Atenolol

NOT RECOMMENDED AS AN ESSENTIAL MEDICINE

Section: 12. Cardiovascular medicines > 12.3. Antihypertensive medicines

ATC codes: C07AB03

Indication	Essential hypertension ICD11 code: BA00.Z
INN	Atenolol
Medicine type	Chemical agent
List type	Core
Formulations	**Oral > Solid:** 50 mg ; 100 mg
EML status history	First added in 1991 (TRS 825) Changed in 1995 (TRS 867) Removed in 2011 (TRS 965)
Sex	All
Age	Adolescents and adults
Therapeutic alternatives	Medicines within the same pharmacological class can be used
Patent information	Patents have expired in most jurisdictions Read more about patents.
Wikipedia	Atenolol
DrugBank	Atenolol

Summary of evidence and Expert Committee recommendations

An application was prepared by Pharmacy Students: Sandeep Kishore, Maryam Shafaee, Mathew Price, and Rajesh Vedanthan, and Marcus Reidenberg, Professor of Pharmacology, Medicine and Public Health, New York, for the addition of bisoprolol with a square box to the Model List, replacing atenolol as the representative medicine of the class in Sections 12.1 to 12.3, and the inclusion of beta-blockers as a therapeutic class in Section 14.4 (Medicines used in heart failure). Listing is requested as a representative of its therapeutic class. The Committee noted that heart failure is an important global health issue and its prevalence is increasing worldwide due to both communicable and noncommunicable causes. Recent guidelines from the National Institute of Clinical Excellence (NICE), United Kingdom, and Heart Failure Society of America (HSFA) recommend beta-blockers for the treatment of heart failure and specifically cite metoprolol, bisoprolol, and carvedilol (1, 2). The Committee considered evidence from 3 RCTs (3-5) to support the efficacy and safety of the beta-blockers bisoprolol, metoprolol, and carvedilol in the treatment of heart failure, as well as 3 meta-analyses that found a reduction of 29% to 34% in the composite end-point of mortality or hospital admission with beta-blocker therapy in patients with heart failure (6-8). Mortality benefits have been shown in diverse patient groups, including the elderly (9), patients with diabetes (5) and without (10), patients with an ejection fraction above or below 25% (11) and patients not receiving rennin-angiotensin inhibitors (12); additionally bisoprolol can be used in patients with chronic obstructive pulmonary disease (13). The Committee noted that there is no high-quality evidence to support the use of atenolol for the treatment of heart failure. The Committee noted that there is evidence from clinical trials to support the efficacy and safety of bisoprolol for the treatment of angina (14, 15) arrhythmias (3, 16-18), and hypertension (19-21). The

Committee also took into consideration a meta-analysis (22) (5 studies, n=17671, follow-up 4.6 years) that suggested older hypertensive patients treated with atenolol have a significantly higher mortality when compared to patients treated with other classes of cardiovascular medicines. Cardiovascular mortality was also higher in the atenolol treated group than with other antihypertensive treatment, and strokes were more frequent with atenolol treatment. The Committee noted that on a cost per dose basis bisoprolol was cheaper than metoprolol and carvedilol. The Committee concluded that there was sufficient evidence of efficacy and safety compared to atenolol to support the request for bisoprolol to become the representative beta-blocker in sections 12.1 to 12.3 and also recommended, based on evidence of efficacy, safety, and cost–effectiveness, that bisoprolol should be added to the Model List for the treatment of heart failure. Due to the similarities between bisoprolol and metoprolol in terms of efficacy, the Committee decided to add bisoprolol with a square box for this indication. It was noted that country programmes could choose between bisoprolol, metoprolol, or carvedilol, but that there were increasingly reasons not to select atenolol as the sole beta-blocker provided. References: 1. Chronic heart failure: management of chronic heart failure in adults in primary and secondary care. Full guidelines. London, National Institute for Health and Clinical Excellence, 2010 (http://www.nice.org.uk/CG108, accessed 21 September 2011). 2. HFSA. Heart Failure Society of America 2010 comprehensive heart failure practice guideline. Journal of Cardiac Failure, 2010, 16(6):e1–194. 3. CIBIS II investigators and committees. The cardiac insufficiency bisoprolol study II (CIBIS II): a randomised trial. The Lancet, 1999, 353:9–13. 4. MERIT-HF Study Group. 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