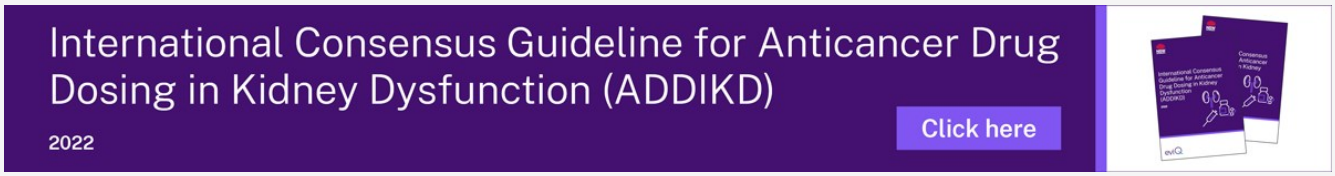
Breast metastatic trastuzumab three weekly and vinORELBine (oral)

ID: 1627 v.4 **Endorsed**

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

This protocol is based on limited evidence; refer to the evidence section of this protocol for more information.

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:

- Breast metastatic trastuzumab three weekly and vinORELBine (IV)
- Breast metastatic vinORELBine (oral)
- Breast metastatic trastuzumab three weekly
- Breast trastuzumab subcutaneous

Treatment schedule - Overview

Cycle 1

Drug	Dose	Route	Day
Trastuzumab	8 mg/kg (loading dose only)	IV infusion *	1
vinORELBine	60 mg/m^2 ONCE a week **	PO	1 and 8

Cycle 2 and further cycles

Drug	Dose	Route	Day
Trastuzumab	6 mg/kg (subsequent doses)	IV infusion *	1
vinORELBine	60 mg/m^2 ONCE a week **	PO	1 and 8

*Trastuzumab is available as a subcutaneous formulation administered at a dose of 600 mg every three weeks. Subcutaneous trastuzumab has a similar safety profile to intravenous trastuzumab and is non-inferior in terms of pharmacokinetic profile and efficacy and therefore is a valid alternative route of administration compared to standard intravenous trastuzumab. Link to Breast trastuzumab subcutaneous protocol.

** If well tolerated, consider increasing the dose of vinorelbine to 80 mg/m^2 from cycle 2 or 3 (see dose escalation in the ***Dose modifications*** section of the protocol)

Frequency: 21 days

Cycles: Continuous until disease progression or unacceptable toxicity. Trastuzumab monotherapy should be continued if vinorelbine is stopped for toxicity.

Notes:

- Bioequivalence: 60 mg/m^2 of oral vinorelbine is equivalent to 25 mg/m^2 of intravenous vinorelbine and 80 mg/m^2 of oral vinorelbine is equivalent to 30 mg/m^2 of intravenous vinorelbine.
- Two major differences are associated with oral administration: a higher inter-subject variability reflecting significant differences in the absorption rate from one patient to another and a higher incidence of gastrointestinal side-effects. Oral administration seems to increase the incidence, but not the severity, of nausea, vomiting and diarrhoea; prophylactic administration of anti-emetics is recommended.

Drug status: Trastuzumab and vinorelbine oral capsules are PBS authority

Trasutuzumab IV is available in **60 mg** and **150 mg** vials.

Vinorelbine is available as **20 mg** and **30 mg** oral capsules.

Cost: ~ $1,270 per cycle

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.*

Cycle 1

Day 1		
Granisetron	2 mg (PO)	60 minutes before chemotherapy
Trastuzumab	8 mg/kg (IV infusion)	in 250 mL sodium chloride 0.9% over 90 minutes (loading dose; cycle 1 only)*
vinORELBine	60 mg/m^2 (PO)	ONCE a week on day 1 and 8, with or after food. If well tolerated, consider increasing the dose to 80 mg/m^2 from cycle 2 or 3 (see dose escalation in the Dose modifications section below).

Day 8		
Granisetron	2 mg (PO)	60 minutes before chemotherapy
vinORELBine	60 mg/m^2 (PO)	ONCE a week on day 1 and 8, with or after food. If well tolerated, consider increasing the dose to 80 mg/m^2 from cycle 2 or 3 (see dose escalation in the Dose modifications section below).

Cycle 2 and further cycles

Day 1		
Granisetron	2 mg (PO)	60 minutes before chemotherapy
Trastuzumab	6 mg/kg (IV infusion)	in 250 mL sodium chloride 0.9% over 30 minutes (if the initial loading dose was well tolerated)*
vinORELBine	60 mg/m^2 (PO)	ONCE a week on day 1 and 8, with or after food. If well tolerated, consider increasing the dose to 80 mg/m^2 from cycle 2 or 3 (see dose escalation in the Dose modifications section below).

Day 8		
Granisetron	2 mg (PO)	60 minutes before chemotherapy
vinORELBine	60 mg/m^2 (PO)	ONCE a week on day 1 and 8, with or after food. If well tolerated, consider increasing the dose to 80 mg/m^2

Day 8		
		from cycle 2 or 3 (see dose escalation in the Dose modifications section below).

*Trastuzumab is available as a subcutaneous formulation administered at a dose of 600 mg every three weeks. Subcutaneous trastuzumab has a similar safety profile to intravenous trastuzumab and is non-inferior in terms of pharmacokinetic profile and efficacy and therefore is a valid alternative route of administration compared to standard intravenous trastuzumab. Link to Breast trastuzumab subcutaneous protocol.

Frequency: 21 days

Cycles: Continuous until disease progression or unacceptable toxicity. Trastuzumab monotherapy should be continued if vinorelbine is stopped for toxicity.

Indications and patient population

Indication:

- HER-2 positive metastatic breast cancer, after failure of standard prior therapy including an anthracycline.
  - HER-2 positive as demonstrated by in situ hybridisation (ISH)

Caution:

- Left ventricular ejection fraction (LVEF) of 45% or less.

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
Venous access required	IV cannula (IVC) or central venous access device (CVAD) is required to administer this treatment. Read more about central venous access device line selection
Hypersensitivity/infusion related reaction	Although hypersensitivity with trastuzumab is common, severe hypersensitivity reactions are uncommon. Use with caution in patients with dyspnoea at rest from pulmonary/cardiac conditions as increased risk of infusion related symptoms.
Premedication	Premedication only required if patient has had a previous hypersensitivity reaction and should be based on clinical judgement.
Emetogenicity MODERATE	A suggested default antiemetic has been added to the treatment schedule and may be substituted to reflect institutional policy. Although oral vinorelbine is classified as having MODERATE emetogenicity, in clinical practice the administration of a 5HT3 antagonist taken ONE hour prior to treatment may be sufficient to control nausea and vomiting. If patients experience nausea and/or vomiting, follow the standard moderate antiemetic prophylaxis regimen for acute and delayed emesis. Ensure that patients also have sufficient antiemetics for breakthrough emesis: Metoclopramide 10 mg three times a day when necessary (maximum of 30 mg/24 hours, up to 5 days) OR Prochlorperazine 10 mg PO every 6 hours when necessary. Read more about preventing anti-cancer therapy induced nausea and vomiting

Cardiac toxicity associated with HER-2 directed agents	Patients receiving HER-2 directed agents are at an increased risk of cardiotoxicity e.g. asymptomatic decrease in the left ventricular ejection fraction (LVEF) and congestive heart failure (CHF). In patients with a LVEF less than 45% and/or symptomatic heart failure HER-2 directed therapy should be avoided, except in the metastatic setting when breast cancer is life-threatening and where a cardiologist is also involved. Concurrent anthracycline and HER-2 directed therapy is not recommended for extended periods of time. Baseline and 3 monthly cardiac function tests are required during treatment. In the metastatic setting, after the first 12 months of therapy, if there are no cardiac complications, the frequency of cardiac assessments may be reduced at the discretion of the treating clinician unless there has been recent exposure to anthracyclines. Read more about cardiac toxicity associated with HER-2 targeted agents
Constipation	Prescribe prophylactic laxatives to prevent constipation related to the use of vinca alkaloids.
Peripheral neuropathy	Assess prior to each treatment. If a patient experiences grade 2 or greater peripheral neuropathy, a dose reduction, delay, or omission of treatment may be required; review by medical officer before commencing treatment. Read more about peripheral neuropathy Link to chemotherapy-induced peripheral neuropathy screening tool
Pulmonary toxicity	There have been infrequent reports (less than 5% of patients) of pulmonary toxicity associated with vinorelbine. Read more about pulmonary toxicity associated with anti-cancer drugs.
Biosimilar drug	Read more about biosimilar drugs on the Biosimilar Awareness Initiative page
Blood tests	FBC, EUC and LFTs at baseline. Repeat FBC prior to each treatment, EUC and LFTs prior to each cycle or 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: all dose reductions are calculated as a percentage of the starting dose.

Dose escalation for oral vinorelbine	
For consideration only in the absence of significant myelosuppression	Consider increasing the dose of oral vinorelbine to 80 mg/m^2 from **cycle 2 or 3** if well tolerated (the dose should not be increased to 80 mg/m^2 in patients whose absolute neutrophil count has dropped once to less than 0.5 x 10^9/L or more than once between 0.5 to 1.0 x 10^9/L).

Haematological toxicity	
ANC x 10^9/L (pre-treatment blood test)	
1.0 to less than 1.5	Refer to local institutional guidelines; it is the view of the expert clinicians that treatment should continue if patient is clinically well
0.5 to less than 1.0	Delay treatment until recovery
less than 0.5	Delay treatment until recovery and reduce vinorelbine by 25% for subsequent cycles
Febrile neutropenia or previous delay for myelosuppression	Delay treatment until recovery and reduce vinorelbine by 25% for subsequent cycles
Prolonged recovery greater than two weeks delay or 3rd delay for myelosuppression	Delay treatment until recovery and reduce vinorelbine by 50% for subsequent cycles or cease
Platelets x 10^9/L (pre-treatment blood test)	
75 to less than 100	The general recommendation is to delay, however if the patient is clinically well it may be appropriate to continue treatment; refer to treating team and/or local institutional guidelines
50 to less than 75	Delay treatment until recovery
less than 50	Delay treatment until recovery and reduce vinorelbine by 25% for subsequent cycles

Note: *if treatment cannot be delivered on Day 8, then that treatment should be omitted rather than delayed. Treatment for the next cycle should proceed on the date originally scheduled and should incorporate dose modifications as appropriate.*

Renal impairment
No dose modifications necessary

Hepatic impairment	
Hepatic dysfunction	
Mild	Reduce vinorelbine by 25%
Moderate	Reduce vinorelbine by 50%
Severe	Omit vinorelbine

Peripheral sensory neuropathy

Grade 2 which is present at the start of the next cycle	Reduce vinorelbine by 25%; If persistent, reduce vinorelbine by 50%
Grade 3 or Grade 4	Omit vinorelbine

Cardiac toxicity	
Consider referral to a cardiologist if any of the following occur	
LVEF less than 45%	Delay trastuzumab. Repeat LVEF assessment within 3 weeks Consider discontinuing trastuzumab if LVEF less than 45% is confirmed
Symptomatic heart failure	Consider discontinuing trastuzumab

Missed doses of trastuzumab	
By 6 weeks or less	No dose modification necessary Give trastuzumab as soon as possible, i.e. do not wait until the next planned cycle
By more than 6 weeks	Reload trastuzumab with a dose of 8 mg/kg Subsequent doses of 6 mg/kg should then be given every 3 weeks, according to the previous cycle However, if the delay was due to cardiac toxicity, clinicians may choose not to reload the patient

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*

Trastuzumab		
	Interaction	**Clinical management**
Cardiotoxic drugs (e.g. anthracyclines cyclophosphamide)	Additive cardiotoxicity	Monitor cardiac function closely in patients who have previously been treated with cumulatively cardiotoxic drugs
Paclitaxel	Increased toxicity of trastuzumab possible due to reduced clearance	Monitor for trastuzumab toxicity (esp. cardiotoxicity)

Vinorelbine		
	Interaction	**Clinical management**
CYP3A4 and P-gp inhibitors (e.g. amiodarone, aprepitant, azole-antifungals, ritonavir, lapatinib, nilotinib, sorafenib, macrolides, ciclosporin, grapefruit juice etc.)	Increased toxicity of vinorelbine possible due to reduced clearance	Monitor for vinorelbine toxicity (esp. neurotoxicity, myelosuppression)
CYP3A4 inducers (e.g. carbamazepine, phenytoin, phenobarbitone, rifampicin, St John's wort etc.)	Reduced efficacy of vinorelbine possible due to increased clearance	Monitor for decreased clinical response to vinorelbine
Mitomycin	Increased risk of pulmonary toxicity when vinorelbine administered following or concomitantly with mitomycin	Avoid combination or monitor closely for pulmonary toxicity (i.e. interstitial infiltrates, pleural effusion resulting in respiratory distress and cough)

General		
	Interaction	**Clinical management**
Warfarin	Anti-cancer drugs may alter the anticoagulant effect of warfarin.	Monitor INR regularly and adjust warfarin dosage as appropriate; consider alternative anticoagulant.
Direct oral anticoagulants (DOACs) e.g. apixaban, rivaroxaban, dabigatran	Interaction with both CYP3A4 and P-gp inhibitors /inducers. DOAC and anti-cancer drug levels may both be altered, possibly leading to loss of efficacy or toxicity (i.e. increased bleeding).	Apixaban: avoid concurrent use with strong CYP3A4 and P-gp inhibitors. If treating VTE, avoid use with strong CYP3A4 and P-gp inducers. Rivaroxaban: avoid concurrent use with strong CYP3A4 and P-gp inhibitors. Dabigatran: avoid combination with strong P-gp inducers and inhibitors. If concurrent use is unavoidable, monitor closely for efficacy/toxicity of both drugs.
Digoxin	Anti-cancer drugs can damage the lining of the intestine; affecting the absorption of digoxin.	Monitor digoxin serum levels; adjust digoxin dosage as appropriate.
Antiepileptics	Both altered antiepileptic and anti-cancer drug levels may occur, possibly leading to loss of efficacy or toxicity.	Where concurrent use of an enzyme-inducing antiepileptic cannot be avoided, monitor antiepileptic serum levels for toxicity, as well as seizure frequency for efficacy; adjust dosage as appropriate. Also monitor closely for efficacy of the anti-cancer therapy.
Antiplatelet agents and NSAIDs	Increased risk of bleeding due to treatment related thrombocytopenia.	Avoid or minimise combination. If combination deemed essential, (e.g. low dose aspirin for ischaemic heart disease) monitor for signs of bleeding.
Serotonergic drugs, including selective serotonin reuptake inhibitors (SSRIs e.g. paroxetine) and serotonin noradrenaline reuptake inhibitors (SNRIs e.g. venlafaxine)	Increased risk of serotonin syndrome with concurrent use of 5-HT3 receptor antagonists (e.g. palonosetron, ondansetron, granisetron, tropisetron, dolasetron, etc.)	Avoid combination. If combination is clinically warranted, monitor for signs and symptoms of serotonin syndrome (e.g. confusion, agitation, tachycardia, hyperreflexia). For more information link to TGA Medicines Safety Update
Vaccines	Diminished response to vaccines and increased risk of infection with live vaccines.	Live vaccines (e.g. BCG, MMR, zoster and varicella) are contraindicated in patients on immunosuppressive therapy. Use with caution in patients on non-immunosuppressive therapy. 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.

Day 1 (IV)

Approximate treatment time: 2 hours (initial); 1 hour (subsequent)

Handling of monoclonal antibodies and waste management

Safe administration

General patient assessment prior to each day of treatment.

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

Prime IV line(s).

Insert IV cannula or access TIVAD or CVAD.

Pre treatment medication

Administer premedication only if previous hypersensitivity reaction.

Treatment - Time out

Trastuzumab

- Trastuzumab is incompatible with glucose solutions. Ensure IV administration sets are flushed with sodium chloride 0.9% pre and post administration.
- Trastuzumab may be administered before or after chemotherapy.

Initial infusion - administer trastuzumab:

- via IV infusion over 90 minutes
- observe patient for fever and chills or other infusion-related symptoms
- flush with ~50 mL of sodium chloride 0.9%
- stop infusion at first sign of reaction:
  - if symptoms are mild and resolve when infusion is stopped, consider recommencing infusion after review by medical officer at a slower rate
  - for severe reactions seek medical assistance immediately and do not restart infusion
- educate the patient about the possibility of delayed infusion-related symptoms.

Subsequent infusions - administer trastuzumab:

- if no previous hypersensitivity reaction administer via IV infusion over 30 minutes
- observe patient for fever and chills or other infusion-related symptoms
- flush with ~50 mL of sodium chloride 0.9%
- stop infusion at first sign of reaction:
  - if symptoms are mild and resolve when infusion is stopped, consider recommencing infusion after review by medical officer at a slower rate.
  - for severe reactions seek medical assistance immediately and do not restart infusion
- educate the patient about the possibility of delayed infusion-related symptoms.

Remove IV cannula and/or deaccess TIVAD or CVAD.

Day 1 and 8 (PO)

This is an oral treatment

Safe handling and waste management

Safe administration

General patient assessment prior to each day of treatment.

Peripheral neuropathy assessment tool

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

Pre treatment medication

Verify antiemetics taken or administer as prescribed.

Chemotherapy - Time out

Vinorelbine

- administer orally ONCE a week on **day 1 and day 8 only**
- to be swallowed whole with a glass of water; do not break, crush or chew
- food does not affect absorption but it is advised patients take with a light snack to reduce G.I upset
- if the patient chews or sucks the capsule by mistake, they should rinse their mouth out with water or preferably sodium chloride 0.9%

Note: if a dose is forgotten or vomited, consult treating team

Continue safe handling precautions until 7 days after completion of drug(s)

Discharge information

Vinorelbine capsules

- Vinorelbine capsules with written instructions on how to take them.

Antiemetics

- Antiemetics as prescribed.

Laxatives

- Ensure patient has prophylactic laxatives.

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)	
Hypersensitivity reaction	Anaphylaxis and infusion related reactions can occur with this treatment. Read more about hypersensitivity reaction
Nausea and vomiting	Read more about prevention of treatment induced nausea and vomiting
Flu-like symptoms	
Headache	

Early (onset days to weeks)	
Neutropenia	Abnormally low levels of neutrophils in the blood. This increases the risk of infection. Any fever or suspicion of infection should be investigated immediately and managed aggressively. Read more about immediate management of neutropenic fever
Thrombocytopenia	A reduction in the normal levels of functional platelets, increasing the risk of abnormal bleeding. Read more about thrombocytopenia
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	
Fatigue	Read more about fatigue
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
Peripheral neuropathy	Typically symmetrical sensory neuropathy, affecting the fingers and toes, sometimes progressing to the hands and feet. It is associated with several classes of anti-cancer drugs. These include taxanes, platinum-based compounds, vinca alkaloids and some drugs used to treat multiple myeloma. Read more about peripheral neuropathy

Late (onset weeks to months)	
Anaemia	Abnormally low levels of red blood cells (RBCs) or haemoglobin in the blood. Read more about anaemia
Alopecia - partial	Hair thinning and/or patchy hair loss. 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
Pulmonary toxicity	Pulmonary toxicity may include damage to the lungs, airways, pleura and pulmonary circulation. Read more about pulmonary toxicity associated with anti-cancer drugs

Delayed (onset months to years)	
Cardiotoxicity	Cardiotoxicity is a well recognised complication of HER-2 directed agents (e.g. trastuzumab, trastuzumab emtansine, pertuzumab). Mechanistically distinct from anthracycline-induced cardiotoxicity, it typically manifests as an asymptomatic decrease in the left ventricular ejection fraction (LVEF) and less commonly as congestive heart failure (CHF). Read more about cardiac toxicity associated with HER-2 targeted agents

Evidence

There is evidence of synergism between vinorelbine and trastuzumab, in preclinical studies of several HER-2 over-expressing breast cancer cell lines.[1] Data for single agent vinorelbine efficacy in both the IV and oral setting is contained in a large array of phase II trials with comparable efficacies, first line PFS being 5.0 - 7.1 months for the oral formulation compared to 3.0 - 9.0 months for IV treatment.[2, 3, 4] Equivalent activity of oral and IV formulations has been reported in a randomised comparison in lung cancer patients[5] in keeping with the indirect comparative data from breast cancer studies.

Further to this, phase II trials in metastatic breast cancer have consistently demonstrated marked efficacy and encouraging tolerability for the trastuzumab - IV vinorelbine combination, which has achieved overall response rates (ORRs) ranging from 40–85%, complete response (CR) rates from 3–15%, partial response (PR) rates from 40–75% and PFS of 9–12 months, and good

tolerability. Patients receiving the trastuzumab-vinorelbine combination as first-line therapy typically had the highest ORRs (51–86%), but ORRs of 50–60% are also reported in patients who had received previous adjuvant chemotherapy.[6]

Considering comparison of IV vinorelbine with trastuzumab to other chemotherapy-based regimens, two prospective trials have evaluated trastuzumab with IV vinorelbine head-to head against other chemotherapy partners. The first-line phase III HERNATA (HERceptin plus NAvelbine or TAxotere) study reported equal efficacy with numerically superior time to progression and OS for vinorelbine.[7] The first-line phase III trial, the TRAstuzumab and VInorelbine Or TAxane (TRAVIOTA) study, again found comparable efficacy between trastuzumab and vinorelbine versus trastuzumab and the investigators' choice of taxane, again with numerically superior results in favour of vinorelbine: ORR 51% vs 40%; and median time to progression 8.5 vs 6.0 months.[8]

Clinical trial evidence for oral vinorelbine in combination with trastuzumab in HER-2 positive metastatic breast cancer comes from a number of single institution or national phase II trials and a retrospective analysis. The expert reference panel supported publication of this protocol on the basis of the information summarised below:

Source	Study & year published	Supports use	Is the dose and regimen consistent with the protocol?	Comments
Phase II trials	Chan et al 2013 [9]	**Yes**	**No**	Vinorelbine (PO) 60 mg/m^2 day 1 and 8, q21 days. Dose escalation to 80 mg/m^2 from cycle 2. Standard dose trastuzumab given weekly. Study also included capecitabine 1000 mg/m^2 BD on day 1 to 14
	Farhat et al. 2016 [10]	**Yes**	**No**	Vinorelbine (PO) 60 mg/m^2 day 1,8 and 15, q21 days. Dose escalation to 80 mg/m^2 from cycle 2. Standard dose trastuzumab three weekly or weekly
	Heinemann et al. 2011 [11]	**Yes**	**No**	Vinorelbine (IV) 25 mg/m^2 d1 and vinorelbine (PO) 60 mg/m^2 day 8, and 15, q21 days. Standard dose trastuzumab three weekly
	Bartsch et al. 2006 [12]	**Yes**	**Yes** (but no dose escalation)	-
Retrospective analysis	Bergen et al. 2014 [13]	**Yes**	**Yes** (but no dose escalation)	In this study trastuzumab could be given weekly or three weekly
Guidelines	**Date published/revised**	**Supports use**	**Is the dose and regiment consistent with the protocol**	**Comments**
NCCN	V 2. 2017[14]	-	-	NCCN only mentions combination of IV vinorelbine with trastuzumab
CCO	2016	-	-	Protocol is for IV vinorelbine with trastuzumab
BCCA	2016	-	-	Protocol is for IV vinorelbine with trastuzumab
ESMO	Cardoso et al. 2016[15]	-	-	Does not specify whether IV or oral vinorelbine

Efficacy

The efficacy of the oral formulation of vinorelbine with trastuzumab specifically, is shown for three published cohorts in the table

below.

Study	Type	N	Line	RR	PFS (months)	OS (months)
Farhat et al. 2016[10]	Phase II	26	First line	56%	6.7	27.9
Bartsch et al. 2006[12]	Phase II	21	Any	53%	10.0	NR
Bergen et al. 2014[13]	Retrospective analysis	40	First line	62%	9.0	59.0

A phase II study in 26 patients gave oral vinorelbine at 60 mg/m^2 on day 1, 8 and 15 for the first cycle, stepping up to 80 mg/m^2 after the first cycle. ORR was 56% including 12% CRs and clinical benefit rate of 88%. Median PFS was 6.7 months and median OS was 27.9 months.[10]

A second series of 21 patients gave 60 mg/m^2 without dose escalation and with vinorelbine only on days 1 and 8 of a 21 day cycle. ORR was a comparable 53% and median PFS was 10.0 months.[12]

The third cohort formed part of a study comparing the efficacies of vinorelbine or docetaxel in combination with trastuzumab. Similar results for ORR and PFS between the two arms were seen, but trastuzumab and oral vinorelbine was associated with a significantly greater median OS than trastuzumab and taxane therapy (59 vs 49 months; p=0.033). In addition, duration of brain metastasis-free survival was significantly greater in the oral vinorelbine group than the taxane group (69 vs 51 months; p=0.032).[13]

Kaplan-Meier estimates for Progression-free survival (Fig.1) and Overall survival (Fig.2)[13]

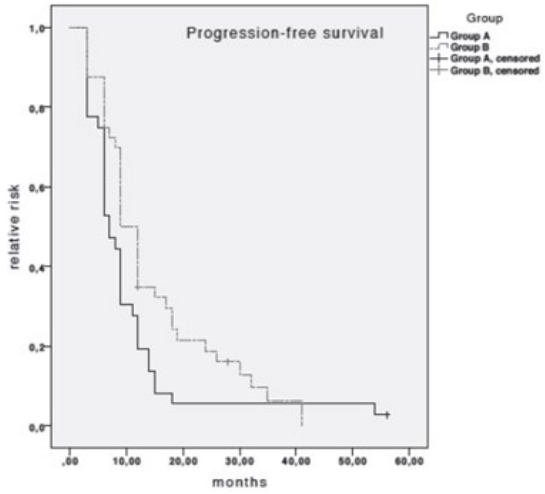


Fig. 1. Kaplan-Meier estimates for progression-free survival (PFS). Median PFS in patients receiving taxanes plus trastuzumab (group A) was 7 months (95% CI, 5.4–8.6) and 9 months (95% CI, 7.23–10.77) in patients receiving oral vinorelbine plus trastuzumab (log-rank test; n.s.).

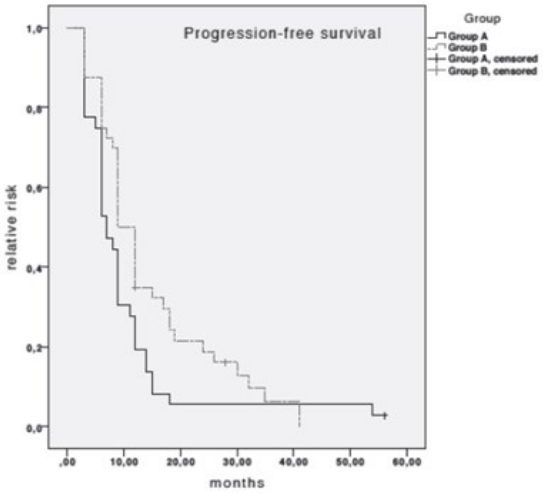


Fig. 2. Kaplan-Meier estimates for overall survival (OS). Median OS in patients receiving taxanes plus trastuzumab (group A) was 49 months (95% CI, 38.24–59.76) and 59 months (95% CI, 41.17–76.83) in patients receiving oral vinorelbine plus trastuzumab (log-rank test; p = 0.033).

Toxicity

Although the toxicity of oral vinorelbine is broadly comparable with the IV formulation some notable differences exist. This is best observed in the direct randomised comparison in NSC lung cancer.[5] Here both thrombocytopenia and grade 3-4 neutropenia were more common for the IV formulation. This was at the expense of more nausea and diarrhoea for oral vinorelbine in contrast to a higher rate of constipation with IV treatment.

Comparable toxicity profiles are seen for three studies of oral vinorelbine with IV trastuzumab.[10, 12, 13] No significant cardiac events are reported in any of these cohorts.

Comparison of oral and IV vinorelbine toxicities given as a single agent in NSCLC

Toxicity[5]	Oral vinorelbine		IV vinorelbine	
	Any grade	Grade 3/4	Any grade	Grade 3/4
Neutropenia	63	46	89	62
Thrombocytopenia	8	0	14	0

Toxicity[5]	Oral vinorelbine		IV vinorelbine	
	Any grade	Grade 3/4	Any grade	Grade 3/4
Nausea	83	11	46	0
Diarrhoea	40	3	16	0
Constipation	11	3	24	3
Neurosensory	11	0	14	0

This combination also proved more tolerable than docetaxel-based trastuzumab treatment with fewer patients in the oral vinorelbine than taxane group required dosage reductions because of treatment-related toxicity in the above mentioned retrospective comparison (15.0% vs 30.6%).[13] This is in keeping with the comparisons of IV vinorelbine to taxane-based therapy. In the HERNATA trial, significantly more treatment-related grade 3 to 4 events were seen with taxane than vinorelbine (81% vs 51%; p<0.0001).[7] This included febrile neutropenia (36.0% vs 10.1%), leucopenia (40.3% vs 21.0%), infection (25.1% vs 13.0%), fever (4.3% vs 0%), neuropathy (30.9% vs 3.6%), nail changes (7.9% vs 0.7%) and oedema (6.5% vs 0%) were reported with docetaxel compared with vinorelbine. Treatment discontinuation owing to toxicity was more frequent with docetaxel (20.1%) than with vinorelbine (6.5%). For the TRAVIOTA study, both treatment regimens were generally well tolerated, with similar rates of neurological and gastrointestinal toxicity.[8]

Finally, considering patient preference, and giving further support to the tolerability of oral vinorelbine, a study in lung cancer combined vinorelbine and carboplatin administered two cycles with oral then two cycles with IV vinorelbine or vice versa. 32 of 43 patients preferred the oral formulation citing less toxicity and greater convenience.[16]

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History

Version 4

Date	Summary of changes
04/05/2020	Biosimilar trastuzumab added to clinical information. Day 1 (IV) approximate treatment time changed to 2 hours (initial), 1 hour (subsequent). Version number changed to V.4.

Version 3

Date	Summary of changes
04/10/2019	Protocol reviewed at Medical Oncology Reference Committee meeting on 30/08/2019. Vinorelbine frequency updated to once a week in treatment schedule, administration and patient information. Missed dose cutoff changed to 6 weeks, cardiac dose modification added. Version number changed to V.3. Next review in 5 years.

Version 2

Date	Summary of changes
03/11/2017	New protocol taken to Medical Oncology Reference Committee meeting.
18/04/2018	Protocol approved and published on eviQ. Review protocol in 2 years
10/05/2018	Haematological dose modifications updated as per consensus of the expert clinician group. Version number changed to V.2.

First approved: 18 April 2018
Last reviewed: 30 August 2019
Review due: 31 December 2024

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/1627
07 Jun 2023

Patient information - Breast cancer metastatic - Trastuzumab three weekly and vinorelbine (oral)

Patient's name:

Your treatment

The treatment schedule below explains how the drugs for this treatment are given.

Trastuzumab and vinorelbine			
This treatment cycle is repeated every 21 days. Your doctor will advise you of the number of treatments you will have.			
Day	**Treatment**	**How it is given**	**How long it takes**
1	**Trastuzumab** *(tras-TOOZ-ue-mab)*	By a drip into a vein	About 2 hours for the first treatment. If no reactions, subsequent treatment may be given over a shorter amount of time e.g. 1 hour
1 and 8	**Vinorelbine** *(vi-NOR-el-been)*	Take orally ONCE a week on **day 1 and day 8 only**. Take with or after food. Swallow whole with a glass of water, do not break, crush or chew. Rinse your mouth with water after swallowing the capsule. The liquid content of the capsule is an irritant and may cause damage if in contact with skin, mucosa or eyes. Damaged capsules should not be swallowed. If you accidentally chew or suck the capsule you should rinse your mouth with water or salt water. If you forget to take a dose or vomit the capsule(s), contact your doctor or nurse for advice.	-

Vinorelbine capsules are available in two capsule strengths, 20 mg and 30 mg. It is important that you take the correct capsules and understand how to take them. Ask your doctor, nurse or pharmacist to complete the table below with the correct number of capsules for you:

Vinorelbine	Number of capsules
20 mg capsules	
30 mg capsules	

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 contact details

Emergency Department, or contact your doctor or nurse if you have any of the following at any time:	Ask your doctor or nurse from your treating team who to contact if you have a problem
• a temperature of 38ºC 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:

During your treatment immediately tell the doctor or nurse looking after you if you get any of the following problems:

- leaking from the area where the drugs are being given
- pain, stinging, swelling or redness in the area where the drugs are being given or at any injection sites
- a skin rash, itching, feeling short of breath, wheezing, fever, shivers, or feeling dizzy or unwell in any way (allergic reaction).

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.

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.
- **Laxatives:** you may be given some medication to prevent or treat constipation. Your doctor or nurse will tell you how and when to take the laxatives.

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)	
Allergic reaction	• Allergic reactions are uncommon but can be life threatening. • **If you feel unwell during the infusion or shortly after it, or:** ◦ **get a fever, shivers or shakes** ◦ **feel dizzy, faint, confused or anxious** ◦ **start wheezing or have difficulty breathing** ◦ **have a rash, itch or redness of the face** **<u>While you are in hospital:</u> Tell your doctor or nurse immediately.** **<u>After you leave:</u> Contact your doctor or nurse immediately, or go to the nearest hospital Emergency Department.**
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.**
Flu-like symptoms	• You may get: ◦ a fever ◦ chills or sweats ◦ muscle and joint pain ◦ a cough ◦ headaches. • Tell your doctor or nurse if you get any of the symptoms listed above. • **Tell your doctor or nurse immediately, or go to the nearest hospital Emergency Department if you have a temperature of 38°C or higher.**
Headache	• You can take paracetamol if you have a headache. • **Tell your doctor or nurse immediately, or go to the nearest hospital Emergency Department if you get a very bad headache that is not helped by pain medication.**

Early (onset days to weeks)

Infection risk (neutropenia)	• This treatment lowers the amount of white blood cells in your body. The type of white blood cells that help to fight infection are called neutrophils. Having low level of neutrophils is called neutropenia. If you have neutropenia, you are at greater risk of getting an infection. It also means that your body can't fight infections as well as usual. This is a serious side effect, and can be life threatening. • Wash your hands often. • Keep a thermometer at home and take your temperature regularly, and if you feel unwell. • Do your mouth care regularly. • Inspect your central line site (if you have one) daily for any redness, pus or swelling. • Limit contact with people who are sick. • Learn how to recognise the signs of infection. • Ask your doctor or nurse for eviQ patient information - Infection during cancer treatment. • **Tell your doctor or nurse immediately, or go to the nearest hospital Emergency Department if you get any of the following signs or symptoms:** ◦ **a temperature of 38°C or higher** ◦ **chills, shivers, sweats or shakes** ◦ **a sore throat or cough** ◦ **uncontrolled diarrhoea** ◦ **shortness of breath** ◦ **a fast heartbeat** ◦ **become unwell even without a temperature.**
Low platelets (thrombocytopenia)	• This treatment lowers the amount of platelets in your blood. Platelets help your blood to clot. When they are low, you are at an increased risk of bleeding and bruising. • Try not to bruise or cut yourself. • Avoid contact sport or vigorous exercise. • Clear your nose by blowing gently. • Avoid constipation. • Brush your teeth with a soft toothbrush. • Don't take aspirin, ibuprofen or other similar anti-inflammatory medications unless your doctor tells you to. • Tell your doctor or nurse if you have any bruising or bleeding. • **Tell your doctor or nurse immediately, or go to your nearest hospital Emergency Department if you have any uncontrolled bleeding.**
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.**

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.**
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.

Nerve damage (peripheral neuropathy)	• You may notice a change in the sensations in your hands and feet, including:
	  ◦ tingling or pins and needles
	  ◦ numbness or loss of feeling
	  ◦ pain.
	• You may find it difficult to do everyday activities, such as doing up buttons or picking up small objects.
	• Test water temperature with your elbow when bathing to avoid burns.
	• Use rubber gloves, pot holders and oven mitts in the kitchen.
	• Wear rubber shoes or boots when working in the garden or garage.
	• Keep rooms well lit and uncluttered.
	• Ask your doctor or nurse for eviQ patient information – Nerve problems during cancer treatment.
	• Tell your doctor or nurse if you get any of the symptoms listed above.

Late (onset weeks to months)	
Low red blood cells (anaemia)	• You may feel dizzy, light-headed, tired and appear more pale than usual. • Tell your doctor or nurse if you have any of these signs or symptoms. You might need a blood transfusion. • **Tell your doctor or nurse immediately, or go to the nearest hospital Emergency Department if you have any chest pain, trouble breathing, or feel like your heart is racing.**
Hair thinning	• Your hair may become dry and may break easily. • You may lose some of your hair. • Use a gentle shampoo and a soft hairbrush. • Take care with hair products like hairspray, hair dye, bleaches and perms. • Protect your scalp from the cold with a hat or scarf. • Protect your scalp from the sun with a hat and sunscreen of SPF 50 or higher. • Ask your doctor or nurse about the Look Good Feel Better program (www.lgfb.org.au)
Lung problems	• Lung problems are rare, but can be serious. They may occur throughout treatment or after the completion of treatment. • You may get: ◦ shortness of breath ◦ fever ◦ dry cough ◦ wheezing ◦ fast heartbeat ◦ chest pain. • Your doctor will monitor how well your lungs are working during your treatment. • **Tell your doctor or nurse immediately, or go to the nearest hospital Emergency Department if you have chest pain or become short of breath.**

Delayed (onset months to years)	
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

Chemotherapy safety

- Learn how to keep you and your family safe while you are having anticancer drugs.
- See our patient information sheet - Chemotherapy safety at home.

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 on 13 11 20 for cancer information and support.

Breast cancer information

- Australasian Lymphology Association – lymphoedema.org.au
- Australasian Menopause Society – menopause.org.au
- Breast Cancer Network Australia – bcna.org.au
- National Breast Cancer Foundation – nbcf.org.au
- YWCA Encore breast cancer exercise program – ywcaencore.org.au

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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