Measurement of Blood Pressure in the Office

To the Editor:

The algorithm for office blood pressure recently proposed by Myers et al.1 does not allow for the discernment of isolated clinic or masked hypertension. In a recent study we measured observed automated blood pressure (nurse present), unobserved automated blood pressure (3 readings at 3-minute intervals after 5 minutes of rest), and ambulatory blood pressure in groups of subjects with normal blood pressure, isolated clinic hypertension, and untreated essential hypertension. Mean daytime awake and automated unobserved blood pressures were similar in subjects with isolated clinic hypertension, whereas in normotensive and hypertensive groups, mean daytime awake blood pressures were similar to observed automated blood pressures (Table). Applying the proposed algorithm, 29 subjects (75%) with isolated clinic hypertension would go along the “continue-to-follow” pathway.

Isolated clinic hypertension is known to be associated with an increased risk of both diabetes mellitus2 and hypertension.3 Moreover, in our study, impaired glucose tolerance was a common finding in subjects with isolated clinic hypertension, even in subjects with normal fasting glucose.4 There is currently no outcome data to suggest that isolated clinic hypertension subjects who go along the proposed “continue-to-follow” pathway have any less risk of future cardiovascular events than those who go along the proposed “home or 24-hour ambulatory blood pressure monitoring” pathway. Until outcome data are available for unobserved automated blood pressure readings, all subjects with isolated clinic hypertension need home and/or 24-hour ambulatory blood pressure monitoring over time to be able to discern if and when these patients develop sustained hypertension. This is particularly important given the frequency of impaired glucose tolerance in these subjects.

There is another important methodological issue in the article by Myers et al1 that needs to be considered. The Bland-Altman plots suggest that the relationship between the average of the 2 blood pressures increases, indicating likely heteroscedacity. Hence, using normal 95% CIs on untransformed data may not be the correct technique to use, as was highlighted in a recent review of the Bland-Altman method by Ludbrook.5

Sources of Funding

C.A.M. was supported by a departmental scholarship grant.

Disclosures

None.

Catherine A. Martin
Department of Vascular Sciences and Medicine and Monash University Centre for Vascular Health
Southern Health
Dandenong, Australia
Monash University
Clayton, Australia

James D. Cameron
La Trobe University
Bundoora, Australia
Monash Heart
Southern Health
Clayton, Australia

Suzi S. Chen

Barry P. McGrath
Department of Vascular Sciences and Medicine and Monash University Centre for Vascular Health
Southern Health
Dandenong, Australia
Monash University
Clayton, Australia


Measurement of Blood Pressure in the Office
Catherine A. Martin, James D. Cameron, Suzi S. Chen and Barry P. McGrath

Hypertension. 2010;56:e11; originally published online May 17, 2010;
doi: 10.1161/HYPERTENSIONAHA.110.154625
Hypertension is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 2010 American Heart Association, Inc. All rights reserved.
Print ISSN: 0194-911X. Online ISSN: 1524-4563

The online version of this article, along with updated information and services, is located on the
World Wide Web at:
http://hyper.ahajournals.org/content/56/1/e11

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published
in Hypertension can be obtained via RightsLink, a service of the Copyright Clearance Center, not the Editorial
Office. Once the online version of the published article for which permission is being requested is located,
click Request Permissions in the middle column of the Web page under Services. Further information about
this process is available in the Permissions and Rights Question and Answer document.

Reprints: Information about reprints can be found online at:
http://www.lww.com/reprints

Subscriptions: Information about subscribing to Hypertension is online at:
http://hyper.ahajournals.org//subscriptions/