Cardiac Services BC
Provincial Health Services Authority

# BC AFC Calcium Channel Blocker Initiation and Titration Pathway (For Prescribers)

**Document Purpose:** Standardized recommendations for initiation of **a Calcium Channel Blocker (verapamil/diltiazem)** and ongoing monitoring/patient management

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**Clinical Indication:**

- Rate control of AF in the absence of significant structural heart disease or decompensated heart failure

**Absolute Contraindications:**

- High degree atrioventricular conduction disorders (unless functioning pacemaker is present)
- Systolic heart failure (LVEF <40%)
- Cardiac amyloidosis

**Relative Contraindications** (caution for use):

- Sinus bradycardia (<50 bpm) or sick sinus syndrome
- Recent MI

**Baseline Investigations:**

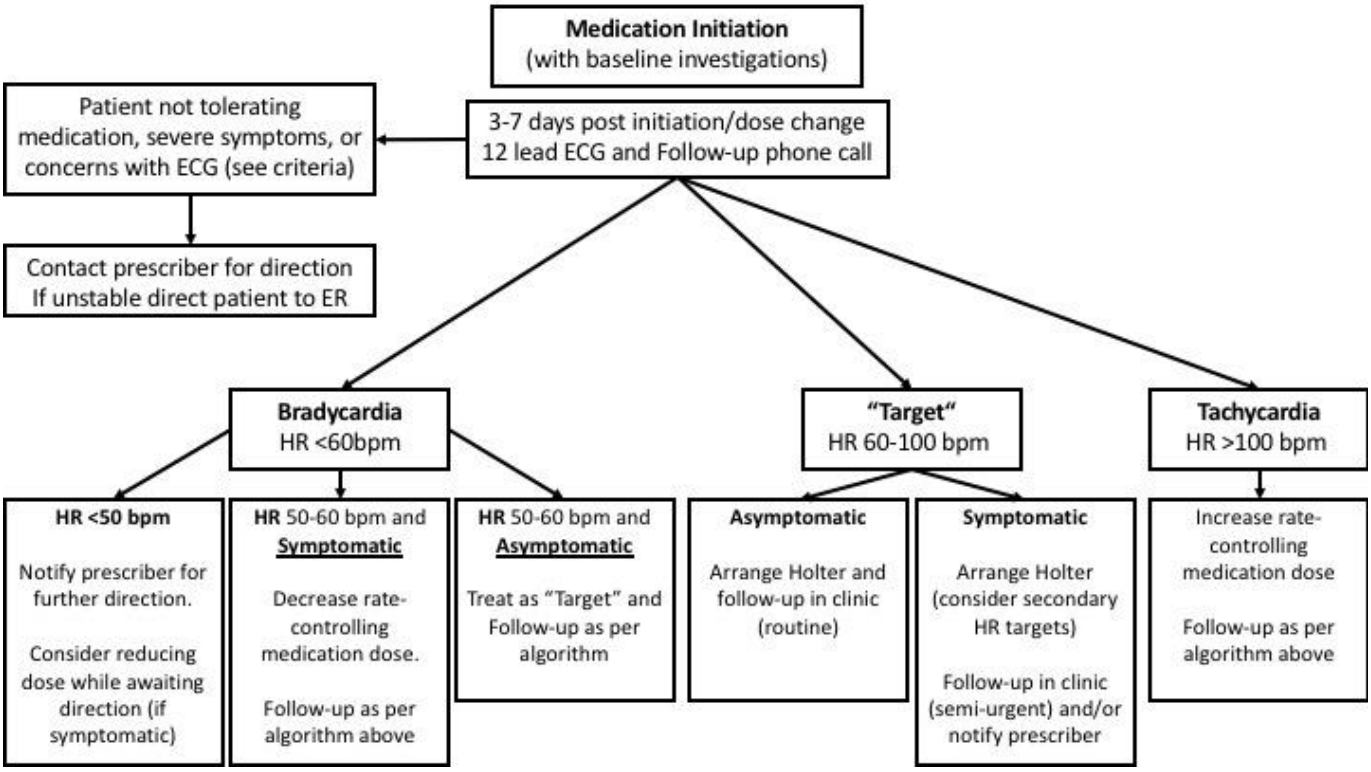
- Blood pressure
- ECG (within 1 week)
- Echocardiogram (or other assessment of LV function; within 1 year)

**Dosing:**

| Agent | Formulation | Titrate | Usual Max |
|---|---|---|---|
| Diltiazem | Immediate Release (IR) formulation | 30mg TID → 60mg TID → 90mg TID → 120mg TID → 180mg TID | 180mg TID (immediate release) |
| | Extended Release (ER) formulation | 120mg daily → 180mg daily →240mg daily → 300mg daily → 360mg daily → 240mg BID | 240mg BID (extended release) |

| Agent | Formulation | Titrate | Usual Max |
|---|---|---|---|
| Verapamil | Immediate Release (IR) formulation | 30mg TID → 60mg TID → 90mg TID → 120mg TID → 180mg TID | 180mg TID (immediate release) |
| | Extended Release (ER or SR) formulation | 120mg daily → 180mg daily → 240mg daily → 300mg daily → 360mg daily → 240mg BID | 240mg BID (extended release) |

**Dose Titration Algorithm:**




**Secondary targets:**

- If patients remain symptomatic at target resting heart rate, consider these secondary targets:
    - Average HR < 90bpm on 24 hour Holter monitor
    - HR with moderate exercise <110bpm (i.e. 6 minute walk)
    - HR on exertion <110% age predicted maximum (220-age x 1.1 on EST or maximum Holter HR)

**Criteria for Notification of MD/NP**

- **Clinical**
    - Syncope
    - Dizziness/lightheadedness - Notify MD/NP if acute onset, severe, or persistently problematic
    - New or worsening SOB, or New or worsening fluid retention
    - Symptoms of medication toxicity
- **ECG/Holter**
    - Symptomatic bradycardia (<50 bpm)
    - Symptomatic hypotension (<80mmHg systolic)
    - Uncontrolled tachycardia (resting or average HR >120 bpm)
    - Asymptomatic pauses >3 seconds on Holter monitor or ECG
    - All symptomatic pauses of any duration on Holter monitor or ECG
    - QTc >500msec or an increase in QTc >25% as per ECG
    - New heart block
        - lengthening of PR interval > 250ms
        - Any new 2nd or 3rd degree heart block
        - new widening QRS >120msec
    - Ventricular tachycardia >5 beats, >5% PVCs

**Monitoring:**

| Parameter | Frequency | Considerations |
|---|---|---|
| Patient response (symptoms/ECG) | Within 1 week of initiation or dose change | Follow titration algorithm to achieve optimal heart rate |
| Blood Pressure | With each dose change and at each patient follow-up appointment | Supportive measures to mitigate orthostatic hypotension |
| Medication Tolerance | With each dose change, and at each patient follow-up appointment | Check for symptomatic bradycardia/hypotension<br>Syncope<br>o Report to ER, notify prescriber<br>Dizziness/lightheadedness<br>o Notify prescriber if acute onset, severe, or persistently problematic<br>Peripheral edema<br>• Supportive measures are usually adequate<br>• Notify MD/NP if<br>o Concurrent symptoms suggest CHF<br>o Significant discomfort<br>• Usually not responsive to diuresis (consider dose adjustment, nocturnal dosing, or adding a venodilator – ACEI/ARB)<br>Constipation, headache, dyspepsia<br>• Supportive measures<br>• Notify prescriber if symptoms persists and are problematic |
| 24 hour Holter Monitor | At the conclusion of titration phase to confirm that optimal heart rate target has been achieved | Follow titration algorithm to achieve optimal primary or secondary heart rate targets |

**Patient counseling to include:**

- Contact clinic or your physician if you have significant dizziness/lightheadedness, new or worsening SOB, developed a new rash, or are feeling extremely unwell since starting the medication. If you have fainted, go directly to the emergency and notify the clinic afterwards.

**Tapering / Discontinuation Schedule**

- Take half usual dose once daily for one week, then half usual dose every other day for one week, then stop