

Gastrointestinal stromal cell tumour (GIST) adjuvant imatinib

ID: 1222 v.4 Endorsed Essential Medicine List

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](#).

International Consensus Guideline for Anticancer Drug Dosing in Kidney Dysfunction (ADDIKD)

2022

[Click here](#)



Treatment schedule - Overview

Drug	Dose	Route
Imatinib	400 mg ONCE a day	PO

Continuous for up to 3 years

Drug status: Imatinib is [PBS authority](#).

Imatinib is available as **100 mg** and **400 mg** tablets

Cost: ~ \$450 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.](#)*

Continuous treatment		
Metoclopramide	10 mg (PO)	one tablet when necessary (maximum of 30 mg/24 hours, up to 5 days)
Imatinib	400 mg (PO)	ONCE a day with food

Continuous for up to 3 years

Indications and patient population

- Adjuvant primary gastrointestinal stromal tumour (GIST) at high risk of recurrence following recovery and within 3 months of surgery
 - High risk defined as:¹
 - primary GIST greater than 5 cm with a mitotic count of greater than 5/50 high power fields (HPF), or

- primary GIST greater than 10 cm with any mitotic rate, or
- primary GIST with a mitotic count of greater than 10/50 HPF.

Clinical information

Caution with oral anti-cancer drugs	<p>Select links for information on the safe prescribing, dispensing and administration of orally administered anti-cancer drugs.</p> <p>Read more about the COSA guidelines and oral anti-cancer therapy</p>
Emetogenicity moderate to high	<p>Routine antiemetic premedication may not be required for continuous dosing of some moderate to high emetic risk oral drugs. Consider if patient develops significant nausea or vomiting and reassess routinely. In clinical practice, the administration of oral metoclopramide may be sufficient to control nausea.</p> <p>Read more about preventing anti-cancer therapy induced nausea and vomiting</p>
Cardiac toxicity	<p>Imatinib has been associated with cardiac complications (i.e. left ventricular ejection fraction (LVEF) dysfunction and heart failure). For patients with pre existing cardiac disease, measure LVEF at baseline and as clinically indicated. Monitor patient for signs and symptoms of congestive heart failure.</p> <p>In patients with hypereosinophilic syndrome and cardiac involvement, cardiogenic shock and left ventricular dysfunction have been associated with initiation of imatinib. The condition was reported to be reversible with the administration of systemic steroids, circulatory support measures, and temporary withholding of imatinib.</p> <p>Read more about cardiac toxicity associated with anti-cancer drugs</p>
Fluid retention/oedema	<p>Patients may experience an increased incidence of fluid retention and periorbital oedema. Monitor for signs and symptoms of fluid retention and if severe fluid retention occurs treatment should be withheld until resolved. Periorbital oedema is a common side effect of imatinib which is usually mild to moderate and managed conservatively.</p>
Hypothyroidism	<p>Hypothyroidism has been reported in thyroidectomy patients undergoing thyroxine replacement during treatment with imatinib.</p> <p>Monitor for signs and symptoms of hypothyroidism in thyroidectomy patients.</p>
Diarrhoea	<p>Antidiarrhoeals (e.g. loperamide) are usually prescribed with this treatment.</p> <p>Read more about treatment induced diarrhoea</p>
Blood tests	<p>FBC, EUC, LFTs and TSH at baseline. Repeat FBC and LFTs monthly or as clinically indicated. TSH and INR as clinically indicated.</p>
Hepatitis B screening and prophylaxis	<p>Routine screening for HBsAg and anti-HBc is recommended prior to initiation of treatment. Prophylaxis should be determined according to individual institutional policy.</p> <p>Read more about hepatitis B screening and prophylaxis in cancer patients requiring cytotoxic and/or immunosuppressive therapy</p>
Vaccinations	<p>Live vaccines are contraindicated in cancer patients receiving immunosuppressive therapy and/or who have poorly controlled malignant disease.</p> <p>Refer to the recommended schedule of vaccination for immunocompromised patients, as outlined in the Australian Immunisation Handbook.</p> <p>Read more about COVID-19 vaccines and cancer.</p>

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.

Haematological toxicity

ANC x 10⁹/L (pre-treatment blood test)

0.5 to less than 1.0	Delay treatment until recovery
less than 0.5	Delay treatment until recovery and consider reducing imatinib by 25% for subsequent cycles
Febrile neutropenia or previous delay for myelosuppression	Delay treatment until recovery and consider reducing imatinib by 25% for subsequent cycles

Platelets x 10⁹/L (pre-treatment blood test)

75 to less than 100	Refer to local institutional guidelines; it is the view of the expert clinicians that treatment should continue if patient is clinically well.
50 to less than 75	Delay treatment until recovery
Previous delay for myelosuppression	Delay treatment until recovery and consider reducing imatinib by 25% for subsequent cycles

Renal impairment

No dose modification necessary; use with caution in patients with severe renal impairment

Hepatic impairment

Hepatic dysfunction

Hepatic impairment	
Mild	No dose modification necessary
Moderate	No dose modification necessary
Severe	Reduce imatinib by 25%

Diarrhoea	
Grade 3	Delay treatment until toxicity has resolved to Grade 2 or less and reduce imatinib by 25% for subsequent cycles
Grade 4	Withhold treatment

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](#)

Imatinib		
	Interaction	Clinical management
Gemfibrozil	Increased toxicity OR reduced efficacy of imatinib possible due to inhibition of CYP2C8-mediated metabolism of imatinib OR reduced imatinib absorption and impaired CYP2C8-mediated conversion of imatinib to its active metabolite by gemfibrozil	Avoid combination Caution advised if other CYP2C8 inhibitors are to be used (e.g. trimethoprim, glitazones, montelukast etc.)
CYP3A4 inhibitors (e.g. aprepitant, azole antifungals, clarithromycin, erythromycin, grapefruit juice, ritonavir etc.)	Increased toxicity of imatinib possible due to reduced clearance	Monitor for imatinib toxicity
CYP3A4 inducers (e.g. carbamazepine, phenytoin, phenobarbitone, rifampicin, St John's wort etc.)	Reduced efficacy of imatinib possible due to increased clearance	Avoid combination or monitor for decreased clinical response to imatinib
Drugs metabolised by CYP3A4 (e.g. atorvastatin, benzodiazepines, calcineurin inhibitors, clarithromycin, dihydroergotamine, simvastatin, etc.)	Increased effect/toxicity of these drugs possible due to inhibition of CYP3A4 by imatinib resulting in reduced clearance	Avoid combination or monitor for increased effect/toxicity of interacting drugs
Levothyroxine (thyroxine, Oroxine®, Eutroxig®)	Reduced efficacy of thyroid replacement therapy resulting in hypothyroid symptoms; possibly due to induction of levothyroxine metabolism by imatinib and subsequent TSH elevation	Monitor closely for signs and symptoms of hypothyroidism, serum thyroxine and TSH levels; increase levothyroxine dose if needed
Paracetamol	Risk of liver toxicity due to inhibition of metabolism of paracetamol by imatinib	Avoid combination or monitor liver function closely

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	<p>Interaction with both CYP3A4 and P-gp inhibitors /inducers.</p> <p>DOAC and anti-cancer drug levels may both be altered, possibly leading to loss of efficacy or toxicity (i.e. increased bleeding).</p>	<p>Apixaban: avoid concurrent use with strong CYP3A4 and P-gp inhibitors. If treating VTE, avoid use with strong CYP3A4 and P-gp inducers.</p> <p>Rivaroxaban: avoid concurrent use with strong CYP3A4 and P-gp inhibitors.</p> <p>Dabigatran: avoid combination with strong P-gp inducers and inhibitors.</p> <p>If concurrent use is unavoidable, monitor closely for efficacy/toxicity of both drugs.</p>
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-HT ₃ receptor antagonists (e.g. palonosetron, ondansetron, granisetron, tropisetron, dolasetron, etc.)	<p>Avoid combination.</p> <p>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</p>
Vaccines	Diminished response to vaccines and increased risk of infection with live vaccines.	<p>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.</p> <p>For more information; refer to the recommended schedule of vaccination for cancer patients, as outlined in the Australian Immunisation Handbook</p>

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

Administration

This is a continuous 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

Imatinib

- administer orally ONCE a day
- to be swallowed whole; do not break, crush or chew
- to be taken with a large glass of water and food to minimise GI irritation
- if difficulty is experienced swallowing the tablet advise patient to:
 - place tablets in a glass of water or apple juice (using ~50 mL for 100 mg tablet, ~200 mL for 400 mg tablet)
 - stir until tablet dissolves
 - drink straight away
 - rinse glass and drink this too

Note: missed doses should not be replaced; 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

Imatinib tablets

- With written instructions on how to take them .
- Advise patients to weigh themselves regularly and to report any increase by more than 1 to 2 kg in a week.

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
Headache	Mild headache is common with this treatment.

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
Diarrhoea	Read more about treatment induced diarrhoea
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
Fluid retention and oedema	An excess amount of fluid around the cells, tissues or serous cavities of the body, leading to swelling.
Abdominal pain	Dull ache, cramping or sharp pains are common with some anti-cancer drugs. These are caused by either increased or decreased gastrointestinal motility and can be associated with diarrhoea or constipation.
Skin rash	Anti-cancer drugs can cause a number of changes in the skin with maculo-papular rash the most common type of drug-induced skin reaction. Read more about skin rash
Photosensitivity	Increased sensitivity to ultraviolet (UV) light resulting in an exaggerated sunburn-like reaction accompanied by stinging sensations and urticaria.
Haemorrhage	
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

Late (onset weeks to months)	
Anaemia	Abnormally low levels of red blood cells (RBCs) or haemoglobin in the blood. Read more about anaemia
Periorbital oedema	Accumulation of fluid in the tissue surrounding the eye sockets (orbits).

Evidence

The evidence supporting this protocol is provided from a phase III, double blind, randomised placebo controlled multicentre trial in 713 patients who had complete gross resection of a primary gastrointestinal stromal tumour at least 3cm in size and positive for the KIT protein by immuno-histochemistry.²

Between July 1 2002 and April 18 2007 359 were randomised to receive imatinib 400mg orally daily and 354 were randomised to receive placebo.

The primary end-point was recurrence free survival after one year from surgery. The original primary end-point was overall survival over 3.8 years, which was changed to recurrence free survival 6 months before the first planned efficacy interim analysis after a revision of the putative event rate. Accrual was stopped early because the trial crossed the interim analysis efficacy boundary for recurrence free survival.

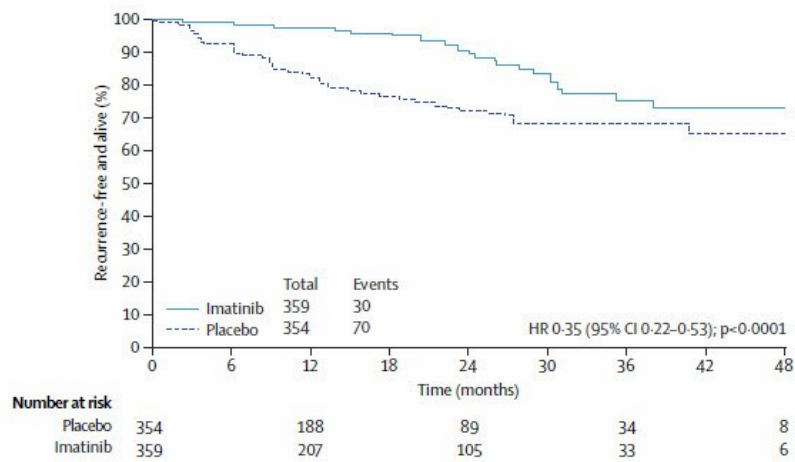
One vs three years of imatinib was studied in a phase III RCT involving 400 patients. 5 year recurrence-free survival (65.6% vs 47.9% ; HR=0.46, 95% CI 0.32-0.65; p<0.001) and overall survival (92.0% vs 81.7%; HR=0.45, 95% CI 0.22-0.89; p=0.02) were longer in the 3

year group.³

Efficacy

After a median follow-up for surviving patients of 19.7 months (range 0–56.4 months), the estimated 1-year recurrence-free survival was 98% (95% CI 96–100) in the imatinib group versus 83% (78–88) in the placebo group (HR 0.35; CI 95% (0.22–0.53; p<0.0001).

Recurrence-free survival²



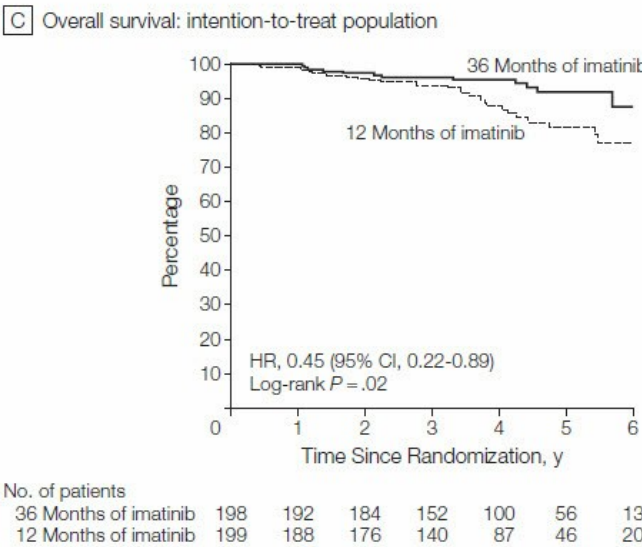
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There was no difference in overall survival (HR 0.66; CI 95% 0.22-2.03). Five (1%) patients died in the imatinib group, all from causes unrelated to gastrointestinal stromal tumour. Eight (2%) deaths arose in the placebo group, five of which were related to the tumour.

Although the trial was not designed to assess patient subsets, analysis of the effect of tumour size showed recurrence-free survival was longer in the imatinib group than in the placebo group in each size category. Size ≥ 3 cm - 6 cm HR 0.23 (CI 95% 0.07-0.79, p=0.011), ≥ 6 cm - <10 cm HR 0.5 (CI 95% 0.25-0.98, p=0.041), ≥ 10 cm HR 0.29 (CI 95% 0.16-0.55).

Quality of life (QOL) data was not collected in the key evidence.

Overall survival (36 vs 12 months imatinib) : intention-to-treat population³



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Toxicity

Grade 1 and 2 events were common and mostly involved gastrointestinal effects (mild diarrhoea, nausea, and flatulence), headache, rash, periorbital or peripheral oedema, fatigue, or myalgias or arthralgias.

Grade 3 or 4 events occurred in 63 (18%) patients in the placebo group and 104 (31%) in the imatinib group.²

Toxicity²

	Placebo (n=345)				Imatinib (n=337)			
	Grade 1	Grade 2	Grade 3	Grade 4	Grade 1	Grade 2	Grade 3	Grade 4
Neutropenia	11 (3%)	8 (2%)	3 (<1%)	1 (<1%)	23 (6%)	26 (7%)	7 (2%)	5 (1%)
Fatigue	134 (39%)	51 (15%)	4 (1%)	0	117 (33%)	20 (5%)	5 (1%)	2 (<1%)
Dermatitis	75 (22%)	32 (9%)	0	0	54 (15%)	15 (4%)	11 (3%)	0
Abdominal pain	64 (18%)	10 (2%)	6 (1%)	0	61 (17%)	25 (7%)	12 (3%)	0
Nausea	144 (42%)	27 (8%)	4 (1%)	0	78 (22%)	14 (4%)	8 (2%)	0
Vomiting	60 (17%)	18 (5%)	2 (<1%)	0	37 (10%)	9 (2%)	8 (2%)	0
Diarrhoea	147 (43%)	42 (12%)	5 (1%)	0	79 (22%)	17 (4%)	10 (2%)	0
ALT	42 (12%)	6 (1%)	0	0	38 (11%)	9 (2%)	7 (2%)	2 (<1%)
AST	27 (7%)	3 (<1%)	0	0	31 (9%)	4 (1%)	4 (1%)	3 (<1%)
Oedema	96 (28%)	5 (1%)	1 (<1%)	0	220 (65%)	32 (9%)	7 (2%)	0
Hyperglycaemia	34 (9%)	6 (1%)	7 (2%)	0	27 (8%)	9 (2%)	2 (<1%)	0
Hypokalaemia	9 (2%)	1 (<1%)	3 (<1%)	0	28 (8%)	0	4 (1%)	0
Syncope	1 (<1%)	0	0	0	1 (<1%)	0	4 (1%)	0
Dyspnoea	16 (4%)	5 (1%)	2 (<1%)	0	13 (3%)	1 (1%)	4 (1%)	0

Data are number (%). ALT=alanine aminotransferase. AST=aspartate aminotransferase.

© Lancet 2009

References

- 1 Zalcborg, J.R., J. Desai, B. Mann, et al. 2008. "Consensus approaches to best practice management of gastrointestinal stromal tumors." *Asia-Pacific Journal of Clinical Oncology* 4(4):188-198
- 2 Dematteo, R. P., K. V. Ballman, C. R. Antonescu, et al. 2009. "Adjuvant imatinib mesylate after resection of localised, primary gastrointestinal stromal tumour: a randomised, double-blind, placebo-controlled trial." *Lancet* 373(9669):1097-1104.
- 3 Joensuu, H., M. Eriksson, K. Sundby Hall, et al. 2012. "One vs three years of adjuvant imatinib for operable gastrointestinal stromal tumor: a randomized trial." *JAMA* 307(12):1265-1272.

History

Version 4

Date	Summary of changes
25/11/2011	New protocol taken to Medical Oncology Reference Committee meeting.
17/01/2012	Approved and published on eviQ.
13/09/2013	Protocol reviewed at Medical Oncology Reference Committee meeting. Treatment duration changed to 3 years as per updated published data. Next review in 1 year.
01/12/2013	PBS indication updated.
01/04/2015	Protocol reviewed by committee via email survey. No changes and next review in 2 years.
10/11/2016	The following change made post Medical Oncology Reference Committee meeting held on 21 October 2016: link to AGITG and ANZCTR added.
31/05/2017	Transferred to new eviQ website. Version number changed to V.3.
16/02/2018	Protocol reviewed at Medical Oncology Reference Committee Meeting, no changes. Review in 2 years.
10/05/2018	Haematological dose modifications updated as per consensus of the expert clinician group. Version number changed to V.4.
25/09/2020	Protocol reviewed electronically by the Medical Oncology Reference committee. Nil changes. Next review in 2 years.

Date	Summary of changes
21/06/2021	Changed antiemetic clinical information block to moderate to high, to align with new categories. See ID 7 Prevention of anti-cancer therapy induced nausea and vomiting (AINV) v5.

The information contained in this protocol is based on the highest level of available evidence and consensus of the eviQ reference committee regarding their views of currently accepted approaches to treatment. Any clinician (medical oncologist, haematologist, radiation oncologist, medical physicist, radiation therapist, pharmacist or nurse) seeking to apply or consult this protocol is expected to use independent clinical judgement in the context of individual clinical circumstances to determine any patient's care or treatment. While eviQ endeavours to link to reliable sources that provide accurate information, eviQ and the Cancer Institute NSW do not endorse or accept responsibility for the accuracy, currency, reliability or correctness of the content of linked external information sources. Use is subject to eviQ's disclaimer available at www.eviQ.org.au

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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/1222>

13 Jul 2023

Patient information - Gastrointestinal stromal cell tumour (GIST) adjuvant - Imatinib

Patient's name:


Your treatment

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

Imatinib		
Imatinib is taken once a day for up to 3 years. Your doctor will advise you how long to take the treatment for.		
Day	Treatment	How it is given
Continuous	Imatinib (<i>im-AT-in-ib</i>)	Take orally ONCE a day with food and a large glass of water. Tablet(s) should be swallowed whole. If you are unable to swallow the tablet(s) whole they may be dissolved in a glass of water or apple juice and the solution swallowed (see directions in <i>Other information about your treatment</i>). If you forget to take a tablet or vomit a tablet, take your normal dose the next time it is due. Do not take an extra 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
<ul style="list-style-type: none">• 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.

Blood tests and monitoring

You will need to have a blood test before you start treatment and regularly throughout your treatment. Your doctor or nurse will tell you when to have these blood tests. Tell your doctor if you are taking warfarin. Tell your doctor if you are on an anticoagulant (medication used to treat or prevent blood clots) e.g. warfarin. You may need to have additional 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.

Instructions for dissolving imatinib tablets:

- Imatinib tablets should not be crushed, cut or chewed. For patients with swallowing difficulties imatinib tablets can be dissolved.
- You (or whoever is dissolving the tablets) should wear disposable gloves and try to minimise touching the tablets.
- Place the imatinib tablet(s) in a glass of water or apple juice (using approximately 50 mL for 100 mg tablet and approximately 200mL for 400mg tablet).
- Stir until tablet dissolves.
- Drink straight away.
- Rinse glass and drink this too.

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	<ul style="list-style-type: none">• 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.
Headache	<ul style="list-style-type: none">• Talk to your doctor or nurse about what you can take 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)	<ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> ◦ 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)	<ul style="list-style-type: none"> • 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.
Diarrhoea	<ul style="list-style-type: none"> • 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.
Tiredness and lack of energy (fatigue)	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> 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.
Extra fluid in the body (fluid retention)	<ul style="list-style-type: none"> You may gain weight over a short amount of time. Your hands and feet may become swollen, appear red or feel hot and uncomfortable. Wear loose clothing and shoes that are not too tight. Try not to stand up or walk around too much at one time. If your ankles or legs get swollen, try raising them. Make sure that any cuts or areas of broken skin are treated as soon as possible. Tell your doctor or nurse as soon as possible if you get any of the symptoms listed above or gain 1 to 2 kg in a week. Tell your doctor or nurse immediately or go to the nearest hospital Emergency Department if you become short of breath.
Stomach pain	<ul style="list-style-type: none"> You may get: <ul style="list-style-type: none"> dull aches cramping or pain bloating or flatulence (gas). Tell your doctor or nurse immediately, or go to the nearest hospital Emergency Department if you have stomach pain that you are unable to control.
Skin rash	<ul style="list-style-type: none"> You may get a red, bumpy rash and dry, itchy skin. Moisturise your skin with a gentle non-perfumed moisturising cream like sorbolene or aqueous cream. Do not scratch your skin. Protect your skin from the sun by wearing sun-protective clothing, a wide-brimmed hat, sunglasses and sunscreen of SPF 50 or higher. Talk to your doctor or nurse about other ways to manage your skin rash.
Skin that is more sensitive to the sun (photosensitivity)	<ul style="list-style-type: none"> After being out in the sun you may develop a rash like a bad sunburn. Your skin may become red, swollen and blistered. Avoid direct sunlight. Protect your skin from the sun by wearing sun-protective clothing, a wide-brimmed hat, sunglasses and a sunscreen of SPF 50 or higher. Tell your doctor or nurse if you get any of the symptoms listed above.
Bleeding (haemorrhage)	<ul style="list-style-type: none"> Tell your doctor or nurse if you have a wound that does not heal. Tell your doctor or nurse immediately, or go to the nearest hospital Emergency Department if you get any of the following signs or symptoms: <ul style="list-style-type: none"> unusual bleeding or bruising bright red or black, tarry bowel motions (stools, poo) stomach pain slurred speech shortness of breath a fast heartbeat.
Heart problems	<ul style="list-style-type: none"> You may get: <ul style="list-style-type: none"> 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.

Late (onset weeks to months)	
Low red blood cells (anaemia)	<ul style="list-style-type: none"> 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.
Swelling around the eyes	<ul style="list-style-type: none"> You may get: <ul style="list-style-type: none"> swelling or heaviness around your eyes irritated eyes eye discharge changes to your vision. Tell your doctor or nurse if you get any of these symptoms.

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.
- Some pain medications, e.g. paracetamol, can interact with your treatment. Check with your doctor or pharmacist before taking any medications for a headache or mild pain.
- 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

Additional notes:

This document is a guide only and cannot cover every possible situation. The health professionals caring for you should always consider your individual situation when making decisions about your care. Contact your cancer clinic staff or doctor if you have any questions or concerns about your treatment, or you are having problems coping with side effects. While eviQ endeavours to link to reliable sources that provide accurate information, eviQ and the Cancer Institute NSW do not endorse or accept responsibility for the accuracy, currency, reliability or correctness of the content of linked external information sources. Use of this document is subject to eviQ's disclaimer available at www.eviQ.org.au

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