

Council's Corner: Hypertension Issues - a personal view

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Hypertension is never alone



The social and clinical problem of hypertension is well known all over the world. A recent publication in Lancet (1) clearly showed the progressive increase in the prevalence of hypertension all over the world and, in particular, in developing countries where an increase in the rate of the disease is associated with a parallel increase in morbidity and mortality. In most of the many millions of patients with hypertension, the elevated blood pressure values co-exist with some additional conditions responsible for a significant increase in the risk of cardiovascular disease.

A remarkable prevalence of hypertension has been described in the presence of clinical conditions intrinsically responsible for an increase in CV risk, such as diabetes, lipid disorders (either high LDL-C or triglycerides) and obesity. The relationship between hypertension and elevated levels of serum uric acid is twofold, with an increase in the prevalence of new-onset hypertension in subjects with hyperuricemia who also experience a larger relative risk of disease in the presence of established hypertension. In addition, hypertension (or a history of hypertension) is a common feature of patients with many overt cardiovascular diseases including coronary artery disease, atrial fibrillation, congestive heart failure (particularly with preserved ejection fraction) and cerebrovascular disease. Finally, a significant excess in the prevalence of hypertension has been described in patients with COPD, rheumatologic disorders, and chronic inflammatory

bowel diseases that affect a remarkable number of patients and again contribute to the burden of disease associated with hypertension. This concomitance of clinical conditions with hypertension has several important implications, since the presence of elevated BP values can negatively affect the prognosis of the primary disease and, at the same time, the treatment of hypertension can be more difficult in patients undergoing a complex treatment schedule.

Despite its importance and despite the large number of patients involved, this problem is often underestimated by the many factors involved in the management of hypertension - the physicians, the patients and the system of evidence as well.

The **physicians** are used to considering hypertension as an increase in blood pressure values, since this is easy to measure and to use as an estimate of successful or unsuccessful treatment. But hypertension also means glucose abnormalities in over 30% of patients, dyslipidemia in about 35%, hyperuricemia in more than 25% with multiple risk factors in the same patients (2) and a close correlation with the severity of hypertension. Any approach based exclusively on blood pressure control is limiting the potential impact of any preventive strategy against hypertension, by restricting the benefit to the reduction of the hemodynamic risk, without affecting the residual cardiovascular damage that is responsible for a significant increase in the rate of major CV complications also seen in patients where blood pressure values are normalized. A more comprehensive approach to the disease should be promoted with the aim of increasing the sensitivity for the whole universe of hypertensive disease, whose underestimation is probably responsible for a remarkable number of preventable cardiovascular and renal complications in the hypertensive population.

As far as the **patients** are concerned, they have some resistance to being treated for a disease that is often apparently asymptomatic, and this certainly contributes to the low levels of adherence currently observed in

hypertensive patients undergoing blood pressure lowering treatment. In addition, the administration of antihypertensive drugs is often associated with a significant incidence of untoward adverse events that further reduces the propensity for good adherence to treatment with important clinical implications beyond the disease. However, poor adherence to therapy is only a part of the poor patient-hypertension interaction that also involves the underestimation of the personal risk of cardiovascular diseases. Some experiences based on the administration of multiple choice questionnaires have clearly shown the low reliability of any self-assessment of CV risk in the population, with a large proportion of either under- or overestimation. The largest proportion of subjects who underestimate their CV risk was found among the subjects who had never measured their blood pressure values, and whose answers were based only on a sensation of well-being. Therefore, one of the next steps for the future would be to increase the individual perception of the cardiovascular risk correlated with hypertension, by a population approach that can explain the central role of high blood pressure in the identification of a multifaceted system where the increase in blood pressure values is the most accessible of a series of features requiring active control.

Finally, the position of the **system of evidence**. This has certainly promoted and supported interesting clinical research resulting in the identification of new treatment strategies that can significantly improve the management of patients with cardiovascular diseases in general and with hypertension in particular. The most typical examples are drugs like the direct oral anticoagulants (DOAC), or the recently developed PCSK-9 inhibitors, CETP-inhibitors or the SGLT-2 inhibitors that have been tested in large randomized clinical trials and have shown the capacity to reduce the rate of major CV complications in different populations of patients at risk. The successful results of such trials are certainly based on the innovative treatment strategies, but also on the characteristics of the involved populations that usually include a large proportion of hypertensive patients. Hypertension was present in over 80% of the patients involved in the trials on DOAC (3), while the percentage of patients with high blood pressure ranged from 80% to over 95% in the studies addressing the efficacy of PCSK-9 and SGLT-2 inhibitors. This implies that the benefit observed in all these studies should primarily apply to patients

with hypertension that are usually not considered as a primary component of a successful end-point, but as the expression of the natural history of the index underlying disease. This implies that when we talk about the effectiveness of these innovative treatments in terms of evidence we are usually referring to diabetic, hypercholesterolemic and "arrhythmic" patients, but no system of evidence is used to underpin the fact that most of them are, first of all, hypertensive. The consequences of such a simplistic approach is that hypertensive patients are usually excluded from specific recommendations, with the eventual result that while other diseases are getting the spotlight, arterial hypertension is always the Cinderella responsible for doing the dirty work. This significantly reduces the perception of the role of hypertension as a crucial risk factor, reduces the opportunity of promoting a campaign of prevention based on the central role of hypertension and its integration with the other promoters of CV risk, and, finally, reduces the interest in the preventive impact of blood pressure control in patients with important co-morbidities.

Last, but not least, the consideration of hypertension simply as an unavoidable feature of the population at risk of CV disease can significantly compromise the interest of pharmaceutical companies in research into this very important field. It is a matter of fact that no drugs are currently in the clinical stage of development for hypertension, despite very active research activity looking for possible targets for treatment in the field of neuro-humoral systems and genetic analysis. The most sensational results in terms of blood pressure control have been the increase in SBP observed with some CETP-inhibitors (and even the most successful among them, anacetrapib, has some minor problems with blood pressure control) and the unexpected reduction in both SBP and DBP observed with the two SGLT-2 inhibitors (empagliflozin and canagliflozin) in the recently published pivotal mortality-morbidity studies. On the other hand, the same motivation can result in a quantifiable reduction of financial contributions for the organization of the major hypertension meetings since patients with elevated blood pressure values are not currently identified as a "commercial" target for innovative cardiovascular prevention.

In conclusion, there are many reasons to believe that the actual role of arterial hypertension is currently underestimated in the comprehensive perception of what are the most appealing modifiable risk factors for cardiovascular disease. One of the most important

factors to remember is, however, that hypertension is almost never alone and in many cases, can represent the most suitable and cheap driver for the understanding of who should be treated, and how. This approach will emphasize the importance of blood pressure measurement and monitoring while justifying an aggressive policy for stricter blood pressure control that could result in a direct (hemodynamic) and indirect (residual risk profile) reduction in the still elevated risk of cardiovascular disease in the general population.

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Award for Public Health Foundation of India (PHFI)

In recognition of the Public Health Foundation of India's outstanding contribution to skill building initiatives and advancement of knowledge in the Indian healthcare sector, the Quality Council of India (QCI) has awarded to the Public Health Foundation of India the prestigious QCI-DL Shah Platinum Award for skill building of primary care physicians in chronic conditions.



Left to Right: Professor D. Prabhakaran, Professor K. Srinath Reddy, Shri. Baijayant Panda, Honourable Member of Parliament (Lok Sabha), Shri. Amitabh Kant, CEO Niti Aayog and Dr Sandeep Bhalla, Programme Director, Trainings, Centre for Chronic Conditions and Injuries, PHFI

The Platinum Award was presented to PHFI by Shri. Baijayant Jay Panda, Honourable Member of Parliament (Lok Sabha) and Shri Amitabh Kant, CEO, Niti Aayog, Government of India during the inaugural session of the 12th National Quality Conclave at Le Meridien hotel. With this additional recognition, PHFI wins the topmost award for Quality and completes the Grand Slam of Skill Development Awards.

The training division at the Centre for Chronic Conditions and Injuries led by Professor Prabhakaran and Dr. Sandeep Bhalla has trained more than 20,000 primary care physicians across the country through their various capacity-building initiatives.

Winning the prestigious QCI-DL Shah Platinum Award in addition to other leading awards in skill development is a testimony to our endeavour and commitment to working towards a healthier India. Our health systems can be effective and equitable only when primary health care is widely accessible and scientifically of sound quality. The award exemplifies PHFI's Mission which is to contribute to the better-quality healthcare of all citizens, especially through skill development and knowledge advancement in primary health care.

We would like to thank the International Society of Hypertension for all the support extended in making this achievement possible. We look forward to continuing to work towards a healthier India through this wonderful association.

*Dr. Arun P. Jose, Program Manager
Certificate Course in Management of Hypertension (CCMH), Public Health Foundation of India*