Drug Use Research & Management Program
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Month/Year of Review: January 2014
PDL Classes: Beta Blockers

Date of Last Review: January 2012
Source Document: OSU College of Pharmacy

Current Status of PDL Class:

- Preferred Agents: ACEBUTOLOL HCL, ATENOLOL, CARVEDILOL, LABETALOL HCL, METOPROLOL TARTRATE, NADOLOL, PROPRANOLOL HCL
- Non-Preferred Agents: BETAXOLOL, BISOPROLOL, METOPROLOL SUCCINATE, NEBIVOLOL (BYSTOLIC®), PENBUTOLOL (LEVABUTOL®), PINDOLOL, TIMOLOL

Previous Conclusions and Recommendation:

- In patients with mild-moderate HF, bisoprolol, carvedilol or metoprolol succinate (ER) reduce mortality.
- In patients with severe HF, carvedilol or metoprolol succinate (ER) reduce mortality.
- In patients with recent MI, acebutolol, carvedilol, metoprolol tartrate (IR), propranolol, or timolol reduce mortality. It is important that at least one of these drugs be included in the PDL.
- All of the β-Blockers reviewed are effective in the treatment of hypertension, but there is no evidence of differences between β-blockers for blood pressure control, survival, or quality of life.
- All of the β-Blockers reviewed except carteolol reduced anginal attacks in patients in short-term studies that did not allow mortality evaluation.
- Because of their effectiveness in rate control for atrial fibrillation at least one of either atenolol, bisoprolol, carvedilol, metoprolol succinate (ER), nadolol, pindolol, or propranolol should be included in the PDL.
- The current evidence does not distinguish a difference among these beneficial β−Blockers that were tested for preventing recurrence and diminishing the severity of migraine headaches: atenolol, bisoprolol, metoprolol tartrate (IR), metoprolol succinate (ER), propranolol, propranolol LA nadolol, or timolol.
- The current evidence does not distinguish a difference among beneficial β−Blockers that were tested for reducing esophageal variceal re-bleeding: atenolol, nadolol, propranolol, or propranolol LA.
- There is no evidence of significant differences among β-blockers in safety or adverse effects.
- There is no evidence of significant differences found for one β-blocker being more effective or associated with fewer adverse effects in subgroups of patients based on demographics (race, ethnicity, gender), use of other medications, or co-morbidities.

Research Questions:

- Is there any new comparative evidence on Beta Blockers on mortality, cardiovascular events, stroke, or quality of life?
- Is there any new comparative safety evidence of Beta Blockers??
- Are there subpopulations of patients for which one medication or preparation is more effective or associated with fewer adverse effects?

Methods:

The DERP scan was used to identify any new comparative research that has emerged since the last P&T review. [1]

Conclusions and Recommendations:

- There is no new significant comparative evidence on the efficacy or safety of Beta Blockers; no further review or research needed.
- Evaluate comparative costs in executive session; Make nadolol non-preferred and grandfather patients for 12 months.

New Guidelines:

Evidence-based guidelines for the treatment of hypertension were recently released from the Eighth Joint National Committee (JNC8)[2] The following recommendations were made regarding the drug selection for the treatment of hypertension:

- The panel did not recommend Beta Blockers for the initial treatment of hypertension because in one study use of beta blockers resulted in a higher rate of the primary composite outcome of CV death, myocardial infarction, or stroke compared to use of an angiotensin receptor blocker. In other studies, beta blockers performed similar to the other recommended drug classes, or the evidence was insufficient to make a determination.

References:

1. Peterson K. Drug Effectiveness Review Project. Drug Class Review: Beta Adrenergic Blockers. Preliminary Scan Report #2. October 2013.

2. James PA, Oparil S, Carter BL, et al. 2014 evidence-based guideline for the management of high blood pressure in adults: Report from the panel members appointed to the eighth joint national committee (jnc 8). *JAMA*. 2013. doi:10.1001/jama.2013.284427.