TEXAS Health and Human Services

Medication Audit Criteria and Guidelines

Propranolol (Inderal®), atenolol (Tenormin®), metoprolol (Lopressor®)

PEFC Approved: April 2023

Indications

If a medication is prescribed for an off-label indication, documentation in the patient chart is recommended.

Label:

- Migraine headache prophylaxis (propranolol)
- Essential tremor (propranolol)

Off Label:

- Anxiety (propranolol)
- Akathisia, antipsychotic induced (propranolol)
- Performance anxiety (propranolol)
- Aggression (propranolol)
- Migraine headache prophylaxis (atenolol, metoprolol)

Black Box Warning

Beta Blocker Cessation: Hypersensitivity to catecholamines has been observed in patients withdrawn from beta-blocker therapy; exacerbation of angina and, in some cases, myocardial infarction have occurred after abrupt discontinuation of such therapy. When discontinuing a beta blocker administered long term, particularly in patients with ischemic heart disease, gradually reduce the dosage over a period of 1 to 2 weeks and carefully monitor the patient. If angina markedly worsens or acute coronary insufficiency develops, reinstitute the beta blocker administration promptly, at least temporarily, and take other measures appropriate for the management of unstable angina. Warn patients against interruption or discontinuation of therapy without the health care provider's advice. Because coronary artery disease is common and may be unrecognized, it may be prudent not to discontinue beta blocker therapy abruptly, even in patients treated for other indications.

Contraindications

Absolute

Propranolol

- Cardiogenic shock
- Decompensated heart failure
- Sinus bradycardia
- Second or third-degree heart block
- Bronchial asthma
- Sick sinus syndrome (Inderal XL and InnoPran XL only)
- Hypersensitivity to propranolol, beta-blockers, or any component of the formulation

Atenolol

- Cardiogenic shock
- Overt/uncompensated cardiac failure
- Second and third-degree heart block
- Sinus bradycardia
- Hypersensitivity to atenolol, beta-blockers, or any component of the formulation

Metoprolol – All formulations

- Hypersensitivity to metoprolol, beta-blockers, or any component of the formulation
- Second and third-degree heart block

Metoprolol – Extended-release

- Severe bradycardia
- Cardiogenic shock
- Decompensated heart failure
- Sick sinus syndrome

Metoprolol – Immediate-release

- Sinus bradycardia
- Cardiogenic shock
- Overt heart failure
- Sick sinus syndrome
- Severe peripheral arterial circulatory disorders
- Significant first-degree heart block
- Systolic blood pressure less than 100 mmHg

Warnings and Precautions

- Hyperthyroidism
- Peripheral vascular disease
- Diabetes mellitus
- Hepatic function impairment
- Myasthenia Gravis
- Renal function impairment
- Discontinuation or rapid dose reduction
- Congestive heart failure
- Wolff-Parkinson-White syndrome (propranolol)
- Pheochromocytoma – untreated
- Bronchospastic disease

Adverse Reactions

Side Effects Which Require Medical Attention

- Dizziness
- Difficulty breathing
- Edema or swelling
- Cold hands or feet
- Tiredness or weakness
- Confusion or disorientation
- Bradycardia or hypotension
- Depression

Drug Interactions of Major Significance

See: Contraindications

See: Indiana Univ Drug Interaction Table

See: Lexicomp, Micromedex for more information

Special Populations

- Pediatrics/Adolescents: Safety and efficacy have not been established in children younger than 18 years (atenolol, metoprolol)
- Geriatric: Start at the low end of the dosing range; titrate dose carefully
- Renal:
  - Atenolol
    - CrCl 15 to 35 mL/min/1.73 m2 – Max: 50 mg/day
    - CrCl < 15 mL/min/1.73 m2 – Max: 25 mg/day
  - Metoprolol – No dose adjustment necessary
  - Propranolol ER capsules – initiate at 80 mg once daily
  - All other propranolol dosage forms – no dose adjustment necessary

- Hepatic:
  - Metoprolol – Initiate at low dose with gradual dose titration
  - Propranolol ER capsules – initiate at 80 mg once daily
  - All other propranolol dosage forms – no dose adjustment necessary
  - Atenolol – No dose adjustments necessary
- Hemodialysis:
  - Atenolol – 25 to 50 mg after each dialysis session
  - Metoprolol -Give maintenance dose following hemodialysis
  - Propranolol – No dose adjustment necessary
- Bronchospastic disease:
  - Atenolol – initial dose 50 mg; administer dose increases in divided doses
- Pregnancy and Breastfeeding:
  - Review product-specific labeling. Consider risks/benefits in reviewing medication-specific labeling

Patient Monitoring Parameters

Baseline Tests:

- Pregnancy test (females)
- ECG (Age 45 or over)
- Heart rate
- Blood pressure
- Blood glucose (patients with diabetes)

Ongoing Tests:

- Pregnancy test (females) as clinically indicated
- ECG (Age 45 or over) as clinically indicated
- Heart rate – prior to each dosage increase, quarterly, and as clinically indicated
- Blood pressure – prior to each dosage increase, quarterly, and as clinically indicated
- Blood glucose (patients with diabetes) – as clinically indicated

Dosing

- See HHSC Psychiatric Drug Formulary for dosage guidelines.
- If a medication is prescribed at dosages in excess of the Psychotropic Dosage Guidelines found in the HHS Psychiatric Drug Formulary, documentation in the patient chart is recommended.