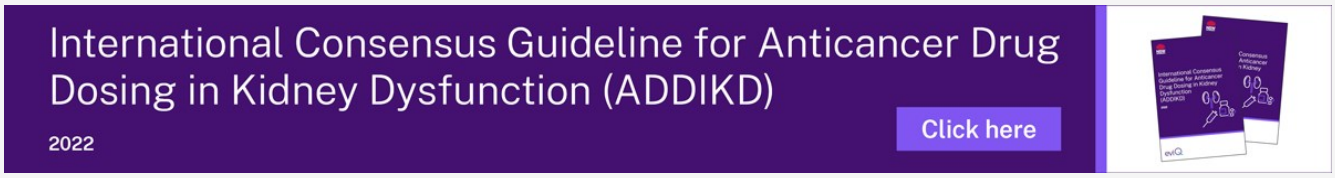
Gastrointestinal stromal cell tumour (GIST) metastatic ripretinib

ID: 4112 v.1 **Endorsed**

Check for clinical trials in this patient group. Link to Australian Clinical Trials website

The anticancer drug(s) in this protocol may have been included in the ADDIKD guideline. Dose recommendations in kidney dysfunction have yet to be updated to align with the ADDIKD guideline. Recommendations will be updated once the individual protocol has been evaluated by the reference committee. For further information refer to the ADDIKD guideline. To assist with calculations, use the eviQ Estimated Glomerular Filtration Rate (eGFR) calculator.



Related pages:

- Gastrointestinal stromal cell tumour (GIST) metastatic sUNITinib
- Gastrointestinal stromal cell tumour (GIST) metastatic imatinib
- Gastrointestinal stromal cell tumour (GIST) metastatic regorafenib

Treatment schedule - Overview

Drug	Dose	Route
Ripretinib	150 mg ONCE a day *	PO

* 3 x 50 mg tablets

Continuous until disease progression or unacceptable toxicity

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Drug status: Ripretinib is PBS authority

Ripretinib available as **50 mg** tablets

Cost: ~ $15,200 per month

Treatment schedule - Detail

The supportive therapies (e.g. antiemetics, premedications, etc.), infusion times, diluents, volumes and routes of administration, if included, are listed as defaults. They may vary between institutions and can be substituted to reflect individual institutional policy.

*Antiemetics if included in the treatment schedule are based upon recommendations from national and international guidelines. These are **defaults only** and may be substituted to reflect individual institutional policy. Select here for recommended doses of alternative antiemetics.*

Continuous treatment		
Ripretinib	150 mg (PO)	ONCE a day (3 x 50 mg tablets)

Continuous until disease progression or unacceptable toxicity

Indications and patient population

Indications:

- Metastatic or unresectable gastrointestinal stromal tumour (GIST) after failure (or intolerance to) imatinib and sunitinib
  - ECOG performance status 0 to 2.

Clinical information

Caution with oral anti-cancer drugs	Select links for information on the safe prescribing, dispensing and administration of orally administered anti-cancer drugs. Read more about the COSA guidelines and oral anti-cancer therapy
Emetogenicity minimal or low	No routine prophylaxis required. If patients experience nausea and/or vomiting, consider using the low emetogenic risk regimen. Read more about preventing anti-cancer therapy induced nausea and vomiting
Cardiac toxicity	Tyrosine kinase inhibitors have been associated with cardiac complications of varying degrees and severity. Patients, especially those with pre-existing cardiovascular disease, should have a baseline cardiac assessment including an electrocardiogram (ECG) and biochemistry and be closely monitored; consider an echocardiogram (ECHO) as clinically indicated. Cardiac assessment should then be repeated as clinically indicated or when starting new medication which affects the QT interval. Read more about cardiac toxicity associated with anti-cancer drugs
Hypertension	Pre-existing hypertension should be adequately controlled prior to commencing treatment and blood pressure should be monitored regularly and treated, if required. In severe or uncontrolled hypertension, treatment should be withheld until hypertension is controlled. Dose modification or permanent discontinuation may be necessary - refer to dose modification section for specific recommendations.
Hand-foot syndrome	Hand-foot syndrome (palmar-plantar erythrodysaesthesia) and rash are common adverse effects with this treatment which generally appear during the first 6 weeks of therapy. Read more about hand food syndrome or palmar plantar erythrodysaesthesia (PPE)
Wound healing	This treatment may impair wound healing and temporary interruption of treatment is recommended in patients undergoing major surgical procedures. Resume treatment based on clinical judgement of adequate wound healing.
Diarrhoea and constipation	Both diarrhoea and constipation may occur with this treatment. Patients may require either antidiarrhoeals or laxatives. Read more about treatment induced diarrhoea
New primary cutaneous malignancies	Ripretinib is associated with an increased risk of cutaneous malignancies including squamous cell carcinomas (SCC), keratoacanthomas and melanoma. Perform dermatologic evaluations when initiating ripretinib and routinely during treatment.
Blood tests	FBC, EUC, CMP, LFT at baseline. Repeat every 2 weeks for the first month, then every 4 weeks thereafter. Check INR and lipase as clinically indicated.
Hepatitis B screening and prophylaxis	Routine screening for HBsAg and anti-HBc is NOT usually recommended for patients receiving this treatment. Read more about hepatitis B screening and prophylaxis in cancer patients requiring cytotoxic and/or immunosuppressive therapy

Vaccinations	Live vaccines are contraindicated in cancer patients receiving immunosuppressive therapy and/or who have poorly controlled malignant disease. Refer to the recommended schedule of vaccination for immunocompromised patients, as outlined in the Australian Immunisation Handbook. Read more about COVID-19 vaccines and cancer.
Fertility, pregnancy and lactation	Cancer treatment can have harmful effects on fertility and this should be discussed with all patients of reproductive potential prior to commencing treatment. There is a risk of foetal harm in pregnant women. A pregnancy test should be considered prior to initiating treatment in females of reproductive potential if sexually active. It is important that all patients of reproductive potential use effective contraception whilst on therapy and after treatment finishes. Effective contraception methods and adequate contraception timeframe should be discussed with all patients of reproductive potential. Possibility of infant risk should be discussed with breastfeeding patients. Read more about the effect of cancer treatment on fertility

Dose modifications

Evidence for dose modifications is limited, and the recommendations made on eviQ are intended as a guide only. They are generally conservative with an emphasis on safety. Any dose modification should be based on clinical judgement, and the individual patient's situation including but not limited to treatment intent (curative vs palliative), the anti-cancer regimen (single versus combination therapy versus chemotherapy versus immunotherapy), biology of the cancer (site, size, mutations, metastases), other treatment related side effects, additional co-morbidities, performance status and patient preferences.Suggested dose modifications are based on clinical trial findings, product information, published guidelines and reference committee consensus . The dose reduction applies to each individual dose and not to the total number of days or duration of treatment cycle unless stated otherwise. Non-haematological gradings are based on Common Terminology Criteria for Adverse Events (CTCAE) unless otherwise specified. Renal and hepatic dose modifications have been standardised where possible. For more information see dosing considerations & disclaimer .

The dose recommendations in kidney dysfunction (i.e.renal impairment) displayed may not reflect those in the ADDIKD guideline and have been included for historical reference only. Recommendations will be updated once the individual protocol has been evaluated by the reference committee, with this version of the protocol then being archived. Clinicians are expected to refer to the ADDIKD guideline prior to prescribing in kidney dysfunction.
International Consensus Guideline for Anticancer Drug Dosing in Kidney Dysfunction (ADDIKD).

Note:

- The following dose modifications have been adapted from the INVICTUS trial[1] and the product information.

Ripretinib dose reduction schedule	
Starting dose	150 mg once daily
First dose reduction	100 mg once daily

- The lowest recommended dose is 100 mg orally once a day. Permanently discontinue if unable to tolerate 100 mg orally once daily.
- Patients requiring a delay longer than 4 weeks should discontinue ripretinib.

Renal impairment	
Creatinine clearance (mL/min)	
30 to 89	No dose modification necessary
less than 30	Ripretinib has not been studied in patients with severe renal impairment or end-stage renal disease

Hepatic impairment

Hepatic impairment	
At baseline:	
Mild	No dose modification necessary
Moderate or severe	Ripretinib has not been studied in patients with moderate hepatic impairment

Hand foot syndrome (link to Hand foot syndrome (Palmar-plantar erythrodysaesthesia))	
Grade 1	Continue current dose of ripretinib and immediately institute supportive measures for symptomatic relief, e.g. topical therapy with emollients, moisturisers and keratolytics including urea cream (10-40% depending on severity) or salicylic acid-containing aqueous cream.
Grade 2	Withhold ripretinib until grade ≤1 or baseline. If recovered within 7 days, resume ripretinib at same dose, otherwise resume at reduced dose. Consider re-escalating ripretinib if maintained at grade ≤1 or baseline for at least 28 days. If palmar-plantar erythrodysaesthesia recurs, withhold ripretinib until grade ≤1 or baseline and then resume ripretinib at a reduced dose regardless of time to improvement.
Grade 3	Withhold ripretinib for at least 7 days or until grade ≤1 or baseline (maximum 28 days). Resume ripretinib at a reduced dose. Consider re-escalating ripretinib if maintained at grade ≤1 or baseline for at least 28 days.

Hypertension	
Grade 1 or 2	Continue ripretinib. Consider increasing the frequency of BP monitoring. If symptomatic, withhold ripretinib until symptoms resolve and blood pressure is controlled.
Grade 3	If symptomatic, withhold ripretinib until symptoms resolve and blood pressure is controlled. If blood pressure is controlled to grade ≤1 or baseline, resume ripretinib at the same dose, otherwise resume at a reduced dose. If grade 3 hypertension recurs, withhold ripretinib until symptoms have resolved and blood pressure is controlled. Resume ripretinib at a reduced dose.
Grade 4	Permanently discontinue ripretinib.

Left ventricular systolic dysfunction	
Grade 3 or 4	Permanently discontinue ripretinib.

Arthralgia and myalgia	
Grade 2	Withhold ripretinib until grade ≤1 or baseline. If recovered within 7 days, resume ripretinib at same dose, otherwise resume at reduced dose. Consider re-escalating ripretinib if maintained at grade ≤1 or baseline for at least 28 days. If arthralgia or myalgia recurs, withhold ripretinib until grade ≤1 or baseline and then resume ripretinib at a reduced dose regardless of time to improvement.
Grade 3	Withhold ripretinib for at least 7 days or until grade ≤1 or baseline (maximum 28 days). Resume ripretinib at a reduced dose.

Arthralgia and myalgia	
	Consider re-escalating ripretinib if maintained at grade ≤1 or baseline for at least 28 days.

Other adverse reactions	
Grade 3 or 4	Withhold ripretinib until grade ≤1 or baseline (maximum 28 days) and then resume ripretinib at a reduced dose, otherwise permanently discontinue. Consider re-escalating ripretinib if no recurrence for at least 28 days. If grade 3 or 4 recurs, permanently discontinue.

Interactions

Drug interactions in eviQ protocols are under review and being updated to align with current literature. Further site-wide updates and changes will occur in due course. References & Disclaimer

The drug interactions shown below are not an exhaustive list. For a more comprehensive list and for detailed information on specific drug interactions and clinical management, please refer to the specific drug product information and the following key resources:

- *MIMS - interactions tab (includes link to a CYP-450 table) (login required)*
- *Australian Medicines Handbook (AMH) – interactions tab (login required)*
- *Micromedex Drug Interactions (login required)*
- *Cancer Drug Interactions*
- *Cytochrome P450 Drug Interactions*

Ripretinib		
	Interaction	**Clinical management**
CYP3A4 and P-gp inhibitors (e.g. amiodarone, aprepitant, azole-antifungals, ritonavir, lapatinib, nilotinib, sorafenib, macrolides, cyclosporin, grapefruit juice etc.)	Increased toxicity of ripretinib possible due to reduced clearance	Strong CYP3A4 inhibitors should be used with caution. Monitor for ripretinib toxicity
CYP3A4 inducers (e.g. carbamazepine, phenytoin, phenobarbitone, rifampicin, St John's wort etc.)	Reduced efficacy of ripretinib possible due to increased clearance	Avoid combination with strong CYP3A4 inducers. If concurrent use with moderate CYP3A4 inducers cannot be avoided, consider ripretinib dose modification or monitor for decreased clinical response to ripretinib
Drugs metabolised by CYP2C8 (e.g. phenytoin, repaglinide etc.)	Increased effect/toxicity of these drugs possible due to inhibition of CYP2D8 by ripretinib resulting in reduced clearance	Monitor for increased effect/toxicity of interacting drugs
Vaccines	Diminished response to vaccines and increased risk of infection with live vaccines.	Live vaccines should be used with caution in cancer patients. For cancer patients who are not receiving immunosuppressive therapy, there is currently no data as to the safety of giving live vaccines. For more information; refer to the recommended schedule of vaccination for cancer patients, as outlined in the Australian Immunisation Handbook

Administration

eviQ provides safe and effective instructions on how to administer cancer treatments. However, eviQ does not provide every treatment delivery option, and is unable to provide a comprehensive list of cancer treatment agents and their required IV line giving set/filter. There may be alternative methods of treatment administration, and alternative supportive treatments that are also appropriate. Please refer to the individual product information monographs via the TGA website for further information.

Administration

This is an oral treatment

Safe handling and waste management (reproductive risk only)

Safe administration

General patient assessment prior to each treatment.

Any toxicity grade 2 or greater may require dose reduction, delay or omission of treatment and review by medical officer before recommencing treatment.

Treatment - Time out

Ripretinib

- administer orally ONCE a day
- to be swallowed whole with a glass of water; do not break, crush or chew
- may be taken with or without food

Note: missed dose can be taken if less than 8 hours have passed since the missed scheduled dose; if a dose is forgotten or vomited, normal dosing should be resumed at the next scheduled dose.

Continue safe handling precautions (reproductive risk only) for 7 days after completion of drug(s).

Discharge information

Ripretinib tablets

- Ripretinib tablets with written instructions on how to take them.

Antiemetics

- Antiemetics as prescribed.

Antidiarrhoeals

- Antidiarrhoeals as prescribed.

Patient information

- Ensure patient receives patient information sheet.

Side effects

The side effects listed below are not a complete list of all possible side effects for this treatment. Side effects are categorised into the approximate onset of presentation and should only be used as a guide.

Immediate (onset hours to days)	
Nausea and vomiting	Read more about prevention of treatment induced nausea and vomiting
Taste and smell alteration	Read more about taste and smell changes

Early (onset days to weeks)	
Palmar-plantar erythrodysaesthesia (PPE) - hand-foot syndrome (HFS)	Bilateral erythema, tenderness, pain, swelling, tingling, numbness, pruritus, dry rash, or moist desquamation and ulceration of the palms and soles. It is also known as hand-foot syndrome (HFS). Symptoms appear to be dose dependent and palms are affected more than soles. Read more about hand-foot syndrome associated with chemotherapy
Arthralgia and myalgia	Generalised joint pain or and/or stiffness and muscle aches, often worse upon waking or after long periods of inactivity. Can improve with movement. May be mild or severe, intermittent or constant and accompanied by inflammation. Read more about arthralgia and myalgia
Oral mucositis	Erythematous and ulcerative lesions of the gastrointestinal tract (GIT). It commonly develops following chemotherapy, radiation therapy to the head, neck or oesophagus, and high dose chemotherapy followed by a blood and marrow transplant (BMT). Read more about oral mucositis
Diarrhoea	Read more about treatment induced diarrhoea
Constipation	
Hypertension	High blood pressure is commonly associated with many anti-cancer drugs. Pre-existing hypertension should be controlled prior to initiation of drugs capable of causing hypertension.
Hepatotoxicity	Anti-cancer drugs administered either alone or in combination with other drugs and/or radiation may cause direct or indirect hepatotoxicity. Hepatic dysfunction can alter the metabolism of some drugs resulting in systemic toxicity.
Fatigue	Read more about fatigue
Anorexia	Loss of appetite accompanied by decreased food intake. Read more about anorexia

Late (onset weeks to months)	
Alopecia	Hair loss may occur from all parts of the body. Patients can also experience mild to moderate discomfort of the hair follicles, and rarely pain as the hair is falling out. Read more about alopecia and scalp cooling
Cardiotoxicity	Cardiotoxicity may manifest as asymptomatic reduction in left ventricular ejection fraction (LVEF), arrhythmia, cardiomyopathy, hypertension, cardiac ischaemia and congestive heart failure (CHF). The risk of cardiotoxicity is increased by a number of factors, particularly a history of heart disease and electrolyte imbalances. Read more about cardiotoxicity associated with anti-cancer drugs

Evidence

The evidence supporting this protocol comes from a phase III multicentre international randomised trial (INVICTUS) involving 129 patients comparing the "switch-control" kinase inhibitor ripretinib with placebo in patients with locally advanced or metastatic gastrointestinal stromal tumours (GIST).[1]

Between February 2018 and November 2018, 85 patients were randomised to receive ripretinib 150 mg daily PO, continuous until progression or unacceptable toxicity, and 44 patients were randomised to receive placebo and best supportive care. The median age was 60 years and ECOG performance status was 0 (42%), 1 (50%) or 2 (8%). At the time of disease progression, patients assigned to placebo were permitted to cross over to ripretinib 150 mg daily, and patients assigned to ripretinib were permitted to dose escalate to ripretinib 150 mg twice a day.

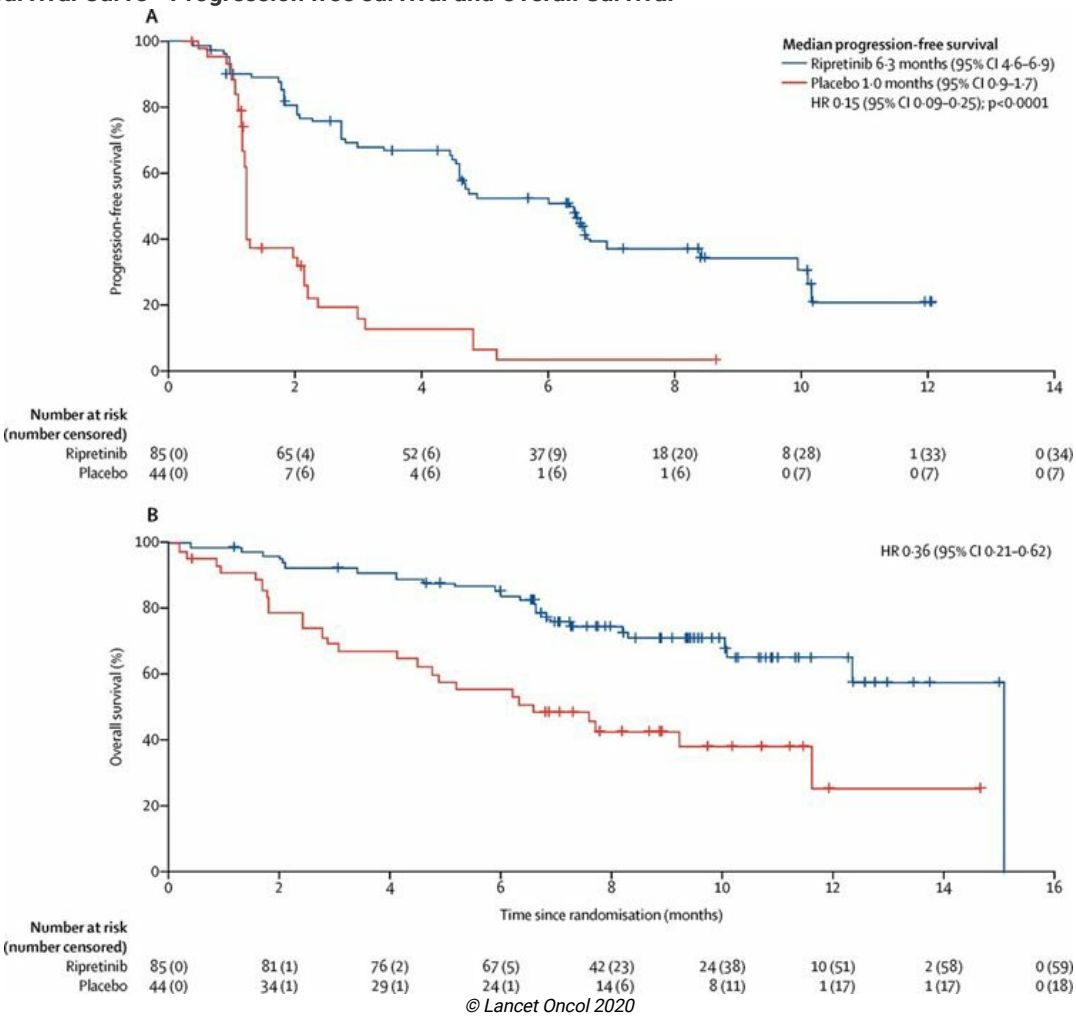
The primary end point was progression-free survival (PFS) (by blinded independent central review) and secondary end points included objective response rate, overall survival (OS), quality of life and safety.

Efficacy

After a median follow-up of 6.3 months in the ripretinib group and 1.6 months in the placebo group, the median PFS by blinded independent central review (BICR) was 6.3 months (95% CI 4.6 to 6.9) with ripretinib compared with 1.0 months (95% CI 0.9–1.7)

with placebo (HR=0.15, 95% CI 0.09 to 0.25, p=<0.0001). Median overall survival was 15.1 months (95% CI 12.3 to 15.1) in the ripretinib group and 6.6 months (95% CI 4.1 to 11.6) in the placebo group (HR=0.36, 95% CI 0.21 to 0.62), inclusive of the double-blind and open-label periods.[1]

Kaplan-Meier Survival Curve - Progression free survival and Overall Survival[1]



Toxicity

The overall rate of grade 3 or 4 treatment-related adverse events was 24.7% in the ripretinib group and 16.3% in the placebo group.

Common toxicities in the ripretinib group (>10%) and the modifications to study treatment are summarised below:

Treatment Related Adverse Events[1]

	Ripretinib group (n=85)				Placebo group (n=43)			
	Grade 1–2	Grade 3	Grade 4	Grade 5	Grade 1–2	Grade 3	Grade 4	Grade 5
Alopecia	42 (49%)	-	-	-	1 (2%)	-	-	-
Myalgia	23 (27%)	1 (1%)	-	-	4 (9%)	0	-	-
Nausea	21 (25%)	1 (1%)	-	-	1 (2%)	0	-	-
Fatigue	20 (24%)	2 (2%)	-	-	6 (14%)	1 (2%)	-	-
Palmar–plantar erythrodysaesthesia syndrome	18 (21%)	0	-	-	0	0	-	-
Diarrhoea	17 (20%)	1 (1%)	0	0	2 (5%)	1 (2%)	0	0
Constipation	13 (15%)	0	0	0	3 (7%)	0	0	0
Decreased appetite	12 (14%)	1 (1%)	0	0	2 (5%)	1 (2%)	0	0
Weight loss	13 (15%)	0	-	-	3 (7%)	0	-	-

	Ripretinib group (n=85)				Placebo group (n=43)			
Blood bilirubin increased	12 (14%)	0	0	-	0	0	0	-
Arthralgia	10 (12%)	0	-	-	0	0	-	-
Muscle spasms	10 (12%)	0	-	-	2 (5%)	0	-	-

Dose modifications, interruptions and discontinuations[1]

Category	Ripretinib group (n=85)	Placebo group (n=43)
Treatment-related AE leading to dose reduction	5 (5.9%)	1 (2.3%)
Treatment-related AE leading to dose interruption	12 (14.1%)	3 (7.0%)
Treatment-related AE leading to study treatment discontinuation	4 (4.7%)	1 (2.3%)

References

1 Blay, J., C. Serrano, M. C. Heinrich, et al. 2020. "Ripretinib in patients with advanced gastrointestinal stromal tumours (INVICTUS): a double-blind, randomised, placebo-controlled, phase 3 trial." Lancet Oncol 21(7):923-934.

History

Version 1

Date	Summary of changes
22/04/2022	New protocol approved electronically by Medical Oncology Reference Committee.
13/05/2022	Protocol published on eviQ. Review in 1 year.

First approved: 13 May 2022
Review due: 30 June 2023

The currency of this information is guaranteed only up until the date of printing, for any updates please check:
https://www.eviq.org.au/p/4112
15 Jul 2023

Patient information - Gastrointestinal stromal cell tumour (GIST) metastatic - Ripretinib

Patient's name:

Your treatment

It is important to understand that ripretinib is not a traditional chemotherapy drug and has a different way of working. It works by targeting the cancer cells to stop them growing and spreading.

The treatment schedule below explains how drug for this treatment is given.

Ripretinib		
This treatment is continuous. Your doctor will advise you how long to take the treatment for.		
Day	**Treatment**	**How it is given**
Continuous	**Ripretinib** *(rip-RE-ti- nib)*	Take orally ONCE a day, at the same time each day, with or without food. Swallow whole with a glass of water, do not break, crush or chew. Missed dose can be taken if less than 8 hours have passed since the missed scheduled dose; if a dose is forgotten for more than 8 hours or vomited, do not take an extra dose and resume at the next scheduled dose.

When to get help

Anticancer drugs (drugs used to treat cancer) can sometimes cause serious problems. It is important to get medical help immediately if you become unwell.

IMMEDIATELY go to your nearest hospital Emergency Department, or contact your doctor or nurse if you have any of the following at any time:	**Emergency contact details** Ask your doctor or nurse from your treating team who to contact if you have a problem
• a temperature of 38°C or higher • chills, sweats, shivers or shakes • shortness of breath • uncontrolled vomiting or diarrhoea • pain, tingling or discomfort in your chest or arms • you become unwell.	Daytime:..... Night/weekend:..... Other instructions:..... ....

Other information about your treatment

Changes to your dose or treatment delays

Sometimes a treatment may be started at a lower dose or the dose needs to be changed during treatment. There may also be

times when your treatment is delayed. This can happen if your doctor thinks you are likely to have severe side effects, if you get severe side effects, if your blood counts are affected and causing delays in treatment, or if you are finding it hard to cope with the treatment. This is called a dose reduction, dose change or treatment delay. Your doctor will explain if you need any changes or delays to your treatment and the reason why.

Surgery and wound healing

This treatment may affect wound healing. Tell your doctor if you are planning to have surgery or have a wound that has not healed.

Blood tests and monitoring

Anti-cancer drugs can reduce the number of blood cells in your body. You will need to have regular blood tests to check that your blood cell count has returned to normal. If your blood count is low, your treatment may be delayed until it has returned to normal. Your doctor or nurse will tell you when to have these blood tests.

Other medications given during this treatment

- **Anti-sickness (anti-nausea) medication:** you may be given some anti-sickness medication. Make sure you take this medication as your doctor or nurse tells you, even if you don't feel sick. This can help to prevent the sickness starting.
- **Antidiarrhoeals:** you may be given some medication to treat diarrhoea. Your doctor or nurse will tell you how and when to take your antidiarrhoeal medication.

Side effects

Cancer treatments can cause damage to normal cells in your body, which can cause side effects. Everyone gets different side effects, and some people will have more problems than others.

The table below shows some of the side effects you may get with this treatment. You are unlikely to get all of those listed and you may also get some side effects that have not been listed.

Tell your doctor or nurse about any side effects that worry you. Follow the instructions below and those given to you by your doctor or nurse.

Immediate (onset hours to days)	
Nausea and vomiting	• You may feel sick (nausea) or be sick (vomit). • Take your anti-sickness medication as directed even if you don't feel sick. • Drink plenty of fluids (unless you are fluid restricted). • Eat small meals more frequently. • Try food that does not require much preparation. • Try bland foods like dry biscuits or toast. • Gentle exercise may help with nausea. • Ask your doctor or nurse for eviQ patient information - Nausea and vomiting during cancer treatment. • **Tell your doctor or nurse immediately, or go to the nearest hospital Emergency Department if you have uncontrolled vomiting or feel dizzy or light-headed.**
Taste and smell changes	• You may find that food loses its taste or tastes different. • These changes are likely to go away with time. • Do your mouth care regularly. • Chew on sugar-free gum or eat sugar-free mints. • Add flavour to your food with sauces and herbs. • Ask your doctor or nurse for eviQ patient information - Taste and smell changes during cancer treatment.
Early (onset days to weeks)	

Hand-foot syndrome (palmar-plantar erythrodysaesthesia)	• The palms of your hands and soles of your feet may become:
	  ◦ red and hot
	  ◦ swollen
	  ◦ painful and tender
	  ◦ blistered.
	• The skin in the area may also peel.
	• Moisturise your hands and feet daily with sorbolene or aqueous cream.
	• Keep your hands and feet clean and dry.
	• Avoid hot water, instead use lukewarm water to bathe.
	• Avoid direct sunlight.
	• Avoid unnecessary walking, jogging or exercise.
	• Wear cotton socks and avoid tight-fitting shoes.
	• **Tell your doctor or nurse as soon as possible if you notice any skin changes on your hands or feet.**

Joint and muscle pain and stiffness	• You may get muscle, joint or general body pain and stiffness. • Applying a heat pack to affected areas may help. • Talk to your doctor or nurse about other ways to manage these symptoms. You may need medication to help with any pain.

Mouth pain and soreness (mucositis)	• You may have:
	  ◦ bleeding gums
	  ◦ mouth ulcers
	  ◦ a white coating on your tongue
	  ◦ pain in the mouth or throat
	  ◦ difficulty eating or swallowing.
	• Avoid spicy, acidic or crunchy foods and very hot or cold food and drinks.
	• Try bland and soft foods.
	• Brush your teeth gently with a soft toothbrush after each meal and at bedtime. If you normally floss continue to do so.
	• Rinse your mouth after you eat and brush your teeth, using either:
	  ◦ 1/4 teaspoon of salt in 1 cup of warm water, or
	  ◦ 1/4 teaspoon of bicarbonate of soda in 1 cup of warm water
	• Ask your doctor or nurse for eviQ patient information - Mouth problems during cancer treatment.
	• **Tell your doctor or nurse if you get any of the symptoms listed above.**

Diarrhoea	• You may get bowel motions (stools, poo) that are more frequent or more liquid. • You may also get bloating, cramping or pain. • Take your antidiarrhoeal medication as directed by your doctor. • Drink plenty of fluids (unless you are fluid restricted). • Eat and drink small amounts more often. • Avoid spicy foods, dairy products, high fibre foods, and coffee. • Ask your doctor or nurse for eviQ patient information - Diarrhoea during cancer treatment. • **Tell your doctor or nurse immediately, or go to your nearest hospital Emergency Department if your diarrhoea is not controlled, you have 4 or more loose bowel motions per day, and if you feel dizzy or light-headed.**

Constipation	• You may have bowel motions (stools, poo) that are less frequent, harder, smaller, painful or difficult to pass. • You may also get: ◦ bloating, cramping or pain ◦ a loss of appetite ◦ nausea or vomiting. • Drink plenty of fluids (unless you are fluid restricted). • Eat plenty of fibre-containing foods such as fruit, vegetables and bran. • Take laxatives as directed by your doctor. • Try some gentle exercise daily. • **Tell your doctor or nurse if you have not opened your bowels for more than 3 days.**
High blood pressure (hypertension)	• You may not have any signs or symptoms if you have high blood pressure. • If it is severe you may get headaches, shortness of breath or feel dizzy. • Your blood pressure will be taken regularly during your treatment. • **Tell your doctor or nurse immediately, or go to the nearest hospital Emergency Department if you get any of the signs or symptoms listed above.**
Liver problems	• You may get: ◦ yellowing of your skin or eyes ◦ itchy skin ◦ pain or tenderness in your stomach ◦ nausea and vomiting ◦ loss of appetite • You will have regular blood tests to check how well your liver is working. • **Tell your doctor or nurse as soon as possible if you notice that your urine is a dark colour, the whites of your eyes look yellow, or if you have stomach pain.**
Tiredness and lack of energy (fatigue)	• You may feel very tired, have no energy, sleep a lot, and not be able to do normal activities or things you enjoy. • Do not drive or operate machinery if you are feeling tired. • Nap for short periods (only 1 hour at a time) • Prioritise your tasks to ensure the best use of your energy. • Eat a well balanced diet and drink plenty of fluids (unless you are fluid restricted). • Try some gentle exercise daily. • Allow your friends and family to help. • **Tell your doctor or nurse if you get any of the symptoms listed above.**
Appetite loss (anorexia)	• You may not feel like eating. • Try to avoid drinking fluids at meal times. • Try to eat small meals or snacks regularly throughout the day. • Try to eat food that is high in protein and calories. • If you are worried about how much food you can eat, or if you are losing weight, ask to speak to a dietitian.

Late (onset weeks to months)	
Hair loss (alopecia)	• Your hair may start to fall out from your head and body. • Hair loss usually starts 2 to 3 weeks after your first treatment. • You may become completely bald and your scalp might feel tender. • Use a gentle shampoo and a soft brush. • Take care with hair products like hairspray, hair dye, bleaches and perms. • Protect your scalp from the cold with a hat, scarf or wig. • Protect your scalp from the sun with a hat or sunscreen of SPF 50 or higher. • Moisturise your scalp to prevent itching. • Ask your doctor or nurse about the Look Good Feel Better program
Heart problems	• You may get: ◦ chest pain or tightness ◦ shortness of breath ◦ swelling of your ankles ◦ an abnormal heartbeat. • Heart problems can occur months to years after treatment. • Tell your doctor if you have a history of heart problems or high blood pressure. • Before or during treatment, you may be asked to have a test to see how well your heart is working. • **Tell your doctor or nurse immediately, or go to the nearest hospital Emergency Department if you get any of the symptoms listed above.**

General advice for people having cancer treatment

Blood clot risk

- Cancer and anticancer drugs can increase the risk of a blood clot (thrombosis).
- Tell your doctor if you have a family history of blood clots.
- A blood clot can cause pain, redness, swelling in your arms or legs, shortness of breath or chest pain.
- If you have any of these symptoms go to your nearest hospital Emergency Department.

Medications and vaccinations

- Before you start treatment, tell your doctor about any medications you are taking, including vitamins or herbal supplements.
- Don’t stop or start any medications during treatment without talking to your doctor and pharmacist first.
- Paracetamol is safe to take if you have a headache or other mild aches and pains. It is recommended that you avoid taking aspirin, ibuprofen and other anti-inflammatory type medications for pain while you are having treatment. However, if these medications have been prescribed by your doctor, do not stop taking them without speaking with your doctor.
- Vaccinations such as flu and tetanus vaccines are safe to receive while having treatment. Do not have any live vaccines during your treatment or for 6 months after it finishes. If you are unsure, check with your doctor before you have any vaccinations.
- People you live with should be fully vaccinated, including having live vaccines according to the current vaccination schedule. Extra care needs to be taken with hand washing and careful disposal of soiled nappies for infants who have recently received the rotavirus vaccine.

Other medical and dental treatment

- If you go to hospital or any other medical appointment (including dental appointments), always tell the person treating you that you are receiving anticancer drugs.
- Before you have any dental treatment, talk to your doctor.

Diet

- While you are receiving this treatment it is important that you try to maintain a healthy diet.
- Grapefruit and grapefruit juice can interact with your medication and should be avoided while you are on this treatment.
- Speak to your doctor or nurse about whether drinking alcohol is safe with your treatment.
- If you have any concerns about recent weight loss or weight gain or questions about your diet, ask to speak to a dietitian.

Fertility

- Some cancer treatments can reduce your fertility. This can make it difficult or impossible to get pregnant or father a child.
- Talk to your doctor or nurse before you start any treatment. Depending on your situation there may be fertility sparing options available to you and/or your partner, discuss these with your doctor or nurse.

Pregnancy and breastfeeding

- Some cancer treatments can be dangerous to unborn babies. Talk to your doctor or nurse if you think there is any chance that you could be pregnant.
- Do not try to get pregnant or father a child during this treatment. Contraception should be used during treatment and after stopping treatment. Ask your doctor or nurse about what type of contraception you should use.
- If you are planning pregnancy/fatherhood after completing this treatment, talk to your doctor. Some doctors advise waiting between 6 months and 2 years after treatment.
- Do not breastfeed if you are on this treatment, as anti-cancer medications can also pass into breast milk.

Sex life and sexuality

- The desire to have sex may decrease as a result of this treatment or its side effects.
- Your emotions and the way you feel about yourself may also be affected by this treatment.
- It may help to discuss your concerns with your partner and doctor or nurse.

Quitting smoking

- It is never too late to quit smoking. Quitting smoking is one of the best things you can do to help your treatment work better.
- There are many effective tools to improve your chances of quitting.
- Talk to your treating team for more information and referral to a smoking cessation support service.

Staying active

- Research shows that exercise, no matter how small, has many benefits for people during and after cancer treatment.
- Talk to your doctor before starting an exercise program. Your doctor can advise whether you need a modified exercise program.

For more information about cancer treatment, side effects and side effect management see our Patient and carers section.

Where to get more information

Telephone support

- Call Cancer Council 13 11 20 for cancer information and support

General cancer information and support

- Australian Rare Cancer (ARC) Portal – arcportal.org.au/
- Beyondblue – beyondblue.org.au
- Cancer Australia – canceraustralia.gov.au
- Cancer Council Australia – cancer.org.au
- Cancer Voices Australia – cancervoicesaustralia.org
- CanTeen – canteen.org.au
- Carers Australia – carersaustralia.com.au
- CHILL Cancer related hair loss - scalpcooling.org
- eviQ Cancer Treatments Online – eviq.org.au
- LGBTQI+ People and Cancer - cancercouncil.com.au/cancer-information/lgbtqi
- Look Good Feel Better – lgfb.org.au
- Patient Information – patients.cancer.nsw.gov.au
- Radiation Oncology Targeting Cancer – targetingcancer.com.au
- Redkite – redkite.org.au
- Return Unwanted Medicines – returnmed.com.au
- Staying active during cancer treatment – patients.cancer.nsw.gov.au/coping-with-cancer/physical-wellbeing/staying-active

Quit smoking information and support

Quitting smoking is helpful even after you have been diagnosed with cancer. The following resources provide useful information and support to help you quit smoking. Talk to your treating team about any other questions you may have.

- Call Quitline on 13 QUIT (13 78 48)
- iCanQuit – iCanQuit.com.au
- Patient Information – patients.cancer.nsw.gov.au/coping-with-cancer/physical-wellbeing/quitting-smoking
- Quitnow – quitnow.gov.au

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