Renal cell metastatic pAZOPanib

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.

Treatment schedule - Overview

<table>
<thead>
<tr>
<th>Drug</th>
<th>Dose</th>
<th>Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>pAZOPanib</td>
<td>800 mg ONCE a day</td>
<td>PO</td>
</tr>
</tbody>
</table>

Continuous until disease progression or unacceptable toxicity

Drug status: Pazopanib is PBS authority

Pazopanib is available as 200mg and 400mg tablets

Cost: ~ $4,480 per month

Treatment schedule - Detail

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

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

Continuous treatment

<table>
<thead>
<tr>
<th>Drug</th>
<th>Dose</th>
<th>Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>pAZOPanib</td>
<td>800 mg (PO)</td>
<td>ONCE a day on an empty stomach (one hour before food or two hours after food). Swallow whole with a glass of water.</td>
</tr>
</tbody>
</table>

Indications and patient population

Indications:

- advanced or metastatic clear cell renal cell carcinoma (RCC)
  - initial treatment and/or for patients unable to tolerate sunitinib
Caution/Exclusion:
- severe hepatic impairment (total bilirubin greater than 3 x ULN regardless of any level of ALT); pazopanib is not recommended in these patients as there is insufficient data.

## Clinical information

<table>
<thead>
<tr>
<th>Clinical Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caution with oral anti-cancer drugs</td>
<td>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.</td>
</tr>
<tr>
<td>Emetogenicity minimal or low</td>
<td>No routine prophylaxis required. If patients experience nausea and/or vomiting, consider using the low emetogenic risk regimen. Read more about preventing anti-cancer therapy induced nausea and vomiting.</td>
</tr>
<tr>
<td>Cardiac toxicity</td>
<td>Tyrosine kinase inhibitors have been associated with cardiac complications of varying degrees and severity. Patients, especially those with pre-existing cardiovascular disease, should have a baseline cardiac assessment including an electrocardiogram (ECG) and biochemistry and be closely monitored; consider an echocardiogram (ECHO) as clinically indicated. Cardiac assessment should then be repeated as clinically indicated or when starting new medication which affects the QT interval. Read more about cardiac toxicity associated with anti-cancer drugs.</td>
</tr>
<tr>
<td>ECG abnormalities</td>
<td>Pazopanib can cause QTc interval prolongation and torsades de pointes. Baseline and periodic electrocardiogram (ECG) monitoring and maintenance of electrolytes (calcium, magnesium, potassium) within normal range is recommended. Pazopanib should be used with caution in patients at risk of QTc prolongation (ie. history of QTc interval prolongation, concurrent medications prolonging QTc interval or pre-existing cardiac disease). Read more about drugs that may prolong QTc interval at crediblemeds.org (registration required).</td>
</tr>
<tr>
<td>Haemorrhage</td>
<td>Significant haemorrhagic events have occurred with this treatment. Use with caution in patients with risk of haemorrhage (i.e. CNS metastases, coagulopathy, concurrent anticoagulant or antiplatelet medications etc.)</td>
</tr>
<tr>
<td>Thromboembolism</td>
<td>Both arterial and venous thromboembolic events have been observed in patients with this treatment. Therefore, use with caution in patients at increased risk or with a history of thrombotic events (i.e., cerebrovascular and cardiovascular disease)</td>
</tr>
<tr>
<td>Gastrointestinal perforation</td>
<td>Serious cases of gastrointestinal (GI) perforation have been reported with this treatment. Use with caution in patients at risk of GI perforation. Patients should be monitored for signs and symptoms of GI perforation.</td>
</tr>
<tr>
<td>Hepatotoxicity</td>
<td>Severe hepatotoxicity (including fatal outcomes) has been observed with this treatment. Onset of hepatic dysfunction typically occurs within 18 weeks of starting pazopanib. Monitor for abnormal liver function tests (LFTs), jaundice and tiredness. Refer to blood tests and dose modification sections for specific recommendations.</td>
</tr>
<tr>
<td>Hypertension</td>
<td>Pre-existing hypertension should be adequately controlled prior to commencing treatment. Baseline blood pressure monitoring and repeated weekly for the first 6 weeks then regularly throughout treatment. In severe or uncontrolled hypertension, treatment should be withheld until hypertension is controlled. Dose modification or permanent discontinuation may be necessary - refer to dose modification section for specific recommendations.</td>
</tr>
</tbody>
</table>
Proteinuria

Patients with a history of diabetes, high blood pressure and kidney disease may be at increased risk of developing proteinuria. Signs of proteinuria include swelling of the feet or the whole body. Baseline and periodic urinalyses are recommended as clinically indicated.

Read more about proteinuria

Hypothyroidism

Thyroid dysfunction in particular hypothyroidism may occur with this treatment. Monitor for signs and symptoms of thyroid dysfunction and manage as clinically appropriate.

Reversible posterior leukoencephalopathy syndrome (RPLS)

Reversible posterior leukoencephalopathy syndrome (RPLS) has been reported in patients receiving this treatment and may be fatal. Discontinue drug in patients developing RPLS.

Read more about reversible posterior leukoencephalopathy syndrome (RPLS)

Wound healing

Some suggest (Bose et al. 2010− see link to abstract) that antiangiogenic tyrosine kinase inhibitors (TKIs) be interrupted for at least one week (48 hours for agents with short half life) before surgery and not re-initiated until adequate wound healing has occurred. At many institutions, therapy with these agents is held for four weeks after major surgery and for at least two weeks after minor surgery, although there are no prospective data validating this approach. The decision to resume therapy following a major surgical intervention should be based upon clinical judgement of recovery from surgery.

Read more about “Vascular endothelial growth factor targeted therapy in the perioperative setting: implications for patient care”, Bose et al 2010

Diarrhoea

Antidiarrhoeals (e.g. loperamide) are usually prescribed with this treatment.

Read more about treatment induced diarrhoea

Hand-foot syndrome

Hand-foot syndrome (palmar-plantar erythrodysaesthesia) and rash are common adverse effects with this treatment which generally appear during the first 6 weeks of therapy.

Read more about hand foot syndrome or palmar plantar erythrodysaesthesia (PPE)

Blood tests

FBC, EUC, LFTs and TFTs at baseline, repeat FBC and EUC at week 2 then monitor monthly. Repeat LFTs at weeks 3, 5, 7 and 9, then at month 3 and 4. Periodic monitoring of LFTs should continue after month 4. Repeat TFTs every 8 to 12 weeks.

Hepatitis B screening and prophylaxis

The requirement for routine screening for HBsAg and anti-HBc for patients receiving this treatment is unknown. Clinical judgement and individual patient situations should be taken into consideration.

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.


Note:
- the following dose modification recommendations have been adapted from the study by Sternberg and by consensus of the reference committee.

<table>
<thead>
<tr>
<th>Haematological toxicity</th>
<th>ANC x 10^9/L (pre-treatment blood test)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5 to less than 1.0</td>
<td>Delay treatment until recovery to greater than 1.0 and restart pazopanib as follows: 1st occurrence: No dose reduction 2nd occurrence: Restart pazopanib at 600 mg ONCE daily 3rd occurrence: Restart pazopanib at 400 mg ONCE daily 4th occurrence: Cease pazopanib</td>
</tr>
<tr>
<td>less than 0.5</td>
<td>Delay treatment until recovery to greater than 1.0 and restart pazopanib as follows: 1st occurrence: Restart pazopanib at 600 mg ONCE daily 2nd occurrence: Restart pazopanib at 400 mg ONCE daily 3rd occurrence: Cease pazopanib</td>
</tr>
<tr>
<td>Febrile neutropenia</td>
<td>Delay treatment until recovery to greater than 1.0 and restart pazopanib as follows: 1st occurrence: Restart pazopanib at 600 mg ONCE daily 2nd occurrence: Restart pazopanib at 400 mg ONCE daily 3rd occurrence: Cease pazopanib</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Platelets x 10^9/L (pre-treatment blood test)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 to less than 100</td>
</tr>
<tr>
<td>less than 50</td>
</tr>
</tbody>
</table>

Renal impairment

No dose modifications necessary

Hepatic impairment

Pre-existing hepatic dysfunction

<table>
<thead>
<tr>
<th>Mild</th>
<th>No dose modifications necessary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderate</td>
<td>Start pazopanib at 200 mg ONCE daily</td>
</tr>
<tr>
<td>Severe</td>
<td>Pazopanib not recommended as it has not been studied in patients with severe hepatic impairment</td>
</tr>
</tbody>
</table>

Note, with pazopanib induced hepatotoxicity:
- exclude other causes of hepatotoxicity
- monitor LFTs weekly until ALT/AST 3.0 x ULN or less.

### Pazopanib induced hepatotoxicity

| Condition Description | Treatment
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ALT/AST between 3.0 x ULN and 8.0 x ULN, without bilirubin elevation</td>
<td>Continue treatment with pazopanib at the same dose</td>
</tr>
<tr>
<td>ALT greater than 8.0 x ULN, without bilirubin elevation</td>
<td>Delay treatment until ALT/AST 3.0 x ULN or less and restart pazopanib as follows: 1st occurrence: Restart pazopanib at 400mg ONCE daily 2nd occurrence: If ALT/AST greater than 3.0 x ULN recurs, cease pazopanib</td>
</tr>
<tr>
<td>ALT/AST greater than 3.0 x ULN with bilirubin 2.0 x ULN or greater</td>
<td>Cease pazopanib</td>
</tr>
<tr>
<td>Isolated total bilirubin elevation without concurrent ALT increase</td>
<td>Perform bilirubin fractionation: If conjugated bilirubin 35% or less, continue treatment with pazopanib at the same dose If conjugated bilirubin greater than 35%, further investigation is required</td>
</tr>
</tbody>
</table>

### Diarrhoea

| Grade | Treatment
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinically significant Grade 2 or Grade 3</td>
<td>Delay treatment until toxicity has resolved to Grade 1 or less and restart pazopanib as follows: 1st occurrence: Restart pazopanib at 600 mg ONCE daily 2nd occurrence: Restart pazopanib at 400 mg ONCE daily 3rd occurrence: Cease pazopanib</td>
</tr>
<tr>
<td>Grade 4</td>
<td>Cease pazopanib</td>
</tr>
</tbody>
</table>

### Hand foot syndrome (link to Hand foot syndrome (Palmar-plantar erythrodysesthesia))

| Grade | Treatment
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 2</td>
<td>Delay treatment until toxicity has resolved to Grade 1 or less and restart pazopanib as follows: 1st occurrence: No dose reduction 2nd occurrence: Restart pazopanib at 600 mg ONCE daily 3rd occurrence: Restart pazopanib at 400 mg ONCE daily 4th occurrence: Cease pazopanib</td>
</tr>
<tr>
<td>Grade 3</td>
<td>Delay treatment until toxicity has resolved to Grade 1 or less and restart pazopanib as follows: 1st occurrence: Restart pazopanib at 600 mg ONCE daily 2nd occurrence: Restart pazopanib at 400 mg ONCE daily 3rd occurrence: Cease pazopanib</td>
</tr>
</tbody>
</table>

### Cardiac toxicity

| Condition Description | Treatment
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Asymptomatic decline in LVEF * (LVEF less than 50% or greater than 20% below baseline)</td>
<td>Delay treatment until toxicity has resolved and restart pazopanib as follows: 1st occurrence: Restart pazopanib at 600 mg ONCE daily 2nd occurrence: Restart pazopanib at 400 mg ONCE daily 3rd occurrence: Cease pazopanib</td>
</tr>
<tr>
<td>Symptomatic decline in LVEF</td>
<td>Cease pazopanib</td>
</tr>
</tbody>
</table>

* Left Ventricular Ejection Fraction.

### Hypertension

Standard antihypertensive therapy should be commenced and/or adjusted to control BP (Blood Pressure)

#### Asymptomatic

| Condition Description | Treatment
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistent BP between 150/90 and 170/110 mmHg OR a clinically significant increase in DBP of 20 mmHg or more</td>
<td>Continue pazopanib at current dose; if BP is not well controlled within 2 weeks despite standard antihypertensive therapy, delay treatment until recovery and restart pazopanib as follows: 1st occurrence: Restart pazopanib at 600 mg ONCE daily 2nd occurrence: Restart pazopanib at 400 mg ONCE daily</td>
</tr>
</tbody>
</table>
### Hypertension

| BP 170/110 mmHg or higher | Delay treatment until recovery and restart pazopanib as follows:  
1st occurrence: Restart pazopanib at 600 mg ONCE daily  
2nd occurrence: Restart pazopanib at 400 mg ONCE daily  
3rd occurrence: Cease pazopanib |

### Symptomatic

| Persistent BP 150/90 mmHg or higher OR a clinically significant increase in DBP of 20 mmHg or more | Delay treatment until recovery and restart pazopanib as follows:  
1st occurrence: Restart pazopanib at 600 mg ONCE daily  
2nd occurrence: Restart pazopanib at 400 mg ONCE daily  
3rd occurrence: Cease pazopanib |

### Venous thromboembolism

| Grade 2 | Continue pazopanib at current dose and monitor as clinically indicated |
| Grade 3 or Grade 4 (asymptomatic) | Interrupt treatment and start anticoagulant therapy  
Restart pazopanib at same dose after one week of starting anticoagulant if no Grade 3 or 4 haemorrhagic event occurs |
| Grade 4 (symptomatic) | Cease pazopanib |

### 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
<table>
<thead>
<tr>
<th>Interaction</th>
<th>Clinical management</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CYP3A4 and P-gp inhibitors (e.g. amiodarone, aprepitant, azole-antifungals, ritonavir, lapatinib, nilotinib, sorafenib, macrolides, ciclosporin, grapefruit juice etc.)</strong></td>
<td>Increased toxicity of pazopanib possible due to reduced clearance</td>
</tr>
<tr>
<td></td>
<td>Avoid combination or monitor for pazopanib toxicity including increased risk of QTc interval prolongation</td>
</tr>
<tr>
<td></td>
<td>If the use of a strong CYP3A4 or P-gp inhibitor cannot be avoided, the dose of pazopanib should be reduced to 400 mg daily during concomitant administration – further dose reduction may be necessary if toxicity still occurs</td>
</tr>
<tr>
<td><strong>CYP3A4 and P-gp inducers (e.g. carbamazepine, phenytoin, phenobarbitone, rifampicin, St John’s wort, dexamethasone etc.)</strong></td>
<td>Reduced efficacy of pazopanib possible due to increased clearance</td>
</tr>
<tr>
<td></td>
<td>Avoid combination or monitor for decreased clinical response to pazopanib</td>
</tr>
<tr>
<td><strong>Drugs metabolised by CYP2C8 (e.g. lapatinib, paclitaxel, oral antidiabetics etc.), CYP2D6 (e.g. beta blockers, dextromethorphan etc.) or CYP3A4 (e.g. atorvastatin, benzodiazepines, calcineurin inhibitors, clarithromycin, dihydroergotamine, simvastatin, etc.)</strong></td>
<td>Increased effect/toxicity of these drugs possible due to inhibition of CYP2C8, 2D6 and 3A4 by pazopanib, resulting in reduced clearance</td>
</tr>
<tr>
<td></td>
<td>Avoid combination or monitor for increased effect/toxicity. (e.g. increased ALT with simvastatin, hypoglycaemia with antidiabetics etc.)</td>
</tr>
<tr>
<td><strong>Drugs that may prolong the QTc interval (e.g. azole antifungals, tricyclic antidepressants, antiarrhythmics etc.)</strong></td>
<td>Additive effect with pazopanib; may lead to torsades de pointes and cardiac arrest</td>
</tr>
<tr>
<td></td>
<td>Avoid combination or minimise additional risk factors (e.g. correct electrolyte imbalances) and monitor ECG for signs of cardiac arrhythmia</td>
</tr>
<tr>
<td><strong>Rosuvastatin, irinotecan</strong></td>
<td>Increased rosuvastatin and irinotecan plasma levels possible due to inhibition of OAT1B1 and UGT1A1 respectively, by pazopanib</td>
</tr>
<tr>
<td></td>
<td>Avoid combination or monitor for rosuvastatin, irinotecan toxicity</td>
</tr>
<tr>
<td><strong>H2 blockers (e.g. famotidine, ranitidine etc.) and Proton Pump Inhibitors (e.g.omeprazole, pantoprazole, rabeprazole etc.) and Antacids</strong></td>
<td>Reduced efficacy of pazopanib due to decreased absorption when gastric acid secretion suppressed (pazopanib requires acidic environment for absorption)</td>
</tr>
<tr>
<td></td>
<td>Avoid combination</td>
</tr>
<tr>
<td></td>
<td>Ranitidine can be used if dosed 2 hours after and not less than 10 hours before pazopanib</td>
</tr>
<tr>
<td></td>
<td>If a PPI must be used, it should be taken in the evening at the same time as the daily pazopanib dose</td>
</tr>
<tr>
<td></td>
<td>Acid neutralising antacids, e.g. Gastrogel®, Mylanta® (which have a shorter duration of action), may be used if taken 2 hours before or 1 hour after pazopanib</td>
</tr>
</tbody>
</table>
### General

**Interaction**

- Anti-cancer drugs may alter the anticoagulant effect of warfarin.

- 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).

**Clinical management**

- Monitor INR regularly and adjust warfarin dosage as appropriate; consider alternative anticoagulant.

- 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.

- Anti-cancer drugs can damage the lining of the intestine; affecting the absorption of digoxin.

- Both altered antiepileptic and anti-cancer drug levels may occur, possibly leading to loss of efficacy or toxicity.

- Increased risk of bleeding due to treatment related thrombocytopenia.

- Increased risk of serotonin syndrome with concurrent use of 5-HT3 receptor antagonists (e.g. palonosetron, ondansetron, granisetron, tropisetron, dolasetron, etc.)

- 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.

### Warfarin

- Direct oral anticoagulants (DOACs) e.g. apixaban, rivaroxaban, dabigatran

- Anti-cancer drugs may alter the anticoagulant effect of warfarin.

- Monitor INR regularly and adjust warfarin dosage as appropriate; consider alternative anticoagulant.

- 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.

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**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**

**Pazopanib**

**Prior to administration check:**
- blood pressure

**Administer pazopanib:**
- administer orally ONCE a day
- to be swallowed whole with a glass of water; do not break, crush or chew
- to be taken on an empty stomach, one hour before or two hours after food
- **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**

**Pazopanib tablets**
- Pazopanib tablets with written instructions on how to take them.

**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.

<table>
<thead>
<tr>
<th>Immediate (onset hours to days)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nausea and vomiting</strong></td>
<td>Read more about prevention of treatment induced nausea and vomiting</td>
</tr>
<tr>
<td><strong>Headache</strong></td>
<td></td>
</tr>
<tr>
<td>Condition</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Early (onset days to weeks)</td>
<td></td>
</tr>
<tr>
<td>Neutropenia</td>
<td>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.</td>
</tr>
<tr>
<td>Thrombocytopenia</td>
<td>A reduction in the normal levels of functional platelets, increasing the risk of abnormal bleeding.</td>
</tr>
<tr>
<td>Epistaxis</td>
<td>Acute bleeding from the nostril(s), nasal cavity, or nasopharynx.</td>
</tr>
<tr>
<td>Hypertension</td>
<td>High blood pressure is commonly associated with many anti-cancer drugs. Pre-existing hypertension should be controlled prior to initiation of drugs capable of causing hypertension.</td>
</tr>
<tr>
<td>Diarrhoea</td>
<td></td>
</tr>
<tr>
<td>Anorexia</td>
<td>Loss of appetite accompanied by decreased food intake.</td>
</tr>
<tr>
<td>Cardiotoxicity</td>
<td>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.</td>
</tr>
<tr>
<td>Hepatotoxicity</td>
<td>Anti-cancer drugs administered either alone or in combination with other drugs and/or radiation may cause direct or indirect hepatotoxicity. Hepatic dysfunction can alter the metabolism of some drugs resulting in systemic toxicity.</td>
</tr>
<tr>
<td>Fatigue</td>
<td></td>
</tr>
<tr>
<td>Abdominal pain</td>
<td>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.</td>
</tr>
<tr>
<td>Thromboembolism</td>
<td>Arterial and venous thromboembolic events, including pulmonary embolism, deep vein thrombosis and cerebrovascular accidents can occur. Patients should be carefully assessed for risk factors, and consideration given for antithrombotic prophylaxis in high risk patients.</td>
</tr>
<tr>
<td>Gastrointestinal perforation</td>
<td>A rupture of the wall of the stomach, small intestine or large bowel. Symptoms include acute abdominal pain, tenderness and signs of sepsis.</td>
</tr>
<tr>
<td>Arthralgia and myalgia</td>
<td>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.</td>
</tr>
<tr>
<td>Proteinuria</td>
<td></td>
</tr>
<tr>
<td>Haemorrhage</td>
<td></td>
</tr>
<tr>
<td>Palmar-planter erythrodysaesthesia (PPE) - hand-foot syndrome (HFS)</td>
<td>Bilateral erythema, tenderness, pain, swelling, tingling, numbness, pruritus, dry rash, or moist desquamation and ulceration of the palms and soles. It is also known as hand-foot syndrome (HFS). Symptoms appear to be dose dependent and palms are affected more than soles.</td>
</tr>
<tr>
<td>Reversible posterior leukoencephalopathy syndrome (RPLS)</td>
<td>A neurological disorder which may present with headache, seizures, lethargy, confusion, blindness and/or other visual and neurological disturbances. Mild to severe hypertension may also occur.</td>
</tr>
<tr>
<td>Skin and tissue discolouration</td>
<td>Discolouration of the skin or hair may be accompanied by other dermatological effects, including dryness, blisters and thickening or cracking of the skin.</td>
</tr>
</tbody>
</table>
Late (onset weeks to months)

**Anaemia**
Abnormally low levels of red blood cells (RBCs) or haemoglobin in the blood.
Read more about [anaemia](#)

**Hypothyroidism**

---

**Evidence**

The evidence supporting this protocol comes from a randomised, double-blind, placebo-controlled multicentre study. A total of 435 patients with locally advanced and/or metastatic RCC were randomised to receive pazopanib 800 mg once daily (n=290) or placebo (n=145). All patients had clear cell or predominantly clear cell histology and were either treatment naive or had received one prior interleukin or interferon based therapy.

The primary endpoint was progression-free survival (PFS) and secondary endpoints were overall survival (OS), overall response rate, duration of response and safety. In addition, a randomised, double-blind, placebo-controlled, cross-over patient preference study (PISCES) was performed to investigate the influence of tolerability on continuing treatment with pazopanib or sunitinib amongst patients with metastatic RCC.

It was found that 70% of patients preferred pazopanib, 22% sunitinib and 8% had no preference (p<.001). Patients cited less fatigue and better quality of life as the main reasons for preferring pazopanib.

Results of the COMPARZ study demonstrated similar efficacy between pazopanib and sunitinib in the first line setting. Median PFS was 8.4 months for patients treated with pazopanib compared with 9.5 months for those treated with sunitinib (HR 1.047). Overall response rates were 31% for pazopanib and 25% for sunitinib. Pazopanib was associated with less fatigue than sunitinib (55% vs 63%), less hand-foot syndrome (29% vs 50%), less taste alteration (26% vs 36%) and less thrombocytopenia (41% vs 78%). Pazopanib was associated with more alanine aminotransferase elevation than sunitinib (60% vs 43%). Health related quality of life scores were better in the pazopanib treated group than those in the sunitinib treated group.

**Efficacy**

Median PFS was significantly prolonged with pazopanib compared with placebo in the overall study population (9.2 vs 4.2 months; HR=0.46; p<0.0001). The objective response rate was 30% with pazopanib compared with 3% with placebo (P<0.001) and median duration of response was longer than 1 year.

Kaplan-Meier curves for progression free survival:
Kaplan-Meier curves for overall survival.\textsuperscript{5}

Median OS in the COMPARZ study was 28.3 months in the pazopanib group (95% CI, 26.0 to 35.5) and 29.1 months in the sunitinib group (95% CI, 25.4 to 33.1).
**Toxicity**

Diarrhea, hypertension, hair colour changes, nausea, anorexia, and vomiting were the most commonly reported adverse events (AEs). Most AEs were grade 1 or 2 and were clinically manageable. The most common grade 3 or 4 AEs in the pazopanib arm were hypertension (4%) and diarrhea (4%). Arterial thrombotic events and haemorrhagic events (all grades) occurred in 3% and 13% of pazopanib-treated patients respectively.

Four patients (1%) in the pazopanib arm had fatal AEs that were assessed to be attributable to the treatment.²

---

Toxicity

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---

**Table 3. Common Treatment-Emergent Adverse Events* and Selected Clinical Laboratory Abnormalities† in Patients With At Least One Adverse Event**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Grade</th>
<th>Any*</th>
<th>3</th>
<th>4</th>
<th>Any*</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
</tr>
<tr>
<td>Adverse event</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diarrhea</td>
<td>150</td>
<td>52</td>
<td>9</td>
<td>3</td>
<td>2</td>
<td>&lt;1</td>
<td>13</td>
</tr>
<tr>
<td>Hypertension</td>
<td>116</td>
<td>43</td>
<td>13</td>
<td>4</td>
<td>0</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>Hair color changes</td>
<td>109</td>
<td>38</td>
<td>1</td>
<td>&lt;1</td>
<td>0</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Nausea</td>
<td>74</td>
<td>26</td>
<td>2</td>
<td>&lt;1</td>
<td>0</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>Anemia</td>
<td>65</td>
<td>22</td>
<td>6</td>
<td>2</td>
<td>0</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>Vomiting</td>
<td>61</td>
<td>21</td>
<td>6</td>
<td>2</td>
<td>1</td>
<td>&lt;1</td>
<td>11</td>
</tr>
<tr>
<td>Fatigue</td>
<td>55</td>
<td>19</td>
<td>7</td>
<td>2</td>
<td>0</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>Aethemia</td>
<td>41</td>
<td>14</td>
<td>8</td>
<td>3</td>
<td>0</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>Abdominal pain</td>
<td>32</td>
<td>11</td>
<td>6</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>1</td>
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<tr>
<td>Headache</td>
<td>30</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Clinical chemistry</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>ALT increase</td>
<td>152</td>
<td>53</td>
<td>30</td>
<td>10</td>
<td>5</td>
<td>2</td>
<td>32</td>
</tr>
<tr>
<td>AST increase</td>
<td>152</td>
<td>53</td>
<td>21</td>
<td>7</td>
<td>2</td>
<td>&lt;1</td>
<td>27</td>
</tr>
<tr>
<td>Hyperglycemia</td>
<td>116</td>
<td>41</td>
<td>2</td>
<td>&lt;1</td>
<td>0</td>
<td>47</td>
<td>33</td>
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<tr>
<td>Total bilirubin increase</td>
<td>102</td>
<td>36</td>
<td>7</td>
<td>3</td>
<td>2</td>
<td>&lt;1</td>
<td>16</td>
</tr>
<tr>
<td>Hypophosphatemia</td>
<td>95</td>
<td>34</td>
<td>11</td>
<td>4</td>
<td>0</td>
<td>16</td>
<td>11</td>
</tr>
<tr>
<td>Hypokalemia</td>
<td>91</td>
<td>33</td>
<td>4</td>
<td>1</td>
<td>4</td>
<td>0</td>
<td>35</td>
</tr>
<tr>
<td>Hypomagnesemia</td>
<td>86</td>
<td>31</td>
<td>11</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>35</td>
</tr>
<tr>
<td>Hypoglycemia</td>
<td>31</td>
<td>11</td>
<td>9</td>
<td>3</td>
<td>0</td>
<td>13</td>
<td>9</td>
</tr>
<tr>
<td>Hematologic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leukopenia</td>
<td>103</td>
<td>37</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Neutropenia</td>
<td>94</td>
<td>34</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Thrombocytopenia</td>
<td>89</td>
<td>32</td>
<td>2</td>
<td>&lt;1</td>
<td>1</td>
<td>&lt;1</td>
<td>7</td>
</tr>
<tr>
<td>Lymphocytopenia</td>
<td>86</td>
<td>31</td>
<td>11</td>
<td>4</td>
<td>1</td>
<td>&lt;1</td>
<td>34</td>
</tr>
</tbody>
</table>

*Adverse events with an incidence of ≥10% in the pazopanib arm are displayed.
†Clinical laboratory abnormalities with an incidence of ≥20% in the pazopanib arm or with a 5% increase in incidence in the pazopanib arm compared with the placebo arm are displayed.
References


History

Version 3

<table>
<thead>
<tr>
<th>Date</th>
<th>Summary of changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>30/11/2012</td>
<td>New protocol taken to Medical Oncology Reference Committee meeting.</td>
</tr>
<tr>
<td>28/03/2013</td>
<td>Approved and published on eviQ.</td>
</tr>
<tr>
<td>30/08/2013</td>
<td>Monitoring of LFTs updated.</td>
</tr>
<tr>
<td>09/05/2014</td>
<td>Reviewed at Medical Oncology Reference Committee meeting. Evidence updated. Review 2 years.</td>
</tr>
<tr>
<td>31/03/2017</td>
<td>Protocol discussed and decided to have a 5 year review period. Next due for review in 2019.</td>
</tr>
<tr>
<td>31/05/2017</td>
<td>Transferred to new eviQ website. Protocol version changed to V.2.</td>
</tr>
<tr>
<td></td>
<td>Hepatitis screening changed to unknown.</td>
</tr>
<tr>
<td>27/03/2019</td>
<td>Protocol reviewed at Medical Oncology Reference Committee meeting on 15/03/2019. Patient information</td>
</tr>
<tr>
<td></td>
<td>updated- your treatment and when to get help changed to less chemotherapy focused information. Version</td>
</tr>
<tr>
<td></td>
<td>number changed to V.3. Next review in 5 years.</td>
</tr>
<tr>
<td>09/11/2021</td>
<td>Patient information title changed to &quot;Kidney cancer advanced or metastatic&quot;.</td>
</tr>
<tr>
<td>21/12/2021</td>
<td>Changed antiemetic clinical information block to minimal or low, to align with new categories.</td>
</tr>
<tr>
<td></td>
<td>See ID 7 Prevention of anti-cancer therapy induced nausea and vomiting (AINV) v5.</td>
</tr>
</tbody>
</table>
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

First approved: 28 March 2013
Last reviewed: 15 March 2019
Review due: 30 June 2024

The currency of this information is guaranteed only up until the date of printing, for any updates please check:
19 Jun 2023
It is important to understand that pazopanib is not a traditional chemotherapy drug and has a different way of working. It works by targeting the cancer cells to stop them growing and spreading. The treatment schedule below explains how the drug for this treatment is given.

### Pazopanib

<table>
<thead>
<tr>
<th>Day</th>
<th>Treatment</th>
<th>How it is given</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous</td>
<td>Pazopanib</td>
<td>Take orally ONCE a day on an empty stomach, one hour before food or two hours after food.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Swallow capsules whole with a glass of water, do not break, crush or chew.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If you are taking an antacid, do not take within 2 hours as this may interfere with its absorption.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>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.</td>
</tr>
</tbody>
</table>

### 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 suddenly become unwell.

### Emergency contact details

<table>
<thead>
<tr>
<th>Daytime:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Night/weekend:</td>
<td></td>
</tr>
<tr>
<td>Other instructions:</td>
<td></td>
</tr>
</tbody>
</table>

### 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. 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.

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

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

---

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

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

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

<table>
<thead>
<tr>
<th>Immediate (onset hours to days)</th>
<th>Nausea and vomiting</th>
<th>Headache</th>
</tr>
</thead>
<tbody>
<tr>
<td>You may feel sick (nausea) or be sick (vomit).</td>
<td>Take your anti-sickness medication as directed even if you don’t feel sick.</td>
<td>You can take paracetamol if you have a headache.</td>
</tr>
<tr>
<td>Drink plenty of fluids (unless you are fluid restricted).</td>
<td>Eat small meals more frequently.</td>
<td>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.</td>
</tr>
<tr>
<td>Try food that does not require much preparation.</td>
<td>Try bland foods like dry biscuits or toast.</td>
<td></td>
</tr>
<tr>
<td>Gentle exercise may help with nausea.</td>
<td>Ask your doctor or nurse for eviQ patient information - Nausea and vomiting during cancer treatment.</td>
<td></td>
</tr>
<tr>
<td><strong>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.</strong></td>
<td><strong>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.</strong></td>
<td></td>
</tr>
</tbody>
</table>

---

Early (onset days to weeks)

---

Patient information - Kidney cancer advanced or metastatic - Pazopanib Page 2 of 8
### 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
- 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.

### Nose bleeds

- If your nose starts to bleed gently apply pressure on the soft part of nostrils below the bridge of the nose for at least 10 minutes.
- It may help to put a cold pack over your forehead or the bridge of the nose.
- Tell your doctor or nurse immediately, or go to the nearest hospital Emergency Department if your nose will not stop bleeding.

### High blood pressure (hypertension)

- You may not have any signs or symptoms if you have high blood pressure.
- If it is severe you may get headaches, shortness of breath or feel dizzy.
- Your blood pressure will be taken regularly during your treatment.
- Tell your doctor or nurse immediately, or go to the nearest hospital Emergency Department if you get any of the signs or symptoms listed above.

### 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 anti diarrhoeal 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.
### Appetite loss (anorexia)
- You may not feel like eating.
- Try to avoid drinking fluids at meal times.
- Try to eat small meals or snacks regularly throughout the day.
- Try to eat food that is high in protein and calories.
- If you are worried about how much food you can eat, or if you are losing weight, ask to speak to a dietitian.

### 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.**

### Liver problems
- You may get:
  - yellowing of your skin or eyes
  - itchy skin
  - pain or tenderness in your stomach
  - nausea and vomiting
  - loss of appetite
- You will have regular blood tests to check how well your liver is working.
- **Tell your doctor or nurse as soon as possible if you notice that your urine is a dark colour, the whites of your eyes look yellow, or if you have stomach pain.**

### Tiredness and lack of energy (fatigue)
- You may feel very tired, have no energy, sleep a lot, and not be able to do normal activities or things you enjoy.
- Do not drive or operate machinery if you are feeling tired.
- Nap for short periods (only 1 hour at a time)
- Prioritise your tasks to ensure the best use of your energy.
- Eat a well balanced diet and drink plenty of fluids (unless you are fluid restricted).
- Try some gentle exercise daily.
- Allow your friends and family to help.
- **Tell your doctor or nurse if you get any of the symptoms listed above.**

### Stomach pain
- You may get:
  - 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.**

### Blood clots (thromboembolism)
- Blood clots can occur with this 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:**
  - redness, heat or pain in your leg(s)
  - numbness or weakness in your face, arm or leg
  - chest pain
  - sudden shortness of breath
  - dizziness
  - trouble speaking
  - blurred vision
  - severe headache
  - unexplained falls or loss of balance.
<table>
<thead>
<tr>
<th>Condition</th>
<th>Details</th>
</tr>
</thead>
</table>
| Bleeding into stomach or bowel  | • This side effect is rare, but can be very serious.  
  • Tell your doctor or nurse immediately, or go to the nearest hospital Emergency Department if you get any of these signs or symptoms:  
    o severe stomach pain  
    o swollen and hot skin around your stomach  
    o bleeding  
    o nausea or vomiting  
    o fever or chills  
    o a fast heartbeat  
    o you feel short of breath. |
| 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. |
| Kidney changes or damage        | • This treatment may cause changes to how your kidneys work. This may cause protein in your urine.  
  • This is not something that you will notice.  
  • You will have blood and urine tests to check that your kidneys are working properly. |
| Bleeding (haemorrhage)          | • 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:  
    o unusual bleeding or bruising  
    o bright red or black, tarry bowel motions (stools, poo)  
    o stomach pain  
    o slurred speech  
    o shortness of breath  
    o a fast heartbeat. |
| Hand-foot syndrome (palmar-plantar erythrodysaesthesia) | • The palms of your hands and soles of your feet may become:  
    o red and hot  
    o swollen  
    o painful and tender  
    o blistered.  
  • The skin in the area may also peel.  
  • Moisturise your hands and feet daily with sorbolene or aqueous cream.  
  • Keep your hands and feet clean and dry.  
  • Avoid hot water, instead use lukewarm water to bathe.  
  • Avoid direct sunlight.  
  • Avoid unnecessary walking, jogging or exercise.  
  • Wear cotton socks and avoid tight-fitting shoes.  
  • Tell your doctor or nurse as soon as possible if you notice any skin changes on your hands or feet. |
| Changes in the way your brain works (reversible posterior leukoencephalopathy syndrome (RPLS)) | • This treatment can have an effect on your brain, but this is rare.  
  • Tell your doctor or nurse immediately or go to the nearest hospital Emergency Department if you get any of the following signs or symptoms:  
    o headaches or vision problems  
    o nausea and vomiting  
    o tiredness  
    o confusion  
    o fits (seizures)  
    o high blood pressure. |
| Hair and skin colour changes     | • You may notice changes to your hair and skin colour.  
  • This is not harmful and will go away after treatment. |
<table>
<thead>
<tr>
<th>Late (onset weeks to months)</th>
<th>Low red blood cells (anaemia)</th>
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<tr>
<td></td>
<td>• You may feel dizzy, light-headed, tired and appear more pale than usual.</td>
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<td></td>
<td>• Tell your doctor or nurse if you have any of these signs or symptoms. You might need a blood transfusion.</td>
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<td><strong>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.</strong></td>
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<tr>
<td>Slow thyroid gland (hypothyroidism)</td>
<td>• You may:</td>
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<td></td>
<td>o fatigue and low energy levels</td>
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<td>o depression</td>
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<td>o slow heart rate</td>
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<td>o unexplained weight gain</td>
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<td>o intolerance to cold temperatures</td>
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<td></td>
<td>o fatigued and aching muscles</td>
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<td>o dry, coarse skin</td>
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<td>o puffy face</td>
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<td></td>
<td>o hair loss</td>
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<td></td>
<td>o constipation</td>
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<td></td>
<td>o problems with concentration</td>
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<td></td>
<td>• You will have regular blood tests to check how well your thyroid is working</td>
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<tr>
<td></td>
<td><strong>Tell your doctor or nurse if you get any of the symptoms listed above.</strong></td>
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</tbody>
</table>

**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.
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
- 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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