

Hypertension, the Silent Killer

Hypertension, also known as elevated blood pressure (BP), is a well established major risk factor for cardiovascular disease (CVD), stroke and chronic kidney disease which represent leading causes of morbidity and mortality worldwide.

Hypertension is defined as BP levels of $\geq 140/90$ mmHg, when measured in the office (clinic) and $\geq 135/85$ mmHg when recorded at home. About 75-80% of subjects have grade 1 (mild) hypertension defined as BP levels of 140-160/90-100 mmHg. Grade 1 hypertension is generally asymptomatic but represents the major cause of cardiovascular and renal events. Hence, this health burden is known as the silent killer.

BP is characterized by a circadian rhythm with a daytime BP level of $\leq 135/85$ mmHg and a nighttime BP of $\leq 120/70$. A nighttime BP $> 120/70$, recorded by ambulatory BP monitoring, is considered as nocturnal hypertension and represents a risk for cardiorenal events.

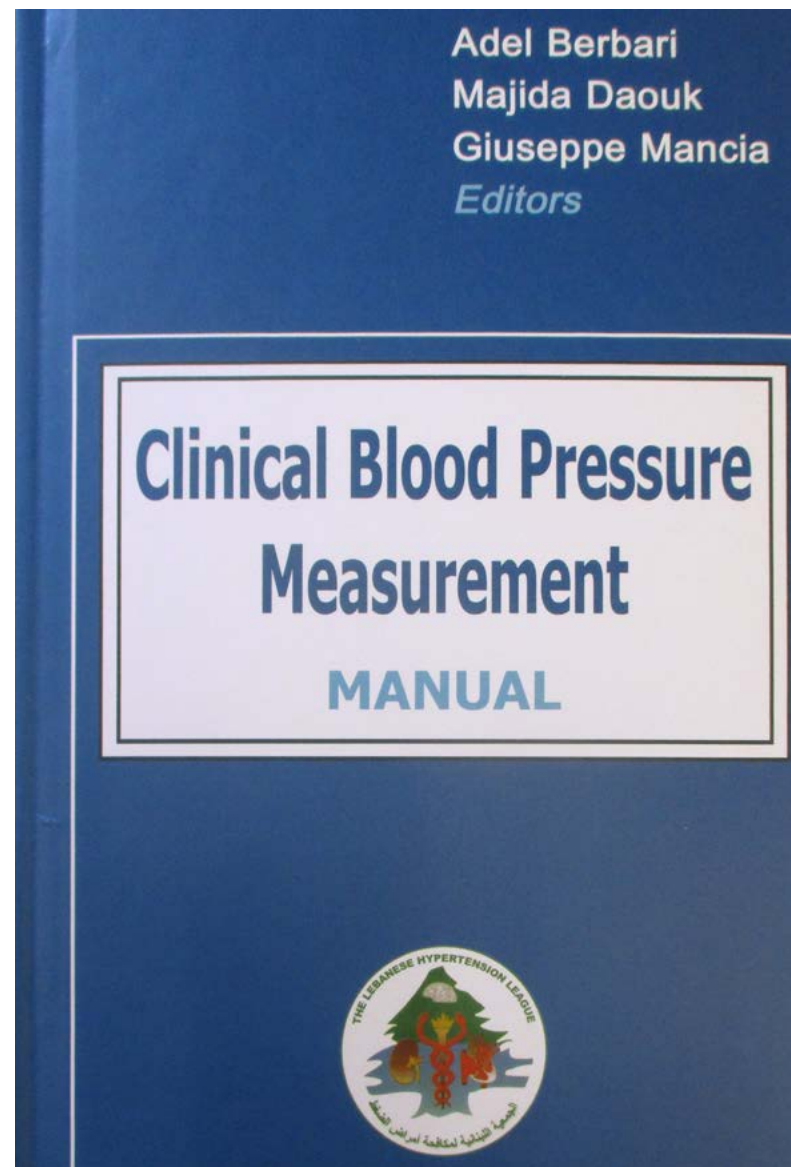
Hypertension is classified as primary (or essential) and secondary hypertension, with the former representing over 90% of the subjects.

The etiology of hypertension remains undetermined, but appears to be multifactorial. Increasing obesity, ageing of the population, increased consumption of salt-rich food items and use of illicit and recreational agents are major contributors to elevation of BP. Use of certain medicines such as non-steroidal anti-inflammatory drugs and licorice is associated with additional elevation in BP. In addition, certain lifestyle measures have adverse reactions on BP. Smoking (both cigarette and narjileh-shisha) and high alcohol consumption can cause a significant elevation in BP and may even interfere with drug controlled BP.

The prevalence of hypertension is increasing worldwide especially in underdeveloped countries. About 1/3 of the world population suffer from elevated BP. This increasing trend is attributed to the obesity epidemic and ageing of the population.

The onset of hypertension begins in early adulthood. However abnormal factors in infancy and childhood such as low birth weight and abnormal dietary patterns predispose to BP elevation in early life leading to development of hypertension in adulthood.

BP reduction both by lifestyle and pharmacologic approaches is very effective in reducing hypertension-



associated cardiorenal complications. Although a large number of safe and effective antihypertensive drugs are available, control of hypertension remains low. This is due to the poor awareness of the risk of hypertension and poor patient compliance with long-term antihypertensive drug therapy.

Control of hypertension and its associated consequences requires healthy lifestyle measures, administration of adequate drug dosage, and treatment of associated metabolic disorders such as dyslipidemia and diabetes.

Regular office (clinic) and home BP recording starting in childhood, represents the only approach to detect elevated BP levels and hypertension.



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Dr Berbari received his MD degree from AUB in 1959. Did his residency training in Internal Medicine at AUB (1959-1963) and later served as a research associate at the Peter Bent Brigham Hospital Hypertension Unit in Boston, Massachusetts (1963-1966). Dr Berbari joined the Medical Faculty at AUB in 1966 and rose through the ranks to become full Professor of Internal Medicine and Physiology and Director of the Division of Hypertension in 1977. This Division became accredited as a Hypertension Excellence Center by the European Society of Hypertension in 2008.

Dr Berbari received numerous awards. To mention a few: the Service Appreciation Award of the Department of Internal Medicine year 2000, the Distinguished Leadership Award, American Biographical Institute, the International Peace Prize of the United Cultural Convention of the

United States of America Year 2003, the Merit Award, Medical Alumni Association of the American University of Beirut year 2003, the shield of the Lebanese Order of Physician year 2003 and of the Lebanese Society of Nephrology and Hypertension year 2004, Merit Award for Career Excellence in Teaching Department of Internal Medicine year 2016, AUB President Award for durable and dedicated service year 2016 – in addition to several medallions from Oman, Saudi Arabia, Lebanon and the Executive Board World Hypertension League, June 27, 2013

Dr Berbari is a member of the Sigma Xi Club Honor Society, the Lebanese Society for the Advancement of Science (LAAS), the Lebanese Society of Nephrology member since 1970 – and President 1975-1993), International Society of Hypertension, the International Society of Nephrology, the International College of Angiology, the International Society of Peritoneal Dialysis. Dr Berbari is a Founding member of the American Society of Hypertension, a fellow of the American Heart Association and a number of professional societies in Europe, the United States. He is also the founding member of the Lebanese Hypertension League. He is cited in the "Who is Who" of Lebanon, the Prestigious Marquis biographies – in addition to being a member of most of the professional associations in Hypertension, Heart, Physiology and Sciences.

Dr Berbari has 86 publications in refereed journals, 57 abstracts, 11 books in addition to the recently published book which describes the various methods for BP recording,

including office (clinic) BP, ambulatory BP monitoring and home BP. Dr Berbari has been the Editor-in-chief of the Lebanese Medical Journal since 1993 – and served on the editorial boards of several journals in addition to being a reviewer, a visiting professor and an examiner in several institutions.