



Appendix C: Medications for the Management of Prostate Cancer Side Effects in Primary Care

Medications for the Management of Prostate Cancer Side Effects in Primary Care

Generic Name Trade name Dosage form and strengths	Recommended Adult Dose ^A	Adverse Effects ^B	Drug Interactions ^B	PharmaCare Coverage ^C	Approx. Cost per month ^D
Management of Erectile Dysfunction					
Phosphodiesterase type 5 inhibitors					
sildenafil <i>Viagra, G</i> Tabs: 25, 50, 100 mg	As needed dosing: 50 to 100 mg 30-60 min before sexual activity Duration: up to 12 hours Maximum: 100 mg per day	Headache, flushing, dyspepsia, nasal congestion, transient visual disturbances, dizziness, skin rash Rare: priapism, vision loss	Decrease dose in patients taking CYP3A4 inhibitors (e.g., cimetidine, clarithromycin, grapefruit juice, ketoconazole) Decreased efficacy in patients taking CYP3A4 inducers (e.g., carbamazepine, phenytoin) Nitrates are contraindicated within 24 hours of sildenafil or vardenafil and 48 hours of tadalafil.	Non-benefit	\$7-10/tab
tadalafil <i>Cialis, G</i> Tabs: 2.5, 5, 10, 20 mg	Once daily dosing: 2.5 to 5 mg daily As needed dosing: 10 to 20 mg 30-60 min before sexual activity Duration: Up to 36 hours Maximum: 20 mg per day			Non-benefit	\$13-14/tab OR \$120/month
vardenafil <i>Levitra, G</i> Tabs: 5, 10, 20 mg <i>Staxyn</i> Oral disintegrating tablets (ODT): 10 mg	Tablets: As needed dosing: 10 to 20 mg 30-60 min before sexual activity Duration: up to 12 hours Maximum: 20 mg/24h ODT: As needed dosing: 10 mg dissolved on tongue 45-90 min before sexual activity Maximum: 10 mg per day		May cause hypotension if used with nonselective alpha-blockers, e.g., doxazosin, prazosin, CYP3A4 inhibitors	Non-benefit	\$8-13/tab

Generic Name Trade name Dosage form and strengths	Recommended Adult Dose ^A	Adverse Effects ^B	Drug Interactions ^B	PharmaCare Coverage ^C	Approx. Cost per month ^D
Management of bladder and bowel dysfunction					
Alpha1-adrenergic Receptor Antagonists					
doxazosin^E <i>Cardura, G</i> Tabs: 1, 2, 4 mg	Initial: 1 mg once daily Usual: 1-8 mg once daily Maximum: 8 mg per day	Orthostatic hypotension, dizziness, headache, asthenia, nasal congestion, syncope. The “first-dose effect” of orthostatic hypotension with a severe drop in blood pressure and sudden syncope may occur when beginning therapy. Risk is increased during dose adjustments, with concurrent use of antihypertensive drugs, or ethanol, and in elderly and sodium-depleted patients.	May precipitate significant hypotension when used in conjunction with other alpha-blockers, antihypertensives, nitrates or PDE5 inhibitors.	Regular Benefit	\$5-8
tamsulosin^E <i>Flomax, Uflo, G</i> CR tabs: 0.4 mg SR caps: 0.4 mg	CR tab: 0.4 mg once daily SR caps: 0.4 mg once daily Maximum: 0.8 mg per day	Dizziness, retrograde ejaculation, orthostatic hypotension	May precipitate significant hypotension when used in conjunction with other alpha-blockers, antihypertensives, nitrates or PDE5 inhibitors. Concurrent use with strong CYP3A4 or CYP2D6 inhibitors may increase serum concentration of tamsulosin	Regular Benefit	\$6-12
Antidiarrheals					
loperamide <i>Immodium, G</i> Caps/Tabs: 2 mg	4 mg after 1 st loose stool then 2 mg after each subsequent loose stool Maximum: 16 mg per day	Abdominal cramps or discomfort, drowsiness, dizziness, dry mouth, skin rash. Higher than recommended doses can lead to cardiac dysrhythmia and death	Concomitant administration with quinidine or ritonavir may increase plasma levels of loperamide	Limited coverage	\$30/ 42 pills
atropine/diphenoxylate <i>Lomotil, G</i> Tabs: 0.025/2.5 mg	2 tablets (0.05/5mg) initially, then 1 tablet after each loose stool Maximum: 8 tablets per day	Sedation, nausea, abdominal cramps, dry skin and mucous membranes (from atropine), some addiction potential.	Additive anticholinergic effects with other anticholinergic agents	Limited coverage	\$35/ 50 tablets
Osmotic Laxatives					
glycerin <i>G</i> Suppositories: 2.6 mg	1 suppository once or twice daily or as needed <i>Onset:</i> 15-60 mins	Rectal discomfort or burning.	No known drug interactions	Non-benefit	\$10-20
lactulose <i>G</i> Solution: 667 mg/ml	15-30 ml once or twice daily or as needed <i>Onset:</i> 24-48 hours Maximum: 60 ml per day	Bloating, flatulence, cramps, diarrhea.	Monitor INR with concomitant warfarin therapy when initiating or discontinuing lactulose	Non-benefit	\$30
polyethylene glycol 3350 <i>Lax-A-Day, Pegalax, ResotraLax, G</i> Powder	17 g once daily <i>Onset:</i> 2-4 days	Common: nausea, cramping, diarrhea. Rare: hives, skin rash.	May decrease the absorption of other drugs, separate by 2 hours.	Non-benefit (Regular benefit: Plan W)	\$25
Stimulant Laxatives					

Generic Name Trade name Dosage form and strengths	Recommended Adult Dose ^A	Adverse Effects ^B	Drug Interactions ^B	PharmaCare Coverage ^C	Approx. Cost per month ^D
bisacodyl <i>Dulcolax, G</i> Tabs: 5 mg Suppositories: 10 mg	Oral: 5-10 mg once daily or as needed <i>Onset:</i> 6-12 hours Suppository: 10 mg daily or as needed <i>Onset:</i> 15-60 mins	Abdominal pain, cramps, cathartic colon. Rectal microscopic mucosal changes with suppository	Milk, antacids or PPIs may cause premature dissolution of the enteric coating	Non-benefit (Regular benefit: Plan P and Plan W)	\$5/ 30 tabs \$30/ 30 supps
senna <i>Senokot Preparations, G</i> Tabs: 8.6, 12 mg Syrup: 1.7 mg/ml	8.6-34.4 mg once or twice daily <i>Onset:</i> 6-12 hours Maximum: 68.8 mg per day	Abdominal pain, cramps, cathartic colon.	No known drug interactions	Non-benefit (Regular benefit: Plan P and Plan W)	\$10/ 100 tabs
Other					
psyllium <i>Metamucil, G</i> Multiple	Initial: 15 mg BID with meals (instructions vary with product)	Bloating, flatulence, abdominal discomfort. Rare: allergic reactions, esophageal and colonic obstruction.	May decrease the absorption of other drugs, separate by 3 hours.	Non-benefit	\$25
Anticholinergics					
oxybutynin <i>Ditropan, Ditropan XL, G</i> IR tabs: 2.5, 5 mg Syrup: 1 mg/ml XL tabs: 5, 10 mg	IR: 2.5-5 mg once daily to four times a day XL: 5-30 mg daily	Dry mouth, constipation, tachycardia.	Potential additive effects with other anticholinergic drugs. solifenacin: do not exceed 5 mg daily with potent CYP3A4 inhibitors, e.g., erythromycin, itraconazole, nelfinavir, ritonavir.	IR: Regular benefit XL: Non-benefit	IR: \$11-85 XL: \$90-280
oxybutynin <i>Oxytrol Patch 36mg</i>	1 patch (3.9 mg/d) twice weekly			Non-benefit	\$60
solifenacin <i>Vesicare, G</i> Tabs: 5, 10 mg	5 mg daily May increase to 10 mg daily	Dry mouth, constipation, tachycardia.	tolterodine: maximum dose of 2 mg/day in patients taking potent inhibitors of CYP3A4 (e.g., erythromycin, itraconazole, ketoconazole, nelfinavir, ritonavir). Coadministration of Detrol LA with antacid results in increased C _{max} and the potential for “dose-dumping.” Tolterodine extended-release products may also be affected by PPI treatment	Limited Coverage	\$11
tolterodine <i>Detrol, Detrol LA, G</i> IR tabs: 1, 2 mg LA caps: 2, 4 mg	IR: 1-2 mg BID LA: 2-4 mg once daily	Primarily anticholinergic effects (dry mouth, constipation, tachycardia).		Non-benefit	\$17-60
Beta-3-adrenergic agonists					
mirabegron <i>Myrbetriq</i> Tabs: 25, 50 mg	25 to 50 mg once daily	Hypertension, nasopharyngitis, urinary tract infection, tachycardia	May increase serum concentration of substrates of CYP2D6 (desipramine, metoprolol) and Pgp (digoxin, dabigatran). Coadministration with antimuscarinic agents may increase risk of urinary retention. In patients with severe renal impairment or moderate hepatic impairment do not exceed 25 mg once daily PO.	Non-benefit	\$60

Generic Name Trade name Dosage form and strengths	Recommended Adult Dose ^A	Adverse Effects ^B	Drug Interactions ^B	PharmaCare Coverage ^C	Approx. Cost per month ^D
Management of hot flashes^F					
17B-estradiol, gel^E <i>Divigel 0.1%, Estrogel 0.06%</i> Packet: 0.25, 0.5, 1 mg Pump: 0.75 mg/ actuation	Packet: 1 packet (0.25, 0.5, 1 mg) once daily Pump: 1 or 2 actuations once daily	Bloating, headache, nausea, chloasma, breast tenderness. Redness, skin irritation. Serious: Increased risk of VTE, CVD, breast cancer.	Estrogens may diminish the effectiveness of anticoagulant, antidiabetic and antihypertensive agents.	Limited Coverage	\$22-44
17B-estradiol, patch^E <i>Climara, Estradot, Oesclim, G 25, 37.5, 50, 75, 100 mcg/ patch</i>	Climara: 1 patch applied once weekly Others: 1 patch applied twice weekly			Limited Coverage	\$20-25
cyproterone acetate^E <i>Androcur, G</i> Tabs: 50 mg	Usual: 50 mg BID Maximum: 300 mg per day	Decreased libido, edema, gynecomastia, impotence, osteoporosis. Serious: hepatic toxicity, benign and malignant liver tumors and thromboembolic events	CYP3A4 inhibitors (e.g., ketoconazole, clotrimazole, ritonavir) may increase cyproterone levels CYP3A4 inducers (e.g., rifampicin, phenytoin, St. John's Wort) may decrease cyproterone levels Use with HMGCoA inhibitors (statins) may increase the risk of myopathy or rhabdomyolysis	Non-benefit	\$100
medroxyprogesterone^E <i>Provera, G</i> Tabs: 2.5, 5, 10 mg	20 mg once daily	Bloating, irritability, weight gain, mood swings. Serious: hepatic dysfunction, thromboembolic events	May diminish therapeutic effect of Anticoagulants	Regular Benefit	\$12
megestrol acetate^E <i>Megace, G</i> Tab: 40, 160 mg	20 mg once or twice daily			Regular Benefit	\$50
venlafaxine^E <i>Effexor XR, G</i> Caps: 37.5, 75, 150 mg	Initial: 37.5 mg once daily Usual: 37.5 to 150 mg once daily Maximum: 225 mg per day	Nausea, sleep disturbance, drowsiness, nervousness, dizziness, dry mouth. Discontinuation symptoms. Serious: dose-related hypertension, suicidal ideation, severe agitation	Use with MAOIs may lead to potentially fatal reaction initially presenting with tremor, agitation, hypomania, hyperthermia and/or hypertension. Inhibitors of CYP2D6 or CYP3A4 may increase venlafaxine levels.	Regular Benefit	\$4-8

Abbreviations: BID twice a day; CAP capsules; CR controlled release; G generics; IR immediate release; ODT oral dissolving tablet; LA long acting; MAOIs – monoamine oxidase inhibitors; SR sustained release; Tab tablets; XR extended release

- ^A For normal renal and hepatic function. Consult product monograph for detailed dosing instructions and dose adjustments for unique patient populations
- ^B Not an exhaustive list. Check the product monograph (<https://health-products.canada.ca/dpd-bdpp/index-eng.jsp>) or an interaction checker (e.g., Lexicomp[®]) before prescribing
- ^C PharmaCare coverage as of April 2019 (subject to revision). Regular Benefit: Eligible for full reimbursement*. Limited Coverage: Requires Special Authority to be eligible for reimbursement*. Non-benefit: Not eligible for reimbursement. *Reimbursement is subject to the rules of a patient's PharmaCare plan, including any deductibles. In all cases, coverage is subject to drug price limits set by PharmaCare. See: www.health.gov.bc.ca/pharmacare/plans/index.html and www.health.gov.bc.ca/pharmacare/policy.html for further information.
- ^D Drugs costs are average retail cost of the generic, when available. Current as of April 2019 and does not include retail markups or pharmacy fees.
- ^E Off-label: Prescription of a registered medicine for a use that is not included in the product information.
- ^F Longer-term prospective studies are required to determine whether these medications can alleviate hot flushes, without increased toxicity.

► References

1. Gray Jean, editor. e-Therapeutics+ [Internet]. Ottawa (ON): Canadian Pharmacists Association; c2019 [Accessed April 3, 2019].
2. e-CPS [Internet]. Ottawa, ON: Canadian Pharmacists Association; c2019 [Accessed April 3, 2019].
3. Jobson MD. UpToDate [Internet]. Waltham, MA: UpToDate Inc.; c2019 [Accessed April 3, 2019]
4. Health Canada Drug Product Database Product Monographs. Ottawa, ON: Health Canada; 2019 [Accessed April 3, 2019].