats and vaginal dryness. Please contact your specialist nurse if you would like advice about managing these symptoms.

## Late side effects

Some side effects may become evident only after a number of years. In reaching any decision with you about treatment, the potential benefit you receive from treatment will be weighed against the risks of serious long term side effects to the heart, lungs, kidneys and bone marrow. With some drugs there is also a small but definite risk of developing another cancer. If any of these problems specifically applies to you, the doctor will discuss these with you and note this on your consent form.

## Contacts

If you have any general questions or concerns about your treatment, please ring the area where you are having treatment:

Neuro-oncology clinical nurse specialist - **0161 446 8441**

Your consultant's secretary:

Dr McBain - **0161 918 7008**

Dr Borst /Dr Milanovic - **0161 446 3362**

Dr Colaco/Dr Whitfield/Dr Kennedy - **0161 918 7197**

Administration enquiries - **0161 918 7606/7610**

Chemotherapy nurse - **0161 918 7171**

For advice ring The Christie Hotline on **0161 446 3658** (24 hours)

Your consultant is: .....

Your hospital number is: .....

Your key worker is: .....

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If you need information in a different format, such as easy read, large print, BSL, braille, email, SMS text or other communication support, please tell your ward or clinic nurse.

The Christie is committed to producing high quality, evidence based information for patients. Our patient information adheres to the principles and quality statements of the Information Standard. If you would like to have details about the sources used please contact **the-christie.patient.information@nhs.net**

For information and advice visit the cancer information centres at Withington, Oldham or Salford. Opening times can vary, please check before making a special journey.



Contact The Christie Hotline for  
urgent support and specialist advice  
**The Christie Hotline: 0161 446 3658**  
Open 24 hours a day, 7 days a week