BC's HEART FAILURE NETWORK
Quality care for quality life.

Heart Failure End of Life
Appropriate Prescribing Guideline

For adults, age 19 and older in British Columbia

The management of heart failure (HF) involves numerous pharmacological (beta blockers, ACE-I inhibitors) and non-pharmacological (device therapy) treatments. As end of life (EOL) approaches, the focus of care shifts from active disease management, towards palliation of symptoms. However, some HF therapies remain important and reduce symptoms (Goodlin, 2009).

This module is intended to assist with de-prescribing medications, and guide the safe reduction of medications at the end of life.

Communication early in the trajectory of HF will facilitate decision making between the clinician, patients and family members, with the aim of hoping for the best but preparing for the worst (Gadoud, Jenkins & Hogg, 2013).

Guiding Principles for Appropriate Prescribing Medications

- Review meds regularly considering survival and symptom management and the goals of the patient.
- Discuss all medication changes with patient and family
- Focus on symptom management
- Eliminate unnecessary medications, especially those that may be causing more adverse effects than benefits.
- Avoid medications that cause hypotension or syncope
- Maintenance of some HF meds will provide positive benefit, ease symptoms, potentially avoid re-admissions to hospital as well as improve quality of life:
    - Beta Blockers protect against tachycardia and anxiety
    - Diuretics ease pulmonary congestion and shortness of breath.
    - ACE-I or ARBs provide positive left ventricular support
- Dose reductions may be preferred over discontinuation
- When the patient can no longer take oral meds, DO NOT change to IV or SC route (except possibly diuretics if required)

Gadoud et al, 2013.

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Appendix 1: Gadoud et al. 2013

Table 1. Conventional medical HF management in advanced HF and last days of life.

Drug	HF survival improved?	HF symptoms improved?	Common side effects	Advanced HF	Last days of life
ACE Inhibitor	Yes	Yes	Cough, ↓BP, ↑K+, renal impairment	Continue if tolerated (except during hypovolaemic illness *)	Discontinue
Amiodarone	No	Yes	Nausea, liver and thyroid dysfunction, QT prolongation	Continue if required for arrhythmia control unless significant adverse effects	Discontinue
Angiotensin receptor blocker	Yes	Yes	↓BP, ↑K+, renal impairment	Continue if tolerated (except during hypovolaemic illness)	Discontinue
Aspirin	No (unless recent infarct)	No	GI irritation and hemorrhage	Discontinue unless significant vascular disease/recent infarct	Discontinue
Beta blocker	Yes	Yes	↓HR, ↓BP, cold peripheries, nightmares, fatigue	Continue if tolerated	Discontinue
Digoxin	No	Yes	↓HR, nausea and GI disturbance, agitation, drowsiness	Continue if tolerated but vigilance required to avoid toxicity	Discontinue but may still provide symptom relief so could continue
Diuretic	Possibly	Yes	↓K+, dehydration, gout	Continue with dose titration as required	Discontinue but may still provide symptom relief so could continue
Ivabradine	Yes	Yes	↓HR, visual disturbance, headache	Continue if tolerated	Discontinue
Hydralazine	Yes (with nitrate)	No	GI disturbance, headache, flushing	Continue if tolerated	Discontinue
Mineralcorticoid receptor antagonist (eplerenone/ spironolactone)	Yes	Yes	↑K+, renal impairment, GI disturbance, gynaecomastia (spironolactone only)	Continue if tolerated (except during hypovolemic illness)	Discontinue
Nitrate	Yes (with hydralazine)	Yes	Headache, GI and sleep disturbance	Continue if tolerated	Discontinue
Statin	No	No	Liver dysfunction, myalgia, myositis	Discontinue	Discontinue

* Dosing may need to be adjusted in impaired renal function

ACE: angiotensin converting enzyme; BP: blood pressure; GI: gastrointestinal; HF: heart failure; HR: heart rate; K^+: potassium.

References:

Cruz-Jentoft, A., Bolana, B., Rexach, L. (2012). Drug therapy optimization at the end of life. *Drugs Aging 2012:* 29(6); 511-521.

Gadoud, A., Jenkins, S., Hogg, K.J. (2013). Palliative care for people with heart failure: Summary of current evidence and future direction. *Palliative Medicine*. Published by SAGE @ http://sagepublications.com/content/early/2013/07/05/0269216313494960/

Goodlin, S.J. (2009). Palliative care in congestive heart failure. *J Am Coll Cardiol.* 2009;54; 386-369.