

Arterial Hypertension Impact and Cardiovascular Risk Factors in Latin America

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Latin America (LA) is undergoing a burden of cardiovascular diseases (CVD) and diabetes mellitus type 2 that are responsible for 46% of total reported deaths¹. This is a general phenomenon in developing countries that in 2001 accounted for 79% of all chronic disease-related deaths in the world². Moreover, the adaptation to occidental life styles in developing countries has given rise to an increase in the prevalence of overweight, obesity, hypertension, metabolic syndrome, diabetes mellitus type 2 and CVD³. In addition, changes in nutritional habits and physical activity are the main characteristics involved in the fast economic transition experienced by these countries in recent years⁴. Around 30% of all deaths in the world are attributable to cardiovascular diseases (CVD). Between them, coronary ischemia and stroke are the most frequent causes, being responsible for almost 13 million deaths per year¹. Over these pathologies, arterial hypertension (HT) is the most important risk factor. The increased prevalence of this pathology explains the progressive augmentation of cardiovascular disease in all countries¹.

In past decades in LA life expectancy has increased and so have the main causes of death. Better conditions, development of basic sanitation (potable water) and health programs such as vaccination campaigns have reduced child deaths together with a significant reduction in deaths produced by infectious diseases. However, a threat has arisen associated with new lifestyles related to globalization, characterized by the increased intake of foods with high levels of saturated fats and refined sugars, decreased physical activity, a higher proportion of old people, increased tobacco dependence and urban growth⁵⁻⁸. As a consequence of this, changes in biological characteristics and/or lifestyles have produced a significant increase in the prevalence of cardiovascular risk factors such as arterial

hypertension, obesity, dyslipidemia, metabolic syndrome and type 2 diabetes⁹.

On the other hand, it is very difficult, in LA or other countries, to provide accurate data on the prevalence of arterial hypertension and other risk factors. This is due to the great genetic and epigenetic variability caused by differences in the intra and inter-territorial distribution, social stress (economical intake, education and access to health systems) that have great influence on the incidence and prevalence of the different risk factors^{5,9}.

Recently, the PURE study reported that arterial hypertension prevalence is 50.8% in Argentina, 52.6% in Brazil, 46.7% in Chile and 37.5% in Colombia. The percentage of individuals aware of their hypertension was 57%, those under treatment 52.8% and only 36.3% of treated patients were with BP values lower than 140/90mmHg. All these data indicate that in LA the rate of detection, treatment and BP control are deficient¹⁰. This was supported by a previous study in LA¹¹ showing that the prevalence of cardiovascular risk factors such as arterial hypertension was 18%, dyslipidemia: 14%, diabetes: 7%, overweight or obesity: 23% and tobacco: 30%.

Additionally, in LA cardiovascular diseases work against efforts to fight poverty, and support inequities in health related to economical incomes, gender and race. For instance, living in a poor neighborhood is related to high risk of malnutrition, obesity, arterial hypertension, dyslipidemia, diabetes and metabolic syndrome resulting from a lack of access to healthy foods, regular physical activity and education. To these we must add that there are different black populations in LA as well as descendants differing from the original black people. In these individuals, cardiovascular risk factors are more frequent and the impact on their health is worse

than in white people. We must also include in this group of special populations those living in mountains (Andineans) compared to those living in the coasts or center of the countries.

In conclusion, these are the fundamental causes having a major impact in high cardiovascular risk in LA that is included in what we call low and medium income countries^{6-8, 11,12}. In these conditions, the health impact of cardiovascular diseases is more frequently observed due to social inequities, and maintains a social gap related to the economic possibilities of each social strata¹⁰⁻¹².

In addition, easy access to medical assistance and cardiovascular drugs must be also considered since increasing the control rate of high blood pressure in LA must be an immediate action to be taken. This is supported by the fact that, once arterial hypertension was diagnosed, blood pressure reduction of 10/5mmHg is able to significantly reduce stroke (36%), cardiac failure events (38%), coronary ischemic events (20%), cardiovascular mortality (16%) and all-cause mortality (10%)¹³. In addition, the use of any antihypertensive drug, as either mono therapy or combination, by decreasing blood pressure levels, is able to reduce cardiovascular morbi-mortality¹⁴.

Finally, a recent WHO report informed that it is cost-effective to increase prevention, diagnosis and treatment of arterial hypertension when cardiovascular risk is not present or, when this risk is low to significantly reduce cardiovascular disease prevalence¹⁶.

Accordingly, the Latin-American Society of Hypertension (LASH) proposed to start a project in accordance with the Pan American Health Organization (PAHO) directives on chronic non-transmissible diseases to perform a Primary and Secondary Prevention Program on Hypertension in each country in LA, named 20 / 20. The aim of this program is to target, for 2020, a 20% increase in blood pressure control and to reduce morbi/mortality by 20%. This will be achieved through optimization of prevention and reduction of arterial hypertension prevalence, and the morbi-mortality emerging from other associated diseases resulting from uncontrolled arterial hypertension such as myocardial infarction, coronary arterial disease, stroke and heart or kidney failure.

Accordingly, preventive strategies will be developed directed at lay and medical populations, focusing on educational programs for healthy life styles

and the importance of diagnosis and control not only of blood pressure levels but also associated cardiovascular and metabolic diseases (dyslipidemia, insulin resistance, diabetes, overweight, obesity and metabolic syndrome).

For medical practitioners, courses to update and emphasize the pathophysiological basis, diagnosis and treatment of hypertension and related cardiovascular risk factors will be performed through classroom and/or internet activities.

All proposed activities for LA may be summarized in the following table:

Governance	Regionally proposed (LASH, PAHO) but locally adapted to reach all social strata.	
Resources	Academics	From all countries in LA
	Economical	Health System and Private resources
Financing	Together with the PAHO for each country.	
Delivery	PAHO centralized and locally organized	
Health Care	Responsible in each country to perform an epidemiological data base to evaluate changes in diagnosis, treatment and changes in cardiovascular risk factors.	
Cardiovascular Outcomes	In accordance to the 25 / 25 WHO proposal to develop the 20 / 20 LASH/PAHO project to reduce in a 20% the burden of arterial hypertension in LA.	

To maintain those proposals, the needs are:

1. Continue the production and publication of the Latin American Guidelines specifically on Hypertension¹⁷ that, in this year, the fourth update will be published and, taking into account the increase of Obesity, Diabetes and Metabolic Syndrome, the Latin American Guidelines on Hypertension, Type 2 Diabetes and Metabolic Syndrome⁹.
2. Start with the policies relating to prevention, diagnosis and treatment of hypertension and risk factors associated (life style changes, salt intake, smoking, weight control, etc).
3. Contact with health authorities in each country and the PAHO to facilitate access to medical assistance and treatment drugs for people with social and economical distress.

To start developing epidemiologic studies to evaluate the real situation not only of arterial hypertension in different countries but also cardiovascular risk factors and quality of life.

Accordingly project 20/20 in LA proposing the reduction of arterial hypertension by 20% for the year 2020 is an added activity to the one proposed by the World Health Organization (WHO) named 25/25, that is to say to reduce by 25% the rate of arterial hypertension for the year 2025.

To support these objectives, the ISH Regional Advisory Group (RAG) for Central and South America has given support to these activities:

2008: Latin American Consensus on Hypertension in Paraguay.

2010: VIII Latin American Congress on Hypertension organized by LASH, held in Buenos Aires, Argentina. ISH support.

2011: Latin American Consensus in Hypertension, Diabetes and Metabolic Syndrome in Colombia.

2011: ISH Teaching Seminars in Colombia and Ecuador.

2012: Latin American Congress on Arterial Hypertension (LASH) associated with the IX Congresso do Departamento de Hipertensão Arterial da SBC and the IV MERCOSUR Symposium on Arterial Hypertension and the II Symposium Luso-Brasileiro on Hypertension.

2012: ISH Summer School in Argentina. 2013: Congress of the Latin American Society of Hypertension in Venezuela.

2014: Congress of the Latin American Society of Hypertension in Ecuador.

2014: Teaching Seminar in Ecuador. 2015: Congress of the Latin American Society of Hypertension in Brazil

2015: First Congress of the Central America and Caribbean Islands Society of Hypertension, held in Costa Rica

Finally, as suggested and supported by the ISH, the Central America and Caribbean Islands Society of Hypertension was created.

- **Agustin Ramirez**

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