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Journal of Cardiology & Current Research

Editorial

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Current approaches to hypertension treatment: are there promising results?

Volume 3 Issue 2 - 2015

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Received: August 06, 2015 | **Published:** August 12, 2015

Editorial

There is always increased evidence of the role and significance of the changes in blood pressure in the medical research and, therefore, the large majority of cardiovascular issues give a wide spectrum of papers to this outcome. Journal of Cardiology & Current Research (J Cardiol Curr Res) has developed and continuously develops different cardiovascular topics in its content, but papers related to cardiovascular risk factors, including hypertension and hypertension itself with no other accompanying risk factors have shown to be taken into account.[1-3] The interpretation of the medical results provided by the study of hypertension is very complex and complicated by the fact that there are different clinical and methodological approaches to the subject, moreover accompanied by multivariate statistical estimates with confounding bias. However, as an Editor of the journal my purpose is to light up those concepts widely debated trying to provide consistent conclusions.

A first statement to be taken into account, which was constantly underlined in the past, but often omitted today, is the fact that the term "essential" characterizes the large majority of the papers related to the hypertension, although not often terminologically reported by them. This is a lack to be certainly filled. Thus, there are pictures of secondary hypertension that are well classified either with regard to the etiology or pathogenic mechanisms, but such a condition does not occur for the essential hypertension. This is a basic explanation for the role of the physician is to support carefully all those steps that protect the population from the adverse effects caused by an incorrect approach to prevent and treat the disease. Thus, essential hypertension is an exact definition, which permits to better classify the characteristics of elevated blood pressure deriving from unknown cause.

It is worth noting that a factor to be taken into account is the association between hypertension and smoking because the risk related to this association may adversely influence both the values of blood pressure and its response to the therapy. It could be kept in mind that the current values to define hypertension are 140/90 mmHg and over[4] in individuals with no other disease or cardiovascular risk factors associated. Indeed, there is evidence that is very difficult to find blood pressure levels under 140/90mmHg in dated chronic smokers.[5] It remembers superfluous that smoking is a pleasant habit that, however, could be absolutely avoided.

When we have overtaken these basic concepts, a clear question should be faced up: what is the goal of the treatment of hypertension and, consequently, are there promising results? Two types of approach characterize the treatment of hypertension, the one based on preventive measures and drugs and, conversely, the other by using immunological and surgical procedures.[6] However, the two interventions can be sometimes associated.

Antihypertensive drugs are a wide class of chemical substances characterized by different properties, but, however, able to influence the values of both systolic and diastolic blood pressure. Stroke and myocardial infarction could be partially reduced in rate by an effective treatment. Data suggest that a reduction of the blood pressure of 5mmHg can decrease the risk of stroke and its complications by 34% and of ischemic heart disease by 21% with an obvious decrease in mortality from these events. There are many classes of antihypertensive drugs.

Among the most important and most widely used drugs, there are diuretics, calcium channel blockers, ACE-Inhibitors, ARBs (Angiotensin II Receptor Antagonists) and beta-blockers, which are perhaps the drugs mostly used in the pharmacological treatment of hypertension. The type of medication to use initially for hypertension has been documented by several large studies, permitting to give different guidelines for hypertension therapy. The fundamental goal of treatment should be the prevention of three non-fatal and fatal cardiovascular events such as heart attack, stroke and heart failure. Patient age, associated clinical conditions and appearance of organ damage also play a significant role in determining dosage and type of medication administered. The antihypertensive drugs are characterized by different side effects and costs with no more evident preventive response, which strongly depends on the degree of blood pressure lowering Therefore, the choice cheaper drugs would be equally effective in case of documented reduction of hypertensive values. This fact leads to prefer initially beta-blockers and diuretics.

Blood pressure vaccines are being trialed and may become a treatment option for high blood pressure in the future. Experimental and clinical studies have shown that vaccination against the renin-angiotensin system is effective in reducing blood pressure. In addition, in the case of atherosclerosis, vaccines targeting endothelial, macrophage, immune system, and lipid metabolism targets have been shown to reduce atherosclerosis, but only in animal models. The development of vaccines for hypertension and atherosclerosis may

be a future strategy for the prevention and treatment of the disease, although weak results still support these conclusions. Currently, only CYT006-AngOb should seem to have moderate success in hypertension treatment.[6]

Surgical interventions for the control of arterial hypertension involve mainly renovascular and malignant hypertension characterized by severe organ damage. It is worth noting that they should be associated with an aggressive control of major cardiovascular risk factors because the progression of atherosclerotic stenosis may occur in as many as one third of patients, and the sequelae of ongoing ischemia to the stenotic kidney have been well documented. In addition, the possible normalization of blood pressure obtained may be associated with reduced renal perfusion, which impairs renal function despite good blood pressure control. The main goal of the intervention consisting in the reduction of hemodynamically significant stenoses is to avoid the development of ischemic nephropathy. However, trials comparing renal artery revascularization with medical management do not unequivocally favor surgical over medical intervention. Also sympathetic renal denervation[7] takes place for the control of malignant hypertension with always major rate, but not clearly positive results.

Conclusion

Concluding this editorial, my personal opinion is the progresses in the treatment of hypertension can be observed, but these are of weak importance when compared to the dramatic and the highest number of hypertensive subjects. Some promising results seem to be in prospect, but the future of the treatment of hypertension is still far to be solved.

Acknowledgments

None.

Conflicts of interest

Author declares there are no conflicts of interest.

Funding

None.

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