



WHL · NEWSLETTER

News from the World Hypertension League (WHL).
A division of the International Society of Hypertension, and in official relations with the
World Health Organization.

No. 78, August 2001

Editorial

Automated Blood Pressure Devices



Dr. Sheldon G. Sheps

It has been 100 years since the introduction of the mercury sphygmomanometer by Riva-Rocci. As we begin this new millennium, Europe and the United States are working towards phasing out the traditional mercury sphygmomanometer devices

because of mercury's potential threat to human health and the environment. The U.S. Environmental Protection Agency and the American Hospital Association have put forth a memorandum for achieving the goal of virtually eliminating mercury-containing waste from the health care industry by the year 2005.

As a result of these efforts, a variety of devices are being manufactured to replace the mercury sphygmomanometer, and the cost of the equipment is declining rapidly. With the phasing out of mercury, important issues regarding blood pressure measurement will need to be addressed. For example, the use of aneroid devices eliminates mercury, but these devices must be subjected to meticulous surveillance programs to prevent inaccuracies in blood pressure readings. In addition, these devices still allow for the potential of human error by requiring expertise in auscultation.

While automated devices may reduce the possibility of human error, they also pose unique challenges. Automated devices use different blood pressure measuring algorithms for calculation of systolic and diastolic measurements, and these can be proprietary. Thus, it may be difficult to determine the accuracy of this equipment. For instance, one device has been

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WHL News

Prevention of coronary heart disease: Good news and bad news

In the past several years there has been great progress in reduction of morbidity and mortality associated with coronary heart disease (CHD). Randomized clinical trials have demonstrated the beneficial effects of β -blockers, statins, and aspirin in preventing recurrent disease and death. Addition of an ACE-inhibitor may also decrease morbidity and mortality in patients with CHD. *This is the good news!*

Unfortunately, there is bad news. In a recent report (*Lancet* 2001; **357**:995–1001), patients with CHD were surveyed after hospitalization for CHD events in 1995–96 and again in 1999–2000. The initial survey identified a high prevalence of risk factors that were modifiable by lifestyle changes. These patients had a strong impetus for change: angioplasty, bypass surgery or recent myocardial infarction. The surveys (EUROASPIRE I & II) were carried out in nine European countries. The results of the second survey were disappointing. The prevalence of smoking was unchanged 19.4 vs. 20.8%; obesity increased substantially (BMI >30 kg/m²) 25.3 to 32.8%. As a result, diabetes mellitus increased by 18–20%.

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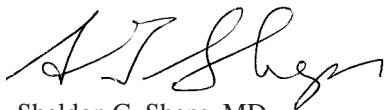
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reported to have digit skipping bias. Independent validation remains a critical issue for the use of these devices. The appropriate cuff must be used, based not only on arm size but also it should be one designed for use with the particular automated device chosen.

The phasing out of mercury will create a new science to address the accuracy of automated devices. The technology is available to provide acceptable automated alternatives to mercury, but the medical community must insist on certain standards. In the coming years, new issues regarding validation of automatic devices and procedures for maintaining accuracy of blood pressure equipment will need to be addressed.

In the meantime, the busy clinician should consider the following points: (1) If aneroid devices are to be used, they must be regularly calibrated. Non-mercury pressure sensors are available for this purpose. (2) Automated devices need to be independently validated. They also require regular calibration. (3) The need to select an appropriately sized cuff becomes important every time the patient's weight significantly changes. Clinicians should consider re-measuring arm size to ensure the correct cuff is being used.



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The percent with high blood pressure ($\geq 140/90$ mmHg) was the same (55.4 vs. 53.9%), and more than 25% in each survey had blood pressure $\geq 160/95$. However, prevalence of high cholesterol (≥ 5.0 mmol/L) did decrease from 86.2 to 58.8%, presumably due to the use of statins.

The lesson from this study: Lifestyle changes are difficult! Health care workers need to coordinate and intensify their patient-education efforts.

Patrick J. Mulrow
Secretary General

Message from the Editor

Blood pressure measurement remains a crucial issue in the diagnosis and treatment control of hypertension. The performance and validity of blood pressure measurement devices are, therefore, of major importance. As the demand for blood pressure measurement devices is continuously growing, mainly due to the introduction of patients monitoring their own blood pressure, new measurement techniques have been developed and new devices continue to be placed on the market. The need for careful evaluation and validation of these new devices is apparent.

This edition of the WHL Newsletter focuses on blood pressure measurement devices. With the kind support of OMRON Healthcare we are able to provide you with a reprint of the recent clinical review published in the British Medical Journal (*BMJ* 2001; **322**: 531–6). On behalf of the European Society of Hypertension Working Group on Blood Pressure Monitoring, E. O'Brien summarized the results of validation studies for different blood pressure measurement devices and presents the resulting recommendations.

The Editorial team of the WHL Newsletter hopes to have provided useful information on this topic. However, there might also be the need for further discussion. I would like to encourage you to comment on issues that have been raised or to share concerns or opinions with the other readers.

Letters to the editor are always welcome!

Anja Kroke
Editor

People

Dr. Alberto Gallo is the new president of the **Argentine Society of Hypertension**. The address of the Society is: Permanent Secretary, M. T. de Alvear 2270, 1122 Buenos Aires, Argentina.
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In November 2000 at the General Assembly of the **Paraguayan Society of Hypertension**, Dr. Miryan O. Ayala R. was re-elected for a two-year term as president. The address is: Pitiantuta 613, Asunción, Paraguay.

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Report from the 11th Congress of the European Society of Hypertension in Milan, Italy

The 11th meeting of the European Society of Hypertension was held in the beautiful headquarters of the Milan University from June 15 to 19, 2001.

The meeting enjoyed the record participation of more than 5,000 investigators and clinicians from all European and many non-European countries. A large number of pre-planned events (15 State-of-the-art Lectures, 15 Topical and Breakfast Workshops, 5 Teaching Sessions, Working Groups Seminars, etc.) as well as a great number of oral and poster presentations including more than 900 original research contributions were available for the attendees. Several clinical trials were presented in a number of plenary sessions, with a highlight from the first report of the PROGRESS (secondary prevention of stroke) and the ELSA (antiatherogenic effects of antihypertensive treatment) trials. There were also presentations of additional data from recent trials on the differential nephroprotective effects of different antihypertensive treatments. In addition, 25 Satellite Symposia organized by pharmaceutical industries or by investigators held before, during and after the meeting allowed specific areas of hypertension research to be discussed in more depth.



Professor Giuseppe Mancia, Chairman and Organizing Committee of the ESH-Meeting

The great success of the meeting shows how vibrant hypertension research is and how its outcome is perceived as important for public health.

All this bears promise for even greater success when the European and International Society of Hypertension will jointly hold their annual meeting in Prague next year.

Professor Giuseppe Mancia

Hypertension in diabetes and blood pressure control – trends during the late 1990's in a repeated national survey from Sweden (Data presented by Dr. P. Nilsson at the ESH Meeting)

Hypertension is an important cardiovascular risk factor in diabetes mellitus. Intervention studies, such as the UKPDS and HOT, have shown the benefits of tight blood pressure (BP) control. However, in the diabetic population at large the level of BP control is often far from optimal. According to an observational analysis of the UKPDS (*BMJ* 2000; **321**: 412–9), a decrease of 10 mmHg in mean systolic blood pressure levels corresponds to a reduction of 12% for any complications related to diabetes and 15% for deaths related to diabetes. These UK outcome data have been applied to findings in hypertensive diabetes patients from Sweden.

Methods: A National Diabetes Register (NDR) was launched in 1996 aiming at the registration of demographic data, treatment modalities, and risk factors in consecutive patients followed in primary health care (PHC) or at the hospital level. Each year the clinical data provided have been collected centrally, and then re-distributed to the providers, showing aggregated data of each PHC center as compared to national means. Our data represent approximately 15% of the total number of diabetes patients in PHC, but are collected from all parts of Sweden at 120 PHC centers.

Results: In all, 12,763 (52% males) PHC diabetes patients were registered in 1996 and 13,950 (53% males) in 1998 as two independent samples. Among diabetes patients older than 30 years, presumably type 2 diabetes, the total prevalence of treated hypertension was 52% in 1996 vs. 55% in 1998. The proportion of patients with combined treated hypertension and diabetes who were well controlled according to UKPDS standards ($\leq 140/85$ mmHg) was 20% in 1996 (median BP 158/85 mmHg) vs. 27% in 1998 (median BP 152/80 mmHg). This decrease of -6 mmHg median systolic BP corresponds to a calculated reduction of -7.2% for any diabetes complications, -9.0% for diabetes-related deaths, -6.6% for myocardial infarctions, and -7.8% for microvascular complications, based on UKPDS data.

Conclusions: In a repeated national survey of type 2 diabetes patients in PHC, it was shown that the prevalence of hypertension is high and that the level of blood pressure control is far from optimal.

People continued

Prof. Dr. Osvaldo Kohlmann, Jr, was elected President and Prof. Dr. Ayrton Pires Brandao Vice President of the **Brazilian Society of Hypertension** for the period 2001–2002. The address is: Dr. Décio Mion, Jr, Secretary General, Av. Paulista, 2073-5° andar-conj. 517/518 – Edif. Horsa I, Sao Paulo – CEP 01311-300, Brazil.
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The **Philippine Society of Hypertension** elected a new board: Their president is Dr. Gregorio B. Patacsil, Jr., Dr. Esperanza I. Cabral is vice president, and Dr. Nelson S. Abelardo is Secretary. The address is: Unit 33, Facilities Centre, #548 Shaw Boulevard, Mandaluyong City, Metro Manila, The Philippines.
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Impressum

The objectives of the WHL are to promote the detection, control and prevention of arterial hypertension in populations. The World Hypertension League (WHL) is a federation of leagues, societies and other national bodies devoted to this goal. Individual membership is not possible. The WHL is a division of the International Society of Hypertension (ISH), and is in official relations with the World Health Organization (WHO).

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Calendar

Third Scientific Meeting of the Venezuelan Society of Clinical Pharmacology and Therapeutics
 November 8–9, 2001
 Caracas, Venezuela
Information: Drs. Manuel Velasco
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 E-mail: veloscom@cantv.net

13th Scientific Session of the Saudi Heart Association
 January 22–24, 2002
 Riyadh, Saudi Arabia
Information:
 Saudi Heart Association
 Fax: (+966) 1 467 2553
 E-mail: saud-hass@ksu.edu.sa

National Conference “Cardiovascular Health for all: Meeting the challenge of healthy people 2010” of the National Heart, Lung and Blood Institute
 April 11–13, 2002
 Washington, DC, USA
Information:
 National Cardiovascular Health Conference,
 10720 Columbia Pike
 Silver Spring, MD 20901, USA
 Fax: (+1) 703 706 8229
 Web Site: www.cvh2002.net

2nd European Conference on Management of Coronary Heart Disease
 April 13–15, 2002
 Nice, France
Information:
 Castle House Medical Conferences,
 3 Linden Close, Tunbridge Wells,
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 Fax: (+44) 1892 517 773
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Fourth Latin American Congress of Hypertension (LASH)
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