

# Hypertension

JOURNAL OF THE AMERICAN HEART ASSOCIATION



*Learn and Live*<sup>SM</sup>

## **Review of Hypertension in Sub-Saharan Africa: A Comment From the Seychelles**

Pascal Bovet, Conrad Shamlaye, Anne Gabriel and Fred Paccaud  
*Hypertension* 2008;51:e24-; originally published online Mar 10, 2008;

DOI: 10.1161/HYPERTENSIONAHA.107.109165

Hypertension is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75214

Copyright © 2008 American Heart Association. 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/cgi/content/full/51/4/e24>

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

Permissions: Permissions & Rights Desk, Lippincott Williams & Wilkins, a division of Wolters Kluwer Health, 351 West Camden Street, Baltimore, MD 21202-2436. Phone: 410-528-4050. Fax: 410-528-8550. E-mail:  
[journalpermissions@lww.com](mailto:journalpermissions@lww.com)

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

## Review of Hypertension in Sub-Saharan Africa: A Comment From the Seychelles

To the Editor:

Addo et al<sup>1</sup> recently reviewed the situation of hypertension in Sub-Saharan Africa. We would like to add some information from the Republic of Seychelles, a middle-income island state located 1800 km east of Kenya in which >80% of the population is of African descent.

The age- and sex-specific prevalence of high blood pressure (BP) has been assessed in 3 independent population-based surveys in 1989, 1994, and 2004.<sup>2-4</sup> In 2004, the age-standardized prevalence of hypertension (BP  $\geq$ 140/90 mm Hg or under treatment) was 44% in men and 36% in women.<sup>4</sup> Among hypertensive persons, 55% of men and 75% of women were aware of having hypertension, 49% of men and 72% of women were treated, and 12% of men and 30% of women had BP controlled (BP <140/90 mm Hg). Prevalence of high BP, but also awareness and control, were therefore higher in Seychelles than in most populations reviewed by Addo et al.<sup>1</sup> There is, however, a secular decline in the age-standardized prevalence of high BP,<sup>4</sup> and vital statistics indicate a consequential decline in stroke mortality during the past 15 years.

The high prevalence of high BP and the low level of BP control in Seychelles have occurred despite a favorable situation. The population is well aware of hypertension,<sup>3</sup> likely a result of sustained awareness campaigns since the late 1980s. Other studies in Seychelles have shown fairly low salt intake ( $\approx$ 6 g per day), reflecting a diet based largely on fish and unsalted rice. Health care is provided at no direct cost through an easily accessible network of health centers, and  $\geq$ 1 medication from all of the antihypertensive classes is available. However, we found that only 26% of newly identified hypertensive persons maintained satisfactory drug compliance over a 12-month period.<sup>5</sup> This clearly limits the effectiveness of hypertension treatment in the general population. A further problem of the screen-and-treat strategy is the poor BP control among those treated (often with 2 or 3 antihypertensive drugs).<sup>4</sup>

These findings do not dismiss the importance of providing appropriate medication to high-risk individuals but further emphasize the critical need for public health measures that impact on the determinants of BP in the entire population. A population approach is further supported by the low proportion of the general population at low risk for cardiovascular disease,  $\approx$ 20% at age 45 to 64 years in Seychelles.<sup>6</sup> This situation may not be unique in Sub-Saharan Africa, because a high prevalence of cardiovascular risk factors is increasingly reported in the continent.

Many authors have called for better data on cardiovascular disease in Africa and stressed the need to address high BP through population-based interventions. The experience in the Seychelles over the past 15 years shows, indeed, the crucial role of an information system to identify

and size up a problem and then monitor and evaluate the clinical and public health response to this problem.

## Sources of Funding

The surveys benefited from support from the Ministry of Health of the Republic of Seychelles (all three years); Seychelles Marketing Board and some other local parastatal companies (1994, 2004); Swiss cantonal and federal authorities (1989); Swiss National Foundation for Science (1994, 2004); several departments of the University of Lausanne, Switzerland (1989, 1994, 2004); Canton Institute for Clinical Chemistry, St. Gallen Switzerland (1994, 2004); and the World Health Organization (2004).

## Disclosures

None.

**Pascal Bovet**

Ministry of Health and Social Development  
Victoria, Republic of Seychelles  
Institute of Social and Preventive Medicine  
University of Lausanne  
Lausanne, Switzerland

**Conrad Shamlaye**

**Anne Gabriel**

Ministry of Health and Social Development  
Victoria, Republic of Seychelles

**Fred Paccaud**

Institute of Social and Preventive Medicine  
University of Lausanne  
Lausanne, Switzerland

1. Addo J, Smeeth L, Leon DA. Hypertension in Sub-Saharan Africa. A systematic review. *Hypertension*. 2007;50:1012-1018.
2. Bovet P, Shamlaye C, Kitua A, Riesen WF, Paccaud F, Darioli R. High prevalence of cardiovascular risk factors in the Seychelles (Indian Ocean). *Arterioscl Thromb*. 1991;11:1730-1736.
3. Aubert L, Bovet P, Gervasoni JP, Rwebogora A, Waeber B, Paccaud F. Knowledge, attitudes and practices on hypertension in a country in epidemiologic transition. *Hypertension*. 1998;31:1136-1145.
4. Danon-Hersch N, Chiolero A, Shamlaye C, Paccaud F, Bovet P. Decreasing relationship between body mass index and blood pressure over time. *Epidemiology*. 2007;18:493-500.
5. Bovet P, Burnier M, Madeleine G, Waeber B, Paccaud P. Monitoring one-year compliance to antihypertension medication in the Seychelles. *Bull World Health Org*. 2002;80:33-39.
6. Bovet P, William J, Paccaud F. Low prevalence of individuals with optimal or borderline levels of cardiovascular risk factors extends to rapidly developing countries. *Arch Int Med*. 2007;167:2262-2263.