Nebivolol in the Management of Essential Hypertension
A Review

Wendy McNeely and Karen L. Goa
Adis International Limited, Auckland, New Zealand

Various sections of the manuscript reviewed by:
J. Chalmers, Royal North Shore Hospital, Sydney, New South Wales, Australia; G. Cheymol, Faculty of Medicine Saint-Antoine, Laboratory of Pharmacology, Paris, France; J. De Crée, Clinical Research Unit, St. Bartholomeus, Jan Palfijn Hospital, Merksem, Belgium; W.E. Derman, University of Cape Town, Sport Science Institute of South Africa, Cape Town, South Africa; A. Himmelmann, Department of Clinical Pharmacology, Sahlgrenska University Hospital, Gothenburg, Sweden; N.M. Kaplan, Hypertension Division, University of Texas South- western Medical Center, Dallas, Texas, USA; Y. Lacourcière, Hypertension Research Unit, Research Centre CHUL, Sainte-Foy, Quebec, Canada; L. Poirier, Hypertension Research Unit, Research Centre CHUL, Sainte-Foy, Quebec, Canada; F. R. Taylor, The Surgery, Barton, Bedfordshire, England; O. Uhlir, Institute for Postgraduate Medicine, Cardiology Department, Prague, Czech Republic.

Data Selection
Sources: Medical literature published in any language since 1966 on nebivolol, identified using AdisBase (a proprietary database of Adis International, Auckland, New Zealand), Medline and EMBASE. Additional references were identified from the reference lists of published articles. Bibliographical information, including contributory unpublished data, was also requested from the company developing the drug.

Search strategy: AdisBase search terms were ‘nebivolol’ and ‘hypertension’. Medline and EMBASE search terms were ‘nebivolol’ and ‘hypertension’. Searches were last updated 12 May 1998.

Selection: Studies in patients with hypertension with or without comorbid conditions who received nebivolol. Inclusion of studies was based mainly on the methods section of the trials. When available, large, well controlled trials with appropriate statistical methodology were preferred.

Relevant pharmacodynamic and pharmacokinetic data are also included.

Index terms: hypertension, nebivolol, pharmacokinetics, pharmacodynamics, therapeutic use.

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Summary

Abstract

Nebivolol is a lipophilic β₁-blocker. It is devoid of intrinsic sympathomimetic or membrane stabilising activity but appears to have nitric oxide-mediated vasodilatory effects. Nebivolol is administered as a racemic mixture of equal proportions of d- and l-enantiomers. The drug does not significantly influence glucose or plasma lipid metabolism and appears to have a protective effect on left ventricular function.

At the recommended dosage (5mg once daily) nebivolol reduces resting diastolic blood pressure as effectively as standard therapeutic dosages of atenolol, metoprolol, lisinopril and nifedipine, as shown in comparative trials. Nebivolol reduced blood pressure significantly more than enalapril 10mg daily in the short but not the long term, although the enalapril dose may not have been optimal. Nebivolol has an additive effect in combination with hydrochlorothiazide.

Standing blood pressure and/or mean 24-hour ambulatory blood pressure is significantly and similarly reduced with nebivolol, atenolol or nifedipine. Nebivolol tended to prevent increases in early morning blood pressure better than nifedipine.

Overall response rates to nebivolol therapy (a decrease in sitting/supine diastolic blood pressure to ≤90mm Hg or a 10% or ≥10mm Hg fall in diastolic blood pressure) ranged from 58 to 81% after 4 to 52 weeks’ treatment. In comparative studies, response rates were greater in nebivolol than in enalapril or metoprolol recipients, but not significantly different from those in atenolol or nifedipine recipients.

Nebivolol 5mg once daily is well tolerated in patients with hypertension. Adverse events are infrequent, transient and mild to moderate. Those reported most often include headache, fatigue, paraesthesias and dizziness. Several studies reported no signs of orthostatic hypotension with nebivolol.

Comparative trials revealed no significant differences between the frequency and severity of adverse events in patients receiving nebivolol, atenolol, enalapril or placebo; however, the overall incidence of adverse events was greater with nifedipine or metoprolol. Some atenolol or enalapril, but not nebivolol, recipients reported impotence or decreased libido during therapy.